



Chabot-Las Positas Community College District

Comprehensive Local Needs Assessment

May 2024

Prepared by WestEd's Center for Economic Mobility

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Executive Summary

Developing career pathways at Chabot Las Positas Community College District (CLPCCD) is critically important given the occupational demand, high cost of living, and impact on equitable economic outcomes for low income communities in the East Bay of San Francisco. There is clear return on learner investment for community college certificate and degree programs leading to employment. In a recent study, Las Positas College ranks amongst the highest in return on investment¹. Despite growth in the area, many people lack the opportunity to take advantage of the post pandemic recovery and regional economic and population boom. This 2024 Comprehensive Local Needs Assessment (CLNA) allows CLPCCD to reflect and take stock of the needs and strategies that support student success.

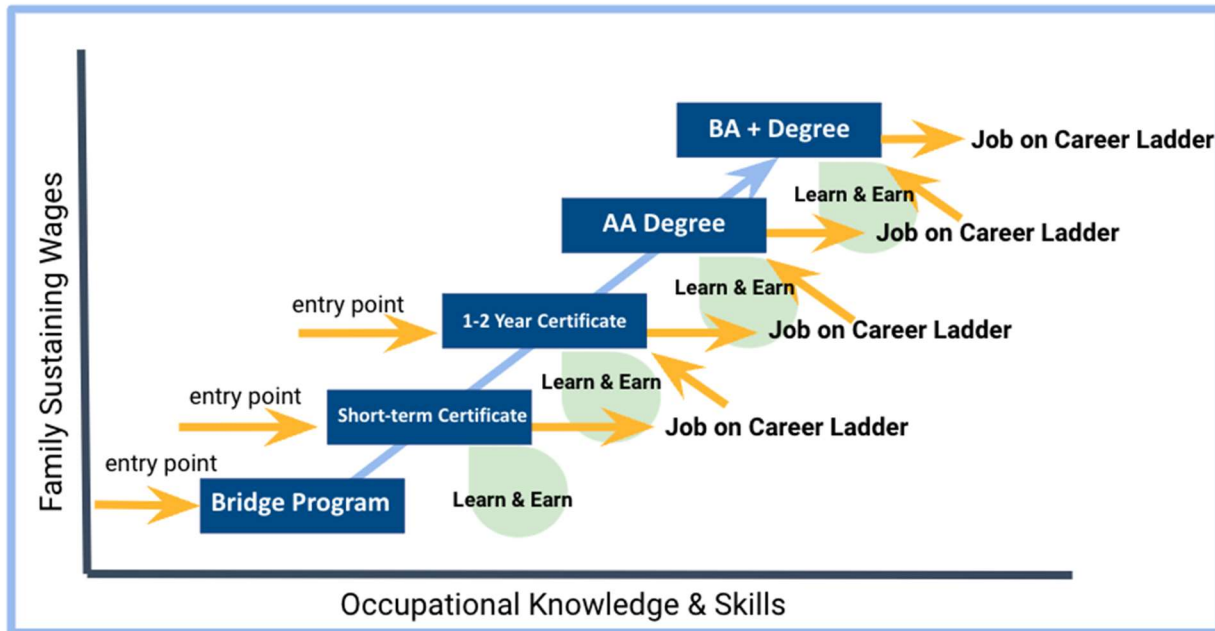
While the Bay Area economy has largely recovered from the COVID-19 pandemic, economic disparities that became evident and even amplified during that time remain to be addressed, especially for communities of color and historically underserved populations. Given the anticipated growth sectors and the persistent underrepresentation of women and communities of color in high-wage high-skill careers, enrollment and success in career education programs at Chabot and Las Positas Colleges are vital.

Career education programs at CLPCCD are aligned with the labor market information, and are largely meeting or exceeded the negotiated rates across all four Core Indicators, yet there are opportunities for growth in high demand industries including Health, Business & Management, Engineering & Industrial Technologies, Family & Consumer Sciences, Information Technology, Education and Public & Protective Services

Foundational to the development of an equitable career educational system, a common framework is needed to create and sustain cohesive practices, policies and partnerships that align with the ecosystems of industry, K12 and adult education, Chabot College and Las Positas Colleges, CLPCCD, and statewide community college initiatives like the Chancellor's Office's Vision 2030 roadmap. Figure 1 provides a model of a basic career pathway, adapted from Alliance for Quality Career Pathways (2014).

¹<https://collegefutures.org/insights/golden-opportunities-measuring-return-on-investment-in-california-higher-education-for-low-and-moderate-income-learners/>

Figure 1. Basic Career Pathway Model²



This graphic in Figure 1 illustrates the ideal student journey, with multiple entry and exit points, learn and earn opportunities along the way, leading to higher knowledge, skills, and pay. The pathways would include multiple pivot points where students can activate transferable skills and earn credit for prior learning with short-term certificates and certificates "industry-valued" when appropriate and possible. Additionally pathways would be skill- and competency-based, and allow students to continue learning seamlessly into transfer pathways.

The strategies outlined in this CLNA are designed to reinforce and bolster the structure of career pathways while prompting each program to identify and address pain points within their respective pathways to enhance coherence. This report aims to spotlight the high-demand, high-wage industries and programs, as defined by the Chancellor's Office, within the CLPCCD service area, including healthcare; professional, scientific, and technical services; construction; and manufacturing—all of which are reflected in the District's career education program offerings. Some instances see both colleges offering programs in these sought-after fields, while in others, they provide complementary Career Education (CE) programming. Collectively, as a district comprising two colleges, the array of program offerings effectively aligns with the needs of high-demand industries.

² Adapted from Alliance for Quality Career Pathways (2014), Fein (2012), and Wachen et al., (2010).

It is imperative that actions are in place to bring about changes for programs to best serve the region’s students. The longstanding economic disparities among populations in Alameda County are not immutable. CLPCCD has the means to provide accessible, high-quality education that can pave the way to sustainable, living-wage careers. Yet students require the necessary tools, resources, and training to fully capitalize on the opportunities afforded by the colleges. This report encourages readers to reflect on the changes within their influence to ensure that career education thrives across all facets of the colleges, extending beyond traditional Career Technical Education (CTE).

Four primary barriers surfaced in the 2024 CLNA faculty and industry partners survey, which this report intends to address and make connections between these pain points and the approaches that support a cohesive career pathway model (Table 1).

Table 1. Key Barriers and Strategies Addressed in 2024 CLNA

Key Barriers ³	Strategies
Limited awareness or promotion of CTE programs among students and within the community	<ul style="list-style-type: none"> ● Build equity-driven dual enrollment programs that start K12 students on a career pathway (pg. 33) ● Leverage Institutional Learning Outcomes (ILOs) to create collegewide career coherency (pg. 26) ● Grow an environment of continuous improvement to learn what works (pg. 33)
Difficulty keeping curriculum aligned with rapidly evolving industry needs and standards	<ul style="list-style-type: none"> ● Deepen industry partnerships to support relevant learning (pg. 26) ● Deploy evidence-informed strategies for Industry Advisories Committees (pg. 27) ● Leverage program review process to align with labor market needs (pg. 28) ● Invest in professional opportunities tailored to CTE fields (pg. 30)
Programs lack sufficient faculty or aides to ensure students get the level of instruction and support they need to succeed	<ul style="list-style-type: none"> ● Direct recruitment efforts to market the benefits of working in higher education (pg. 30) ● Offer professional opportunities tailored to CTE fields (pg. 30) ● Grow an environment of continuous improvement to learn what works (pg. 33)
Limited availability of internship or apprenticeship opportunities	<ul style="list-style-type: none"> ● Expand work-based learning to enrich all students (pg. 25) ● Design innovative and flexible programs (pg. 33) ● Ensure all students are prepared and have access to paid experiences, especially first generation and low-income students leveraging LAEP funding (pg. 25)

³ 2024 CLNA Faculty and Industry Partner Survey (See Appendix)

I. Overview of Purpose of Perkins V Comprehensive Local Needs Assessment (CLNA)

The Strengthening Career and Technical Education for the 21st Century Act of 2018 (Perkins V), Title I-C Basic Grant allocates funding to California Community College System Districts. Section 134 of Perkins V requires eligible applicants to conduct a Comprehensive Local Needs Assessment (CLNA) related to career education (CTE TOP-coded Programs), and include the results of the assessment in the local application updated every two years. The CLNA serves as a roadmap for enhancing college and career readiness initiatives, informing funding decisions, guiding colleges in addressing key gaps, and fostering collaboration among stakeholders to ensure the success of students in the Chabot Las Positas service area, and the Bay Area region as a whole.

The purpose of the CLNA is to support data-driven decision making and to more closely align planning, spending, and accountability activities under Perkins V. For this reason, a diverse group of stakeholders is engaged to inform each District of current strengths and opportunities of the programs from their perspective. Other requirements set forth by Perkins V include providing data and reporting on: 1) student performance on required Indicators; 2) program size, scope, and quality to meet the needs of all students; 3) progress towards implementation of CTE programs of study; 4) improving recruitment, retention, and training of CTE professionals, including underrepresented groups; 5) progress toward equal access to CTE programs for all students; and 6) alignment to labor market information. In addition, in keeping with the State Chancellor's Office's *Vision 2030: A Roadmap for California Community Colleges*, equity of access and success is reflected in the disaggregated data and results in this CLNA.

The CLNA review encompasses the following three concepts: 1) That CE programs funded with Perkins V allocations are of sufficient size, scope, and quality to meet the needs of all students served; and aligned to State, regional, or local in-demand industry sectors or occupations identified by the State workforce development board or local workforce development board; and designed to meet local education or economic needs not identified by State boards or local workforce development boards; 2) That local performance accountability data as established by Perkin V §113 is reviewed for student performance gaps for a variety of subgroups and for special populations as defined in the Act; and 3) That the review assess processes in place for a variety of required Perkins V concepts and all possible gaps identified by advisory stakeholders to determine gaps to student success from secondary to postsecondary to employment with multiple entry and exit points.

II. Identified needs and priorities from the district 2022 CLNA

In the 2022 Comprehensive Local Needs Assessment, Chabot-Las Positas Community College District aimed to position itself as a regional leader in workforce development, prepared to meet the challenges of the 21st-century economy and adapt to labor market changes. The report challenged the District to leverage best practices from national models, and ensure equity in access and outcomes for all students, and identified the areas requiring attention and improvement to enhance college and career readiness programs. The report communicated a strong commitment to 1) align educational offerings with labor market demands, 2) develop supportive partnerships with K12 institutions and the workforce development system, and 3) foster success by increasing the focus on skills and competencies directly applicable in the workplace. Several priorities emerged from the 2022 assessment, each pinpointing specific gaps and offering recommendations for addressing them.

Priority 1: Enhance regional collaboration and coordination. By fostering synergy in employer engagement, program development, and cross-system coordination, students' economic opportunities can be maximized. Chabot Las Positas aimed to increase engagement with key stakeholders in high-demand industries to ensure educational offerings remain responsive to evolving needs. Strengthening feedback loops with industries enables colleges to tailor programs according to skill requirements. Collaborative efforts with entities like the Alameda County Workforce Board further enhance alignment, fostering the development of comprehensive workforce programs. This includes optimizing the program portfolio through enhanced collaboration among various stakeholders, including employers, labor, K12 institutions, Adult Schools, Workforce Development Boards, and Community-Based Organizations (CBOs).

Priority 2: Focus on collaboration and coordination in critical occupations, skills, and sectors essential for the Bay Region economy. Identified high-priority sectors such as advanced manufacturing, transportation, health sciences, and information technologies underscore the need for alignment with college offerings. There was an emphasis on strengthening feedback loops and involvement with high demand, industry-focused regional initiatives to ensure that educational offerings meet current and emerging needs. As noted in the State Chancellor's Vision 2030, one critical emerging technology is generative AI, and the Chancellor is committed to ensuring that community colleges are leaders in how AI creates new opportunities for learning and work. Given its workforce partnerships, CLPCCD is better positioned than many community college districts to lead the way on AI.

Priority 3: Use data-driven decision-making by advocating for access to student and employment outcomes data for deeper research. Collaboration with qualified researchers both within and outside the community college system can provide valuable insights for improving program effectiveness. The report also sought to address the timeliness and data accuracy of Labor Market Information (LMI), affecting the colleges' ability to respond effectively to labor market changes and ensure that certificates, degrees, and training programs align closely with current and future labor market needs, facilitating student entry into well-paying jobs.

Priority 4: Focus on skills. The evolution of education is marked by a shift towards a more dynamic and skill-centric approach, evident in the emphasis on stackable skills and credentials. Recognizing the need for agility in today's job market, Chabot Las Positas aimed to streamline programs to equip students with market-aligned skills in shorter durations, facilitating quicker entry into the workforce with livable wages and pivot towards a skill-based education model, fostering greater adaptability and employability across various high-demand industries.

Priority 5: Provide short-term training to meet evolving market demands. Leveraging the resources of the Workforce Development system can facilitate recruitment into relevant short-duration programs, especially for displaced and underemployed workers, fostering sustainable enrollment growth. Development of Stackable Skills and Credentials: Focus on enabling students to develop skills and credentials within short time frames, emphasizing labor market alignment and livable wages. This included the need for more professional development opportunities, especially for faculty teaching in rapidly evolving fields.

Priority 6: Strengthen K-14 to career pathways. From the identified gaps in the 2022 CLNA, CLPCCD found that there was a need to create cohesive pathways for students transitioning from secondary to post-secondary education. The challenges in developing aligned programs of study lie in the articulation and dual enrollment processes. There is a pressing need to establish seamless transitions that ensure students' academic credits are recognized across educational institutions. By streamlining articulation agreements and enhancing dual enrollment programs, CLPCCD would be able to provide students with clearer pathways towards their desired careers, fostering a smoother transition into higher education. Both Chabot and Las Positas College recognize the importance of strong partnerships with high schools and ROPs in their area. This was highlighted in previous CLNAs, where both colleges' applications requested funding to support outreach and relationships with K12 partners. Chabot planned to improve dual enrollment, CCAP DE, concurrent enrollment, articulation agreements, industry outreach days, and K12 Strong Workforce partnerships through activities like industry-specific days, DE opportunities, and

concurrent facilitation. LPC proposed to build linkages with K12 through curriculum that would articulate with high schools/ROPs. Both Chabot and Las Positas used Perkins funds to purchase CATEMA, an online registration and management system to track students in articulation programs.

Priority 7: Integrate specialized support and career services, including work-based learning and apprenticeships, into all Career and Technical Education (CTE) programs to offer students practical experience and industry connections. The 2022 needs assessment also highlighted a lack of systematic processes for counseling and outreach, emphasizing the need for more specialized resources in career guidance. By providing tailored counseling services, students can receive personalized support in navigating career education programs and making informed decisions about their academic and professional paths. This targeted approach to counseling and outreach can significantly boost student engagement and retention rates while fostering a more supportive learning environment. Additionally, it is vital to consider supportive services in the development of workforce programs to address barriers to student success, such as increasing diversity, equity, inclusion, and belonging. This can be achieved by requiring colleges to develop equity plans for each priority area and ensuring that equity goals are integrated into all initiatives, thus fostering a more inclusive educational environment.

While the Bay Area economy has largely recovered from the COVID-19 pandemic, economic disparities that became evident and even amplified during that time remain to be addressed. Given the anticipated growth sectors and the persistent underrepresentation of women and communities of color in lucrative careers, the priorities outlined in the previous CLNA remain vital. Regional initiatives tailored to specific sectors can play a crucial role in promoting equity by providing career services, work-based learning, and apprenticeships. High-demand industries such as healthcare, professional services, construction, and manufacturing drive the local economy, aligning with the career education programs offered by the District. In some instances, both colleges offer programs in these high-demand fields, while in others, they provide complementary career education options, reflecting a strategic approach to meeting workforce needs.

III. Stakeholder Engagement

There were several key strategies used to engage required stakeholders in the development of the CLNA. The first approach was holding a set of structured interviews with those who have a critical understanding of the needs and opportunities in the career education space, the second was a survey that engaged faculty and employer partners, and the third was a student survey. Additionally, the report was vetted through college Career Education Advisories at Chabot College and Las Positas College. Note that all meetings and interviews were held virtually.

Table 2. Engaged Stakeholders in the 2024 CLNA Process

Stakeholder Group	Name	Role/Position	Organization	Engagement Method
Industry Partners	Beth McCormick	Employer Engagement Specialist	Independent Consultant for LPC	Interview
Industry Partners	Katie Marcel	CEO	Innovation Tri-Valley Leadership Group (ITV)	Interview
Education Partner	Linda Vaughn	Regional Director (Public Safety Sector)	BACCC	Interview
Industry Partners	Nadine Horner	Senior Advisor: Government and External Affairs and Community Relations	Lawrence Livermore National Laboratories	Interview
Faculty	Brian Hagopian	LPC CTE Faculty (AUTO)	Las Positas College	Interview
Faculty	Dan Marschak	LPC CTE Faculty (MUS)	Las Positas College	Interview
Education Partner	Blaine Torpey	Superintendent	Eden Area ROP	Interview
Administrators	Tracey Coleman	Chabot Academic Dean (Applied Tech & Business)	Chabot College	Interview
Education Partner	John Salangsang	Chabot Career Center Counselor Coordinator	Chabot College	Interview
Faculty	Alice Hale	Chabot CE Faculty (Early Childhood)	Chabot College	Interview

		Development)		
Administrators	Yvonne Wu Craig	Chabot Institutional Advancement Executive Director	Chabot College	Interview
Education Partner	Jill Oliveira	Dream Center Coordinator/ Counselor	Las Positas College	Interview
Administrators	Evelyn Andrews	Veterans Specialist	Las Positas College	Interview
Faculty	Dave Vetrano	CE Faculty (Advanced Manufacturing)	Chabot College	Interview
Industry Partners	Michelle Kent	American Medical Response	Chabot College	Interview
Students	N/A	N/A	LPC/CC	Survey - 283
Faculty	N/A	N/A	LPC/CC	Survey - 30
Industry Partners	N/A	N/A	LPC/CC	Survey - 10
Administrators	N/A	N/A	LPC/CC	Survey - 4

IV. Partnerships and Collaborations

Cross-sector partnerships are foundational to maintaining and strengthening career education programs and student outcomes, which require regional and county-level coordination. In the CLNA survey, Las Positas College and Chabot College have partnerships that create opportunities to evolve industry demands and provide students with valuable career awareness and employment prospects; partnerships and subregional collaborations with sector-focused strategies are essential. These collaborations offer students insight into potential occupations and careers while enabling adaptation to changes in licensure and degree requirements through industry engagement. These partnerships create avenues for additional collaborations with neighboring jurisdictions, fostering a broader network of support and resources for students and stakeholders alike.

In the 2024 CLNA survey, faculty and industry respondents were asked to rank the ideal roles of partners, see Table 3. The most chosen option was “providing internship or apprenticeship opportunities for students,” with the majority of respondents ranking it 1, 2 or 3. This need was also mirrored in the student survey as the number one resource they would most like to have added to enhance their learning experience, see Table 4.

Table 3. Rank choice of ideal role of partners by Faculty and Industry partners according to 2024 CLNA survey

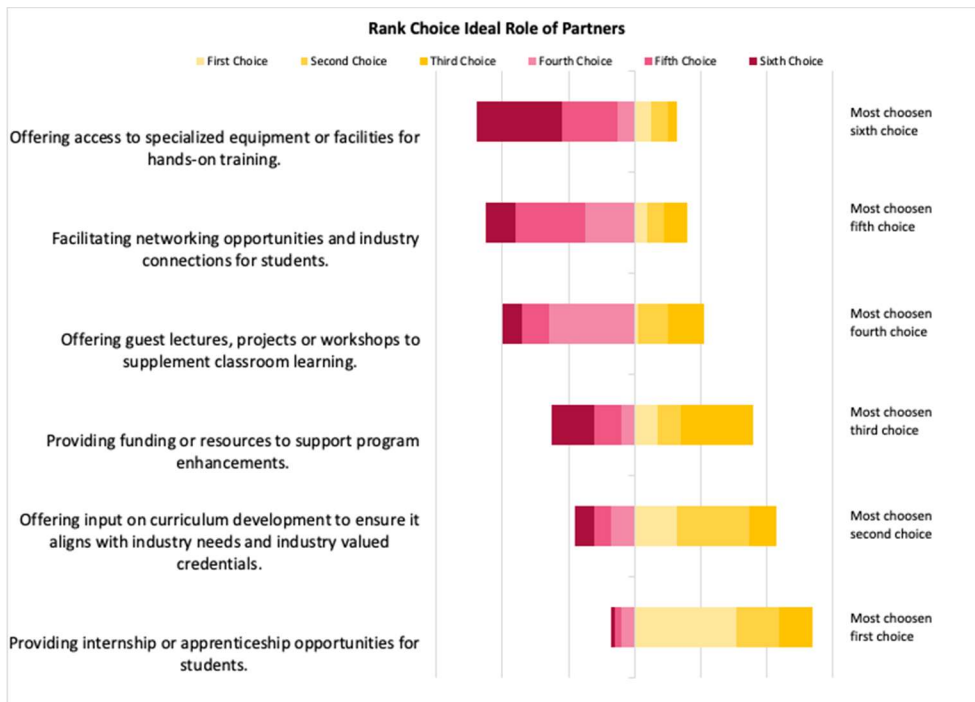
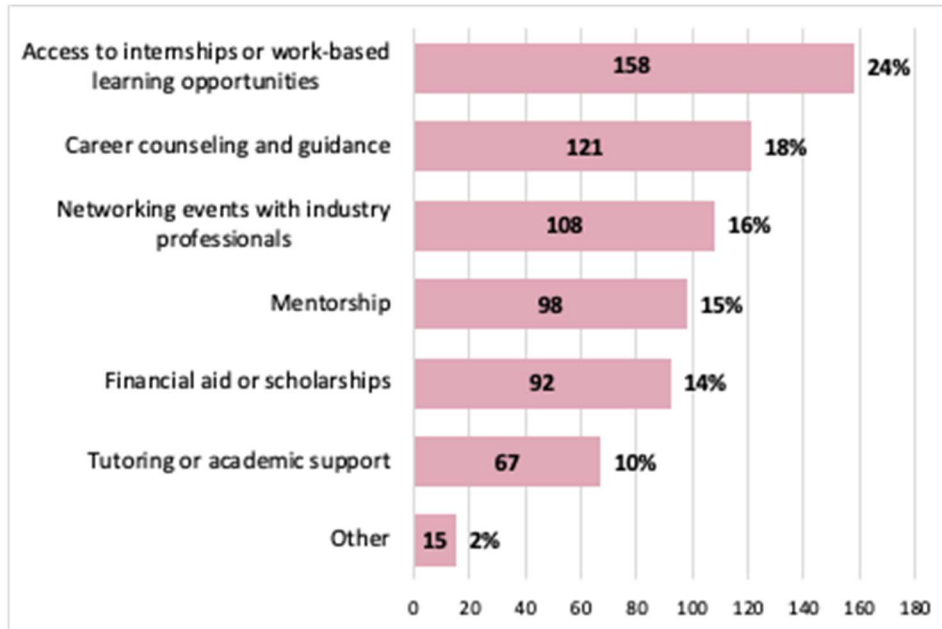


Table 4. Most requested resources by CTE students according to 2024 CLNA survey



Las Positas and Chabot Colleges’ partnerships include K12 institutions, public and private employers across a variety of industries, and a strength in public safety, manufacturing, and transportation. Several effective partnerships of note:

Las Positas College’s partnership with Livermore National Labs and other advanced manufacturers has led to the development of increased student engagement and success in workforce programs through targeted career counseling, expanded work-based learning opportunities such as internships and apprenticeships, and increased employer involvement in program design and student evaluation, as well as pathways into the Labs and other employers, and transfer pathways to 4-year institutions for students pursuing engineering degrees. The collaboration has led to Las Positas being cited by the business-led Innovation Tri-Valley Leadership Group as critical to creating a community college to private sector pipeline.⁴

Chabot College’s partnerships and collaboration with local employers like Mercedes, Subaru, Hunter, and A/C Transit as key to program success and addressing equity issues, as well as possible new programs like construction and paramedic studies. These partnerships, facilitated through industry connections, offer students free training integrated into their curriculum, leading to individual certificates and improved job

⁴ Innovation Tri-Valley Leadership Group, Bay Area Council Economic Institute. (2021). *Vision 2040: Rising to the Challenge and Shaping a Dynamic Future for the Tri-Valley*. https://innovationtrivalley.org/wp-content/uploads/2021/08/Innovation_TriValley_2040VisionPlan_FINAL.pdf

prospects. There is a pressing need for regional workforce development in advanced automotive technologies, including electric vehicles.

Three sub-regional initiatives were lifted up by the four East Bay workforce development board's East Bay Regional Planning Unit (EBRPU) and the Alameda County Workforce Board specifically. CLP should explore partnership with these and similar initiatives focused on three priority industries.

- a) AMBayArea Manufacturers (East Bay EDA)
- b) East Bay Health Workforce Partnership (EBHWP)
- c) East Bay Information Communication Technology Partnership (EBICTP)

Early outreach, credit/enrollment and exposure with ROP and K12 partners. Chabot College fosters a robust partnership with the K12 and ROP focused on high-demand industry information and strategic data utilization, with discussions spanning the implementation of a middle college model and the potential establishment of apprenticeship programs. Las Positas College partners with Quest, an innovation-focused nonprofit organization, dedicated to bringing science education to K12 students, both within and outside the classroom. Quest members have initiated a pilot robotics program at a local middle school and regularly host innovation fairs. Recognizing the importance of early engagement in career and college exploration, both colleges are committed to aligning pathways with the region's priority sectors, such as healthcare, advanced manufacturing, and engineering. LPC also partners closely with Tri-Valley ROP. LPC partners with K12 partners through the Tri-Valley Educational Collaborative (TEC) and Tri-Valley Partnership Projects. To this end, initiatives like articulation agreements and dual enrollment programs are being expanded to enable high school students to earn college credits, aligning with Vision 2030's ambitious goal of graduating high school with 12 units of college credit⁵.

Bay Area K-16 Collaborative. As a new effort led by CLPCCD for the region, K12 districts, major transfer universities in the area, regional community college districts are aligned in building regional pathways from TK to baccalaureate careers in the following sectors: Education, Computing, Engineering, Health, and Biotechnology. Employer engagement in creating regional structures for work-based learning and dual enrollment (early college credit) will strengthen career pathways and bring additional resources to Chabot and Las Positas Colleges. CLPCCD faculty, classified professionals, and administrators are contributing to the implementation of this regional scale effort which kicked off in Spring 2024. Funded by the state, the Bay Area K-16 Collaborative is a historical effort involving over forty public and private partners spanning five counties to

⁵ <https://www.cccco.edu/About-Us/Vision-2030>

create collaborative aligned systems centered on the idea that our local pipeline of talented learners are the future of the local economy.

Apprenticeship Programs. CLPCCD and its colleges are a nationally recognized resource for Apprenticeship program development partnering. Through industry partnerships, over 20 programs are hosted by Chabot and Las Positas College; nearly 3000 apprentices are actively served through credit instruction career education programs. Spanning traditional fields in construction and also fields in health and transportation, the district's strength provides opportunity for further industries and employers including apprenticeship pathways to baccalaureate.

Chabot-Las Positas Community College District

V. District Profile

The Chabot-Las Positas Community College District (CLPCCD) is a prominent entity within the California community college system, renowned for its contribution to higher education in the San Francisco Bay Area. Consisting of two distinguished colleges—Chabot College in Hayward and Las Positas College in Livermore—the district prioritizes providing accessible and relevant higher education options to local residents, fostering the development of skills, interests, and career potential. At the core of CLPCCD's mission is a commitment to delivering innovative educational opportunities and support services, preparing students to excel in a diverse global society by nurturing critical thinking, social engagement, and workplace knowledge. The distinct missions of Chabot College and Las Positas College further emphasize their dedication to student-centered education, equity, and the cultivation of empowered individuals who contribute to a more equitable and sustainable world through their academic pursuits and personal development journeys.

Since its establishment in 1961, CLPCCD has been dedicated to offering high-quality academic programs and career skill development opportunities to residents of southern Alameda County and neighboring areas. Chabot College, the inaugural college of CLPCCD, was founded in 1961, while Las Positas College started as an extension of Chabot College in 1963 and gained independent status in 1988, achieving full accreditation in 1991. Combined, these two colleges annually serve a diverse student body exceeding 29,000 students.

Spanning nine localities including Castro Valley, Dublin, Hayward, Livermore, Pleasanton, San Leandro, San Lorenzo, Sunol, and Union City, the CLPCCD service area extends beyond these borders, attracting students from cities such as Alameda, Fremont, Newark, Oakland, San Jose, San Ramon, and Tracy. While both colleges cater to slightly different demographics from their feeder cities, a significant portion of their student populations self-identify as individuals of color, first-generation college attendees, and low-income individuals.

Since the last full CLNA in 2020, the population of Alameda County continues to shift. Table 5 shows the CLPCCD Service Area and Alameda County as a whole, in both 2019 and projected 2029 data. For the CLPCCD Service Area, the data show that the African American population is expected to decline from 7% to 6%, as the Asian American population increases from 32% to 35%. The White population is expected to decrease from 31% to 29%, and the Latinx population remains steady at 26%. For Alameda County

as a whole, the projections are similar: African American and White populations decrease slightly (10% to 9% and 31% to 28%, respectively), while the Asian American population is expected to grow (from 32% to 35%). Again, the Latinx population holds steady at 23%. In Table 6, females are overrepresented in Chabot Las Positas, compared to Alameda County overall.

Table 5. CLPCCD Service Area & Alameda County demographics

Race/ethnicity	CLPCCD Service Area		Alameda County	
	2019	2029 (projected)	2019	2029 (projected)
African American	7%	6%	10%	9%
Asian American	32%	35%	32%	35%
White	31%	29%	31%	28%
Latinx	26%	26%	23%	23%
Other	5%	5%	5%	5%

Source: CCCCO MIS, American Community Survey 2022 1 Year Estimates

Table 6. Gender of CLPCCD Students AY 2022-2023 & Alameda County

Gender	CLPCCD	Alameda County
Female	52.1%	50.3%
Male	47.9%	49.7%
Total	100.0%	100.0%

* 5.6% of students' gender is unknown and have been excluded for comparison purposes.

Source: CCCCO MIS, American Community Survey 2022 1 Year Estimates

Many area residents, especially on the western side of the District service area, do not have a postsecondary degree or credential. Poverty rates for this area are as high as 9%.⁶ In addition, many residents are recent immigrants and might be English learners. Instruction and support services are available at both District colleges to meet the needs of the population and prepare them for their futures.

The area economy has largely rebounded from the effects of COVID-19, although the pandemic did highlight and amplify an unmet demand for healthcare workers. Alameda

⁶ Signature Solutions Corporate Results, Chabot-Las Positas Community College District (CLPCCD) Offices of Institutional Research. (2020). *2020 Environmental Scan*, pp. 39, 53.
<https://districtazure.clpccd.org/strategicplans/files/docs/2021-2026/2020-EnvScan.pdf>

County reached unemployment rates of nearly 15% in 2020, but by early 2024, the rate had fallen to 5.0%. As will be detailed in the Labor Market Alignment Element #6 (Section XI), projections for employment and job growth show double-digit rate increases.

Looking at the racial demographics of Alameda County compared with Chabot Las Positas Community College District, African Americans, Asian/Filipino and White non-Hispanic are all underrepresented. Latinx, multi-ethnic, and Pacific Islander students are overrepresented as are students who are unknown or other. According to Launchboard’s most recent (2020-2021) data, Black or African American students are underrepresented in CTE programs, and Asian, Latinx, and Pacific Islander or Native Hawaiian are overrepresented⁷.

Table 7: Race/Ethnicity of CLPCCD Students AY 2022-2023 & Alameda County

Race/Ethnicity	CLPCCD	Alameda County*
African-American	7.0%	9.6%
American Indian/Alaskan Native	0.2%	0.2%
Asian/Filipino	25.4%	33.2%
Latinx	36.0%	22.2%
Multi-Ethnicity	6.9%	5.7%
Pacific Islander	1.1%	0.6%
Unknown/Other	2.2%	0.7%
White Non-Latinx	21.2%	27.9%
Total	100.0%	100.1%

Source: CCCC MIS, American Community Survey 2022 1 Year Estimates

*Numbers do not add due to rounding.

High-demand industries for the area include healthcare; professional, scientific, and technical services; construction; and manufacturing—which are reflected in the CLPCCD’s career education program offerings. In some cases, both colleges offer programs in high-demand areas, and in others, the colleges offer complementary CE programming. Together as a district of two colleges, the program offerings meet the high-demand industries, but have an opportunity to grow and contribute more skilled workers to the region.

Given this demographic and economic backdrop, the CLPCCD’s mission is more important than ever: to continue to offer innovative educational opportunities and to provide support services to prepare students to succeed in a diverse global society by

⁷ <https://www.calpassplus.org/LaunchBoard/Community-College-Pipeline.aspx>

acquiring workplace knowledge and educational skills, especially in sustainability industries and green jobs of the future.

VI. Element #1: Student Performance on Required Performance Indicators (Disaggregated)

CLPCCD has demonstrated commendable performance on Core Indicator 1, surpassing 90% of the negotiated performance level across all programs, as defined by their two-digit TOP codes (Table 8). The Business & Management program made strides in Core Indicator 2 performance over fiscal years, while two programs remained at the negotiated level of performance. Five programs remained below 90% of the negotiated level, and one program, Media & Communications, experienced a decline, falling below the 90% mark in 22-23.

Core Indicator 3 presents ongoing challenges, with four programs consistently falling below the negotiated performance level. Encouragingly, performance levels have shown improvement for two of these four programs, suggesting a proactive approach to addressing deficiencies in Health and Family & Consumer Sciences. Regarding Core Indicator 4, Agriculture & Natural Resources improved across the 2 years and met the negotiated performance level in 22-23. Most programs showed slight improvement on this Indicator. However, Media & Communications declined to below 90% of the 22-23 negotiated performance level; employment was a challenge for completers in Information Technology and Family & Consumer Sciences as well.

Table 8. CLPCCD Performance on Core Indicators by Two-Digit TOP Code













TOP Title	Core 1 Postsecondary Retention & Placement		Core 2 Earned Postsecondary Credential		Core 3 Non- traditional Program Enrollment		Core 4 Employment	
	21-22	22-23	21-22	22-23	21-22	22-23	21-22	22-23
Fiscal Year								
Agriculture & Natural Resources	84.62	96.15	44.44	66.67	34.48	41.38	69.23	93.75
Architecture & Related Technologies	94.59	96.15	88.89	50.00	50.00	62.96	0.00	71.43
Business & Management	96.36	92.68	76.09	81.87	48.56	46.38	82.56	71.93
Media & Communications	100	93.33	74.29	59.04	42.86	15.05	87.10	55.05
Information Technology	94.88	93.72	47.14	49.30	22.02	20.22	67.91	65.22
Education	100	100	66.67	100			100	100
Engineering & Industrial Technologies	98.42	97.81	19.90	16.07	2.70	1.89	93.68	92.48
Fine & Applied Arts	93.75	94.21	71.74	46.85	42.72	35.28	75.76	78.76
Health	97.57	98.86	88.68	83.20	10.13	14.29	92.22	97.12
Family & Consumer Sciences	92.69	87.00	88.44	85.85	3.89	4.33	72.96	65.40
Public and Protective Services	97.91	97.63	76.17	80.28	34.11	30.69	89.63	91.45
Interdisciplinary Studies	89.29	97.83	37.50	20.00			57.14	83.33
Negotiated Level	89.67	74.53	83.3	81.32	26	23.43	73.23	73
90% of Negotiated Level	80.70	67.08	74.97	73.19	23.40	21.09	65.91	65.70

Source: CCCC MIS

Yellow shaded cells are above 90% of the negotiated level but below the negotiated level, red are below 90% of the negotiated level, unshaded cells are meeting or exceeding the negotiated level. Values in italics have less than 10 concentrators.

Table 9 shows that all special populations are meeting or exceeding the negotiated performance levels for Core Indicator 1, despite the fact that that performance over the past two years has decreased for most groups. It is also noteworthy that there are no students who identify as homeless being served in any programs.

Table 9. CLPCCD Performance on Core Indicator 1 - Postsecondary Retention & Placement by Special Population

Special Population (2022-2023 Count)	FY 2021-2022	FY 2022-2023	Trend
CTE Cohort* (3,293)	96.40	94.33	
Individuals Preparing for Non-Traditional Fields (677)	97.51	96.16	
Out of Workforce Individuals (63)	89.74	78.75	
Individuals with Economically Disadvantaged Families (1,986)	96.34	94.21	
English Learners (196)	95.45	87.50	
Single Parents (186)	94.76	93.94	
Individuals with Disabilities (214)	96.00	91.06	
Homeless Individuals (0)	N/R	N/R	
Youth in Foster Care (41)	97.37	100.00	
Youth with Parent in Active Military (0)	0.00	N/R	
Negotiated Level	89.67	74.53	
90% of Negotiated Level	80.70	67.08	













Source: CCCC MIS

*Note: Students meeting criteria for this Indicator with 12+ CTE units in a discipline (one course is above intro) in 3 years.

Yellow shaded cells are above 90% of the negotiated level but below the negotiated level, red are below 90% of the negotiated level, unshaded cells are meeting or exceeding the negotiated level.

In Table 10, three special populations (e.g., individuals preparing for non-traditional fields, individuals from economically disadvantaged families, and single parents) have moved up a level (from below 90% to above 90% of the negotiated level, or from 90% of the negotiated level to surpassing the full negotiated level for earning a postsecondary credential), showcasing a commendable achievement. Indeed, English learners, single parents, and youth in foster care are performing impressively. Foster youth performance is incredibly noteworthy: an increase of over 25% from 21-22 to 22-23. These results highlight the importance of continued support and targeted interventions to uplift these populations and ensure equitable educational outcomes. Similar efforts need to be expended for out-of-work individuals and individuals with disabilities, whose levels of performance declined across the two years.

Table 10. CLPCCD Performance on Core Indicator 2 - Earned Postsecondary Credential by Special Population













Special Population (2022-2023 Count)	FY 2021-2022	FY 2022-2023	Trend
CTE Cohort* (1,105)	67.87	68.29	
Individuals Preparing for Non-Traditional Fields (261)	72.11	74.57	
Out of Workforce Individuals (31)	92.00	79.49	
Individuals with Economically Disadvantaged Families (760)	74.82	75.02	
English Learners (109)	87.88	88.62	
Single Parents (83)	77.78	84.69	
Individuals with Disabilities (76)	90.48	74.51	
Homeless Individuals (0)	N/R	N/R	
Youth in Foster Care (10)	64.71	90.91	
Youth with Parent in Active Military (0)	0.00	N/R	
Negotiated Level	83.30	81.32	
90% of Negotiated Level	74.97	73.19	

Source: CCCC MIS *Note: Students meeting criteria for this Indicator with 12+ CTE units in a discipline (one course is above intro) in 3 years.

Yellow shaded cells are above 90% of the negotiated level but below the negotiated level, red are below 90% of the negotiated level, unshaded cells are meeting or exceeding the negotiated level.

Table 11 shows that three special populations (e.g., out-of-work individuals, individuals with economically disadvantaged families, and single parents) have been performing above the negotiated level of performance for Core Indicator 3 across the two years. Youth in foster care are again showing commendable progress, this time in non-traditional enrollment, moving from below 90% of the negotiated level to surpassing it. However, individuals with disabilities show a decline in performance. Inexplicably, individuals preparing for non-traditional fields show a large decline in performance on non-traditional program enrollment—perhaps this can be attributed to a statistical anomaly in 21-22 since the 22-23 level is just under the 90% negotiated level.

Table 11. CLPCCD Performance on Core Indicator 3 - Non-traditional Program Enrollment by Special Population













Special Population (2022-2023 Count)	FY 2021-2022	FY 2022-2023	Trend
CTE Cohort* (787)	24.71	23.42	
Individuals Preparing for Non-Traditional Fields (786)	100.00	23.39	
Out of Workforce Individuals (19)	30.38	24.05	
Individuals with Economically Disadvantaged Families (572)	28.68	28.19	
English Learners (53)	22.69	21.12	
Single Parents (53)	32.63	25.73	
Individuals with Disabilities (40)	24.31	18.60	
Homeless Individuals (0)	N/R	N/R	
Youth in Foster Care (12)	20.00	30.77	
Youth with Parent in Active Military (0)	100.00	N/R	
Negotiated Level	26.00	23.43	
90% of Negotiated Level	23.40	21.09	

Source: CCCCO MIS *Note: Students meeting criteria for this Indicator with 12+ CTE units in a discipline (one course is above intro) in 3 years.

Yellow shaded cells are above 90% of the negotiated level but below the negotiated level, red are below 90% of the negotiated level, unshaded cells are meeting or exceeding the negotiated level.

All but three special populations have met or exceeded the negotiated level of performance for Core Indicator 4 across the 2 years: out-of-work individuals, English learners, and individuals with disabilities. Individuals with disabilities have seen a substantial decrease in employment between FY 21-22 and FY 22-23.

Table 12. CLPCCD Performance on Core Indicator 4 - Employment

Special Population (2022-2023 Count)	FY 2021-2022	FY 2022-2023	Trend
CTE Cohort* (944) (944)	83.81	79.06	
Individuals Preparing for Non-Traditional Fields (128)	84.80	78.05	
Out of Workforce Individuals (17)	57.14	43.59	
Individuals with Economically Disadvantaged Families (505)	82.62	76.17	
English Learners (65)	77.78	65.00	
Single Parents (67)	80.88	79.76	
Individuals with Disabilities (46)	70.59	62.16	
Homeless Individuals (0)	N/R	N/R	
Youth in Foster Care (8)	84.62	100.00	
Youth with Parent in Active Military (0)	DR	N/R	
Negotiated Level	73.23	73.00	
90% of Negotiated Level	65.91	65.70	

Source: CCCCO MIS *Note: Students meeting criteria for this Indicator with 12+ CTE units in a discipline (one course is above intro) in 3 years.

Yellow shaded cells are above 90% of the negotiated level but below the negotiated level, red are below 90% of the negotiated level, unshaded cells are meeting or exceeding the negotiated level.

VII. Element #2: Program Size, Scope, and Quality to meet the needs of all students

A review of the regional reports focused on the economic development and employment trends reflects a consensus on the eight high-demand regional industries: 1) Healthcare, 2) Professional, Scientific, and Technical Services, 3) Construction, 4) Manufacturing/Advanced Manufacturing, 5) Leisure and Hospitality, 6) Public Safety, 7) ICT – Digital Media, and 8) Education, particularly Early Childhood Education. The East Bay Economic Development Agency highlighted a ninth industry, Business Services.⁸ Comparing the high-demand occupations to the offerings at Chabot College and Las Positas College that meet the size, scope, and quality thresholds, it is clear that the employment gap is substantial (see Table 13).

Table 13: Demand and Supply for CLPCCD Programs by Two-Digit TOP Code⁹

TOP Title	Average Annual Openings 2022-2032	Chabot CTE Awards 22-23	Las Positas CTE Awards 22-23	CLPCCD CTE Awards 22-23	Employment Gap
Health	11,356	87	16	103	11,253
Business & Management	9,228	344	205	549	8,679
Engineering & Industrial Technologies	4,366	80	43	123	4,243
Family & Consumer Sciences	2,849	124	50	174	2,675
Information Technology	2,260	33	20	53	2,207
Education	1,642	0	2	2	1,640
Public & Protective Services	971	64	84	148	823
Fine & Applied Arts	509	7	16	23	486
Media & Communications	519	48	11	59	460
Agriculture & Natural Resources	168	0	4	4	164
Architecture & Related Technologies	75	10	0	10	65

Source: Lightcast Quarter 4 2023 Employment Projections, CCCCCO MIS

⁸ East Bay Regional Planning Unit, Regional Plan 2021-24; Alameda County Workforce Development Board 2023 Modified Local Plan; East Bay Forward (East Bay EDA); California Workforce Development Plan, Economic Analysis 2024-2027; CLP District-wide Strategic Plan 2021-26; BACCC Regional Plan 2022-24; UC Berkeley, Bay Area Jobs First Collaborative Regional Plan; Innovation Tri-Valley 2040 Vision Plan; Chabot College EMP 2021-26; Las Positas College EMP 2021-26; Las Positas College and Economic and Workforce Strategic Plan: 2021-26 Road to Economic and Workforce Success; Center of Excellence Priority Industry Profiles: Information & Communications Technology (ICT)/Digital Media, Health, Advanced Manufacturing, Advanced Transportation, Education, Public Safety

⁹ See Appendix for program 6-digit TOP code in CLPCCD

Proposed strategies related to Element #2 are able to support not only students enrolled in CTE programs aligned with high-demand careers, but all CLPCCD students. The District plays a critical strategic role in actualizing these large-scale efforts at both colleges.

What's working

- **New Apprenticeships.** Chabot's Advanced Manufacturing is extending its apprenticeship program into an Associate of Science (AS) track and establishing a pre-apprenticeship program in collaboration with external partners, emphasizing improved job opportunities and career paths for students in the building trades.
- **Responsive Curriculum Development.** LPC's Auto program is responsive to industry trends, such as the shift towards hybrid and electric technology in the electrical sector. Their Advisory boards is composed of local dealers and industry experts provide biannual feedback, which the college uses to update curricula to meet evolving industry demands, ensuring program quality and relevance.
- **Design to students' needs and interests.** LPC is working to cater to students' aspirations and make programs more appealing. LPC introduces short-term certificate offerings and stackable credentials to students and provides clear information on class schedules and transfer options.

Looking Forward

Expand work-based learning to enrich all students. Through analysis of 2024 interviews and surveys, previous CLPCCD CLNAs, and regional workforce reports, one strategy emerges as particularly impactful: work-based learning, which includes internships and apprenticeships. Deep investment in this area at both the district and college levels could prove transformative for students. By prioritizing and enhancing work-based learning opportunities, CLPCCD stands to bolster core Indicators and multiple elements crucial to student success. Research indicates that work-based learning is among the most effective practices for students, irrespective of their chosen program of study.¹⁰ This priority is echoed in CWDB Strategic Plan 2024-2027 and the BACCC Regional Plan. Paid WBL is critical for equitable experiences, especially for low- and moderate-income learners. The colleges can leverage Learning Aligned Employment Program (LAEP) funding through California Student Aid Commission¹¹ to

¹⁰ Torpey-Saboe, N., Leigh, E. W., & Clayton, D. (2022). The power of work-based learning. *Strada Education Network*.

¹¹ <https://www.csac.ca.gov/learning-aligned-employment-program>

support these endeavors for Pell recipients. The LAEP program faces challenges with scaling implementation and attention will need to be focused on scaling.

Deepen industry partnerships to support relevant learning. To expand work-based learning opportunities on a larger scale, CLPCCD must foster deeper collaboration with industry partners, and partnerships must be mutually beneficial. The importance of this strategy was echoed with students, faculty, workforce partners and local and regional reports, including CLPCCD's prior CLNA, LPC's Economic and Workforce Strategic Plan, in CLNA surveys and in CLNA interviews. An immediate step is to align career pathways more closely with industry demands by identifying regional workforce needs. This entails CLPCCD working closely with employers and industry stakeholders to review labor market data and solicit input to pinpoint occupations requiring specialized training. Armed with a comprehensive understanding of industry requirements, CLPCCD can effectively tailor career pathway content, curriculum, structure, and credentials to ensure students acquire the essential skills and knowledge demanded by employers. This approach facilitates the development of in-demand competencies, offers students multiple entry and exit points, and enables them to pursue sought-after job opportunities across various levels. Establishing and nurturing robust, ongoing, and meaningful partnerships with employers stands out as one of the most effective strategies for CLPCCD to ensure the appropriate size, scope, and quality of their pathway programs to evolving industry needs.

Leverage Institutional Learning Outcomes (ILOs) to create collegewide career coherency. According to Chabot College's 2021 PAR, there are five learning outcomes¹² that are central to the college's mission and Guided Pathway framework. These learning outcomes can be an important glue between courses, programs, and meta-majors and creates a context for career education across the college, again. A promising practice at Chaffey College is the adopted ILOs that have been aligned ACES (Academic, Community and Employability Skills) across their career academies, which allows students to communicate their skills to employers, and for the college to have a broad understanding of the competencies of their students¹³.

¹² Chabot College ILOs: Critical Thinking, Communication, Civic & Global Engagement, Information & Technological Literacy and Development of the Whole Person

¹³ <https://www.chaffey.edu/outcomes/aces-outcomes.php>

VIII. Element #3: Progress towards Implementation of CTE Programs of Study

CLPCCD's performance has been commendable, exceeding the negotiated performance level for core Indicator 1 across all programs, as delineated by their two-digit TOP codes (Table 5). Progress has been evident in core Indicator 2 performance over fiscal years, with three programs that previously lagged below the 90% threshold now meeting it. However, there has been a setback in one program that fell below the 90% mark, though it remains closely aligned with the goal. Meanwhile, Core Indicator 3 poses ongoing challenges, with four programs consistently below the negotiated performance level. Performance levels have improved for three of these four programs, underscoring a proactive approach in addressing shortcomings. There are several bright spots and additional strategies foundational that could enhance Core Indicators outcomes.

What's working

- **Program Development and Expansion.** Efforts are underway to broaden program offerings in the Music program at LPC to develop a Piano Technology program launching fall of 2024, which is one of the few programs of its kind on the West Coast. Supported by a Perkins grant, this initiative reflects a commitment to comprehensive and inclusive education opportunities.
- **Alignment with Industry Standards.** Chabot College's Advanced Manufacturing program aims to align its programs with industry standards and requirements, despite challenges such as budget constraints. Efforts are made to integrate emerging technologies like cobot welding into the curriculum, emphasizing the importance of industry relevance in program development.

Moving Forward

Deploy evidence-informed strategies for Industry Advisory Committees. The Colleges might consider supporting faculty leads to utilize Evidence-Informed Strategies to standardize and coordinate the industry advisory committees. Best practice approaches include Business and Industry Leadership (BILT)¹⁴ model developed by the National Science Foundation, or Developing a Curriculum (DACUM) Occupational Analysis¹⁵ utilizing storyboards and focus groups to capture industry tasks, skills and knowledge required for an occupation.

¹⁴ <https://atecentral.net/downloads/4915/AdvisoryBoardCaseStudy.pdf>

¹⁵ <https://wids.org/Resources/Resource-Library/dacum-analysis>

Leverage program review process to align with labor market needs. The Program and Area Review (PAR) is an opportunity to align industry needs, use institutional and regional data, and operationalize continuous improvement. A PAR process ensures resources are invested in this process to ensure effective planning is occurring systematically and that budget requests align with improved student outcomes, including annual updates that are meaningful to direct programs and inform investments. Evidence based practices and effective resource mapping should be operationalized, including a framework created by CLASP¹⁶.

¹⁶ <https://www.clasp.org/alliance-quality-career-pathways/>

IX. Element #4: Improving recruitment, retention, and training of CTE professionals, including underrepresented groups

Recruiting highly qualified, diverse professionals to teach career education courses, especially in high-demand industries, presents formidable challenges. Competition from industry can be intense, as skilled professionals are often enticed by higher salaries and greater advancement opportunities outside of academia. Additionally the minimum qualifications required for teaching career education at a community college requires educational credentials and work experience, and desired candidates do not always hold the combination of mandatory qualifications, leading to a shortage of qualified candidates, especially in high demand fields. The fast-paced nature of high-demand industries can make it difficult for professionals to commit to the demands of a teaching position, including ongoing professional development and curriculum planning. These challenges require innovative recruitment strategies, tailored professional development opportunities, competitive compensation, and collaborative partnerships between community colleges and industry stakeholders. Even more critically, Chabot and Las Positas Colleges serve diverse learners and need to intentionally recruit to reflect the student demographics. There is evidence to support that when students have instructors who reflect their identities, they are more likely to to persist and complete¹⁷.

As seen in Table 14, CLPCCD has a higher percentage of male academic staff than female, which is notable considering how many programs have females considered non-traditional students (according to Perkins V definition of special populations¹⁸).

Table 14. Gender of CLPCCD Faculty, Temporary & Tenured

Gender	Academic Staff	CLPCCD Students	Alameda County
Female	49.1%	52.1%	50.3%
Male	50.9%	47.9%	49.7%
Total	100.0%	100.0%	100.0%

Source: CCCC MIS, American Community Survey 2022 1 Year Estimates

Significantly more (53.8%) of our academic staff identify as Non-Hispanic white people compared with the CLPCCD students (21.2%) and Alameda County (27.9%).

¹⁷ Dalporto, H., & Tessler, B. (2020). Voices from the Field: How Community Colleges Are Advancing Equity in Career and Technical Education. *MDRC*.

¹⁸ The Perkins V law defines special populations as individuals with disabilities; individuals from economically disadvantaged families, including low-income youth and adults; individuals preparing for nontraditional fields; single parents, including single pregnant women; out-of-workforce individuals; English learners; homeless individuals; youth who are in, or who have aged out of, the foster care system; and youth with a parent who is on active duty in the military.

Demographics of our student population and the county could be better reflected among our academic staff (see Table 15).

Table 15. Race/Ethnicity of CLPCCD Faculty, Temporary & Tenured

Race/Ethnicity	Academic Staff	CLPCCD Students	Alameda County*
African-American	6.4%	7.0%	9.6%
American Indian/Alaskan Native	0.2%	0.2%	0.2%
Asian	15.9%	25.4%	33.2%
Hispanic	15.6%	36.0%	22.2%
Multi-Ethnicity	1.9%	6.9%	5.7%
Pacific Islander	0.1%	1.1%	0.6%
Unknown	6.2%	2.2%	0.7%
White Non-Hispanic	53.8%	21.2%	27.9%
Total	100.0%	100.0%	100.1%

Source: CCCC MIS, American Community Survey 2022 1 Year Estimates

*Numbers do not add due to rounding.

By analyzing the CLNA interview and survey data and the demographic data in Table 15, there are several opportunities that could support improved recruitment, retention, and training of CTE professionals:

Direct recruitment efforts to market the benefits of working in higher education.

According to the 2024 CLNA survey, 39% of faculty chose the need to increase faculty salary and benefits as the number one strategy to both recruit and retain high quality instructors. This approach may be particularly useful to retain diverse adjunct faculty to teach evening or weekend courses, which surfaced in multiple interviews. CLPCCD serves a high cost of living area and competition with industry is a long standing issue. The district can consider intentional recruitment of seasoned professionals with experience and explore ways that the benefits of working in higher education can attract and retain talent. Recently, a pay differential was put in place for much in-demand Nursing faculty to accelerate placement on the salary scale - this strategy, reached in agreement with the faculty union, is in early stages and will be evaluated.

Offer professional opportunities tailored to CTE fields. 11% of respondents to the 2024 CLNA survey (the second highest option) said providing professional opportunities tailored to CTE fields would help retain, recruit and increase the knowledge of faculty. Which again, would be another benefit of strengthening industry relationships. These structured opportunities, including externships, should be guided by institutional and programmatic goals that are included in program reviews, and connected with tangible instructional and student learning outcomes. Faculty have an important role in

supporting career exploration, particularly in introductory classes. Consider providing additional resources such as lunch and learn sessions and industry-specific discussions to improve faculty understanding of student populations, industry needs and opportunities and ways to enhance student enrollment in CE programs.

X. Element #5: Progress towards equal access to CTE programs for all students

Of those students currently served in CLPCCD career education programs, there are several special populations of note:

- Youth in foster care (increase in Core Indicator 2 of over 25% from FY 21-22 to FY 22-23)
- Individuals with disabilities (decrease in Core Indicators 3 & 4 in FY 22-23)
- English Learners (decrease in Core Indicator 4 in FY 22-23)
- Out of work individuals (outcomes lower than negotiated rates for Core Indicator 4 in FY 21-22 and FY 22-23).

What's working

- **Early College access.** Las Positas' Middle College,¹⁹ a partnership between LPC, Tri-Valley Regional Occupational Program, Dublin USD, Livermore Valley JUSD, and Pleasanton USD, incorporates high school, college, and career training in a college environment. Students obtain a rigorous high school education while concurrently earning college credits from LPC in a variety of career areas. Students receive counseling support from their high schools and Middle College staff and LPC support services, which include tutoring in math and writing and health and counseling services, are available to all Middle College students.
- **Addressing demographic imbalances in public safety professions.** Public Safety and Emergency Services is establishing partnerships with industry and hospitals for student placement specifically targeted to provide better training and education opportunities for a diverse workforce and promoting the EMS program in high schools and reaching out to underrepresented groups.
- **High school outreach.** Chabot College is providing career counseling and hosting career fairs to introduce high school students to career education programs and have been successful in promoting awareness and generating interest among potential students. There are concerted efforts to strengthen relationships with high school counselors to reach students earlier, and exploring the potential role of faculty members in promoting CE programs. Las Positas College has also made concerted efforts to outreach to local high schools to ensure they are aware and supported to matriculate to LPC.

¹⁹ <https://www.laspositascollege.edu/middle-college/>

Moving Forward

Grow an environment of continuous improvement to learn what works. Youth in foster care have experienced an impressive increase in Core Indicator 2 from 64.71% in FY 21-22 to 90.91% in FY 22-23. Develop a culture of inquiry to understand what works for groups like foster youth as well as other disproportionately-impacted students similar to the 2022-2025 CC Equity Plan's²⁰ identification of programs that are showing progress in serving impacted students. Across program planning, and shared governance committees, develop focused spaces to inquire what works for different groups to improve their outcomes.

Design innovative and flexible programs. Out of work individuals, as with all students, come to college programs with both barriers and assets. Career education needs to be flexible and innovative and tailor to students offering credit for prior learning (CPL), contextual learning and career-focused bridge programs²¹. Building learn and earn models is an evidence based approach for those who need to work immediately while developing their skills.

Build equity-driven dual enrollment programs that start K12 students on a career pathway. Building on Las Positas College and Chabot College's robust partnership with the K12 and Eden and Tri-Valley ROPs, the District should consider a coherent dual enrollment strategy shared across multiple pathways aligned with industry needs. Recognizing the importance of early engagement in relevant topics, both colleges can further their commitment to aligning pathways with the region's priority sectors, such as healthcare, advanced manufacturing, and engineering. To this end, CLPCCD is partnering on initiatives that support equity-driven dual enrollment programs. These are being expanded to enable high school students to earn college credits, aligning with Vision 2030's ambitious goal of graduating high school with 12 units of college credit²² and the K16 Regional Collaborative.

²⁰<https://www.chabotcollege.edu/student-services/student-equity/docs/integrated-plan/2022-25%20sea%20equity%20plan%20executive%20summary.pdf>

²¹<https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/jdt.pdf>

²²<https://www.cccco.edu/About-Us/Vision-2030>

XI. Element #6: Alignment to Labor Market Information (LMI)

Regional Demand

In a recent study from the College Futures Foundation, the return on investment for degrees at LPC and Chabot College are some of the best in California; the study cited that it takes 0.3 years for LPC learners to recoup their investment once employed and for Chabot College 0.6 years. With this kind of opportunity it is critically important that the Colleges are well aligned to regional demand, and provide students with the best pathway to living wage careers²³.

A review of the Colleges, the District, and regional reports on economic development and employment trends reflect a general consensus on eight high demand industries: 1) Healthcare, 2) Professional, Scientific, and Technical Services, 3) Construction, 4) Manufacturing/Advanced Manufacturing, 5) Leisure and Hospitality, 6) Public Safety, 7) ICT – Digital Media, and 8) Education, particularly Early Childhood Education. The East Bay Economic Development Agency highlighted a ninth, Business Services²⁴.

The Health Care & Social Assistance sector is the largest industry in Alameda County, with strong growth projected between 2022 and 2027, see Table 16. Government follows, growing modestly between 2022-2027. Alameda County has a strong and diverse private sector with Manufacturing and Professional, Scientific, & Technical Services supporting over 90,000 jobs each and having above average employment compared to the U.S. employment. Transportation & Warehousing is expected to have strong employment growth between 2022-2027.

Table 16. Industry Employment Projections for Alameda County, 2022-2027

NAICS Title	2022 Jobs	2027 Jobs	2022 - 2027 Change	2022 - 2027 % Change	2022 LQ
Health Care & Social Assistance	120,739	136,916	16,177	13.4%	1.1
Government	115,188	119,964	4,777	4.1%	0.9

²³ <https://collegefutures.org/insights/golden-opportunities-measuring-return-on-investment-in-california-higher-education-for-low-and-moderate-income-learners/>

²⁴ East Bay Regional Planning Unit, Regional Plan 2021-24; Alameda County Workforce Development Board 2023 Modified Local Plan; East Bay Forward (East Bay EDA); California Workforce Development Plan, Economic Analysis 2024-2027; CLP District-wide Strategic Plan 2021-26; BACCC Regional Plan 2022-24; UC Berkeley, Bay Area Jobs First Collaborative Regional Plan; Innovation Tri-Valley 2040 Vision Plan; Chabot College EMP 2021-26; Las Positas College EMP 2021-26; Las Positas College and Economic and Workforce Strategic Plan: 2021-26 Road to Economic and Workforce Success; Center of Excellence Priority Industry Profiles: Information & Communications Technology (ICT)/Digital Media, Health, Advanced Manufacturing, Advanced Transportation, Education, Public Safety

Manufacturing	99,208	111,038	11,830	11.9%	1.5
Professional, Scientific, & Technical Services	90,474	96,844	6,370	7.0%	1.4
Retail Trade	66,955	66,686	(268)	-0.4%	0.8
Accommodation & Food Services	59,987	65,076	5,089	8.5%	0.8
Construction	55,676	58,303	2,627	4.7%	1.1
Administrative & Support & Waste Management & Remediation Services	44,838	45,197	360	0.8%	0.8
Other Services (except Public Administration)	44,807	46,913	2,106	4.7%	1.0
Transportation & Warehousing	42,458	47,609	5,151	12.1%	1.1
Wholesale Trade	33,369	30,752	(2,617)	-7.8%	1.0
Educational Services	20,434	20,356	(78)	-0.4%	0.9
Information	19,574	19,498	(76)	-0.4%	1.2
Finance & Insurance	18,699	18,149	(550)	-2.9%	0.5
Management of Companies & Enterprises	17,238	18,567	1,329	7.7%	1.3
Arts, Entertainment, & Recreation	13,695	14,483	788	5.8%	0.9
Real Estate & Rental & Leasing	13,544	13,964	420	3.1%	0.9
Utilities	1,674	1,800	126	7.5%	0.6
Agriculture, Forestry, Fishing & Hunting	1,033	1,254	220	21.3%	0.1
Mining, Quarrying, & Oil & Gas Extraction	127	172	45	35.4%	0.0
Unclassified Industry	31	1	(31)	-98.3%	0.0

Source: Lightcast Quarter 4 2023 Employment Projections

Between 2022-2027 Alameda County will add an additional 53,800 jobs, with 67% of new jobs coming from the top five industry sub-sectors shown in Table 17. Social assistance and ambulatory health care services, both within the healthcare and social assistance industry sector, are projected to add the most jobs between 2022 and 2027 followed by transportation equipment manufacturing. Table 17 also shows the location quotient for largest growing industry subsectors in Alameda county. Location quotient (LQ) shows the proportion of employment each industry subsector in the county holds in comparison to the proportion of employment that industry subsector holds nationally. For example, Local Government has an LQ of 1.0 meaning that its share of the county's employment is proportionally equal to the nation's total employment in that industry subsector. On the other hand, the Computer & Electronic Product Manufacturing industry subsector has 3.5 times more jobs when compared to the proportion of jobs that industry subsector has nationally. Data on LQ is useful for understanding which

programs the college should offer to meet the specific needs of the local economy or how courses and curriculum should be adjusted to prepare students for the employers in the local economy.

Table 17. Top Industry Subsectors in Alameda County by 2022-2027 Job Growth

NAICS Title	2022 Jobs	2027 Jobs	2022 - 2027 Change	2022 - 2027 % Change	2022 LQ
Social Assistance	44,577	53,471	8,893	20%	1.8
Ambulatory Health Care Services	49,090	57,195	8,105	17%	1.1
Transportation Equipment Manufacturing	26,496	34,374	7,878	30%	2.9
Professional, Scientific, & Technical Services	90,474	96,844	6,370	7%	1.4
Food Services & Drinking Places	55,129	59,961	4,833	9%	0.9
Local Government	72,228	76,474	4,247	6%	1.0
Couriers & Messengers	11,289	13,736	2,447	22%	1.7
Warehousing & Storage	10,630	13,001	2,371	22%	1.1
Computer & Electronic Product Manufacturing	20,233	22,283	2,050	10%	3.5
Specialty Trade Contractors	38,382	40,132	1,750	5%	1.2
Management of Companies & Enterprises	17,238	18,567	1,329	8%	1.3
Personal & Laundry Services	11,235	12,546	1,311	12%	0.9
Religious, Grantmaking, Civic, Professional, & Similar Organizations	12,987	14,118	1,131	9%	0.9
Machinery Manufacturing	9,290	10,420	1,130	12%	1.6
Data Processing, Hosting, & Related Services	6,640	7,671	1,032	16%	2.7
State Government	30,654	31,590	936	3%	1.1
Construction of Buildings	13,085	13,943	858	7%	1.1
Motor Vehicle & Parts Dealers	8,714	9,499	785	9%	0.8
Nursing & Residential Care Facilities	12,639	13,311	672	5%	0.8
Amusement, Gambling, & Recreation Industries	7,099	7,717	619	9%	0.8

Source: Lightcast Quarter 4 2023 Employment Projections

The four East Bay Local Workforce Development Boards Regional Planning Unit (EBRPU) cited the fastest growing and middle skills occupations that produce an

average medium wage that meet the CLNA high wage definition. They include: Diagnostic Medical Sonographer (Healthcare), Surgical Technologists (Healthcare), Respiratory Therapists (Healthcare), Magnetic Resonance Imaging Technologists (Healthcare), Bookkeeping, Accounting, and Auditing Clerks (Business Services), Automotive Service Technicians and Mechanics, Computer User Support Specialists (ICT), Licensed Practical and Licensed Vocational Nurses (Healthcare), Paralegals and Legal Assistants (Business Services and Public Safety), Telecommunications Equipment Installers and Repairers, Except Line Installers, Electrical and Electronics Engineering Technicians (ICT-Digital Media, Manufacturing and Construction), Heating, Air Conditioning, and Refrigeration Mechanics and Installers (Construction), Web Developers (ICT-Digital Media) and Computer Network Support Specialists (ICT-Digital Media).

According to region employment projections, seven of the top 10 occupational groups that are expected to have the greatest average annual job openings during the five-year period are also occupations included in the high-demand industries listed in Table 17 above. These occupations are: Office and Administrative Support, Management, Business & Financial Operations, Healthcare Support, Production, Educational Instruction & Library, and Healthcare Practitioners & Technical.

Table 18. Occupation Employment Projections for Alameda County, 2022-2027

SOC Title	2022 Jobs	2027 Jobs	2022 - 2027 Change	2022 - 2027 % Change	Avg. Annual Openings
Office & Administrative Support	83,926	84,386	460	1%	9,775
Management	78,428	82,884	4,456	6%	6,830
Transportation & Material Moving	71,626	76,257	4,631	6%	10,119
Sales & Related	64,222	63,389	(834)	-1%	8,356
Business & Financial Operations	61,636	64,514	2,878	5%	5,628
Food Preparation & Serving	57,459	62,272	4,813	8%	12,160
Healthcare Support	54,520	64,429	9,909	18%	10,520
Production	53,811	60,119	6,308	12%	7,476
Educational Instruction & Library	50,763	52,960	2,197	4%	5,375
Healthcare Practitioners & Technical	44,975	48,795	3,820	8%	3,348
Construction & Extraction	41,664	43,801	2,137	5%	4,087
Computer & Mathematical	38,442	41,112	2,671	7%	2,847
Building & Grounds Cleaning & Maintenance	26,141	26,765	624	2%	3,763

Installation, Maintenance, & Repair	26,062	27,453	1,392	5%	2,689
Personal Care & Service	22,742	24,242	1,500	7%	4,437
Architecture & Engineering	22,543	24,809	2,267	10%	1,953
Arts, Design, Entertainment, Sports, & Media	19,305	19,534	229	1%	1,998
Community & Social Service	16,799	18,430	1,631	10%	1,806
Protective Service	16,669	17,447	778	5%	2,258
Life, Physical, & Social Science	16,520	18,003	1,483	9%	1,652
Legal	8,173	8,456	283	3%	524
Military-only	2,034	2,078	44	2%	232
Farming, Fishing, & Forestry	1,292	1,411	119	9%	222

Source: Lightcast Quarter 4 2023 Employment Projections

Alignment and opportunities

Many of these occupations are clustered within the nine industry sectors identified above, and may suggest further focus on industry engagement, certificate and credential attainment, and pathway development strategies. Several interviewees expressed a need to identify which courses can be provided online in order to make programs more accessible to incumbent workers and non-traditional populations.

Table 19 demonstrates the alignment of CLPCCD’s CTE programming to in-demand sectors in Alameda County. While CLPCCD is not the only institution in the county providing CTE education, the results in Table 19 show that the district is an important contributor to the demand for skilled workers and the programs CLPCCD offers align with the county’s employment needs.

Table 19. Demand and Supply for CLPCCD Programs by Two Digit TOP Code

TOP Title	Average Annual Openings 2022-2032	Chabot CTE Awards 22-23	Las Positas CTE Awards 22-23	CLPCCD CTE Awards 22-23	Employment Gap
Health	11,356	87	16	103	11,253
Business & Management	9,228	344	205	549	8,679
Engineering & Industrial Technologies	4,366	80	43	123	4,243
Family & Consumer Sciences	2,849	124	50	174	2,675
Information Technology	2,260	33	20	53	2,207
Education	1,642	0	2	2	1,640

Public & Protective Services	971	64	84	148	823
Fine & Applied Arts	509	7	16	23	486
Media & Communications	519	48	11	59	460
Agriculture & Natural Resources	168	0	4	4	164
Architecture & Related Technologies	75	10	0	10	65

Source: Lightcast Quarter 4 2023 Employment Projections, CCCC MIS, WestEd Analysis

In addition to analyzing CLPCCD’s existing CTE programs, a selection of occupations have been identified for consideration of new program development. Many of the occupations identified support Healthcare & Social Assistance, a high-priority industry sector in the region. The development of additional healthcare related programming could aid CLPCCD’s efforts in providing equitable access to CTE, as the majority of incumbent workers in these occupations are female. Healthcare programs offered by Chabot College hold potential for additional growth. Additionally, environmental sustainability is another economic focus both regionally and statewide, and CLPCCD could support these efforts through additional programs aligned to these efforts. For example, heating, air conditioning, & refrigeration mechanics & installers; environmental science & protection technicians, including health; and water & wastewater treatment plant & system operators are high-wage opportunities tied to environmental sustainability and could be opportunities for further growth.

Table 20. Select Occupations for Consideration of New Program Development

Occupation	2022 Jobs	2032 Jobs	2022 - 2032 Change	2022 - 2032 % Change	Average Annual Openings	Median Hourly Earnings
Dental Assistants	2,001	2,373	372	19%	339	\$28.94
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	2,214	2,482	268	12%	223	\$35.04
Transportation, Storage, and Distribution Managers	1,770	1,932	163	9%	162	\$52.56
Health Technologists and Technicians, All Other	1,486	1,817	331	22%	143	\$30.49
Construction and Building Inspectors	899	947	47	5%	109	\$47.95
Mobile Heavy Equipment Mechanics, Except Engines	847	896	49	6%	77	\$36.70
Medical Records Specialists	864	1,003	139	16%	76	\$29.11

Veterinary Technologists and Technicians	515	691	176	34%	72	\$26.52
Physical Therapist Assistants	337	478	141	42%	69	\$40.83
Radiologic Technologists and Technicians	825	989	164	20%	64	\$59.26
Phlebotomists	408	461	54	13%	61	\$24.26
Surgical Technologists	603	682	79	13%	46	\$39.57
Environmental Science and Protection Technicians, Including Health	321	342	22	7%	36	\$36.62
Water and Wastewater Treatment Plant and System Operators	338	357	19	6%	34	\$46.40
Respiratory Therapists	577	599	22	4%	31	\$58.88
Ophthalmic Medical Technicians	193	242	49	25%	28	\$25.80
Medical Equipment Repairers	250	272	21	8%	26	\$31.50
Diagnostic Medical Sonographers	312	370	58	19%	23	\$64.80
Psychiatric Technicians	166	226	61	37%	22	\$26.80
Health Information Technologists and Medical Registrars	128	161	34	26%	12	\$45.10
Cardiovascular Technologists and Technicians	171	179	8	5%	12	\$39.15
Magnetic Resonance Imaging Technologists	99	120	21	21%	8	\$57.81

Source: Lightcast Quarter 4 2023 Employment Projections

Projections for High-Priority Sectors

The Bay Area Community College Consortium (BACCC) identified five high-priority sectors in the BACCC Regional Plan 2022-2024. The following analysis outlines the strengths, opportunities, and challenges for CLPCCD as it relates to their CTE programs. The five high-priority sectors are as follows:

- Advanced Manufacturing
- Advanced Transportation and Logistics
- Health
- Information and Communication Technologies - Digital Media
- Public Safety

The projected growth in manufacturing is within advanced manufacturing related to transportation equipment, computer and electronic product manufacturing, electrical equipment, appliance and component manufacturing with slowdowns or declines in more traditional processing manufacturing subsectors. The decline in traditional processing manufacturing subsectors represents an opportunity for CLPCCD to upskill or reskill out of work individuals to in-demand and high-wage roles. This data should also be used to proactively engage with employers or individuals in industries that are declining.

Table 21. Manufacturing Industry Subsectors in Alameda County

NAICS Title	2022 Jobs	2027 Jobs	2022 - 2027 Change	2022 - 2027 % Change	2022 LQ
Transportation Equipment Manufacturing	26,496	34,374	7,878	30%	2.9
Computer and Electronic Product Manufacturing	20,233	22,283	2,050	10%	3.5
Food Manufacturing	9,353	9,684	331	4%	1.0
Machinery Manufacturing	9,290	10,420	1,130	12%	1.6
Miscellaneous Manufacturing	7,227	7,693	467	6%	2.0
Fabricated Metal Product Manufacturing	6,309	6,612	303	5%	0.8
Chemical Manufacturing	3,959	3,727	(232)	-6%	0.8
Beverage and Tobacco Product Manufacturing	2,859	3,025	166	6%	1.7
Electrical Equipment, Appliance, and Component Manufacturing	2,705	3,131	426	16%	1.3
Plastics and Rubber Products Manufacturing	2,130	2,033	(97)	-5%	0.5
Nonmetallic Mineral Product Manufacturing	1,726	1,723	(4)	0%	0.8
Printing and Related Support Activities	1,554	1,223	(330)	-21%	0.7
Furniture and Related Product Manufacturing	1,292	1,254	(38)	-3%	0.6
Wood Product Manufacturing	1,062	1,172	110	10%	0.4
Paper Manufacturing	946	685	(261)	-28%	0.5
Primary Metal Manufacturing	866	773	(92)	-11%	0.5

Leather and Allied Product Manufacturing	429	564	135	31%	2.6
Apparel Manufacturing	360	262	(98)	-27%	0.6
Textile Product Mills	228	220	(8)	-3%	0.4
Petroleum and Coal Products Manufacturing	144	144	0	0%	0.3
Textile Mills	41	35	(5)	-13%	0.1

Source: Lightcast Quarter 4 2023 Employment Projections

Transportation and Warehousing is expected to grow by 12% and add 5,151 jobs between 2022 and 2027. Much of the growth is concentrated in two industry subsectors, Couriers & Messengers and Warehousing & Storage as shown in Table 22. There are opportunities for new program development in this sector, particularly for Heavy and Tractor-Trailer Truck Drivers. Although, the most impactful programming for likely lies in equipping individuals with the skills to manage or supervise teams and developing/maintaining curriculum to support warehouse automation. Existing programs at CLPCCD within Business & Management, Engineering & Industrial Technologies, and Information Technology equip students with the skills needed for the variety of roles that exist within the sector.

Table 22. Transportation & Warehousing Subsectors in Alameda County

NAICS Title	2022 Jobs	2032 Jobs	2022 - 2032 Change	2022 - 2032 % Change	2022 Employment Concentration
Couriers and Messengers	11,289	13,736	2,447	22%	1.75
Warehousing and Storage	10,630	13,001	2,371	22%	1.06
Truck Transportation	7,842	7,524	(318)	(4%)	0.81
Support Activities for Transportation	5,168	5,771	602	12%	1.16
Transit and Ground Passenger Transportation	3,277	3,366	89	3%	1.03
Air Transportation	3,115	3,045	(70)	(2%)	1.16
Water Transportation	727	819	92	13%	2.13
Rail Transportation	240	191	(49)	(20%)	0.21

Scenic and Sightseeing Transportation	98	94	(4)	(4%)	0.55
Postal Service	72	63	(10)	(13%)	0.91
Pipeline Transportation	0	0	0	0%	0.00

Source: Lightcast Quarter 4 2023 Employment Projections

CLPCCD has the greatest opportunity to improve its CTE programming within the Health sector. While CLPCCD supports the Health sector through various programs including Registered Nursing, Medical Assisting, Athletic Training and Sports Medicine, Emergency Medical Services, Paramedic, and Dental Hygienist there is a particular need to develop additional programs leading to health technologist roles. Significant barriers typically exist related to adding these programs including a shortage of appropriate facilities, namely lab space. Given Health is a high-priority sector for the region and these programs lead to high-wage roles it should be a priority for CLPCCD in the medium-term.

Table 23. Health Care & Social Assistance Industry Subsectors in Alameda County

NAICS Title	2022 Jobs	2027 Jobs	2022 - 2027 Change	2022 - 2027 % Change	2022 Employment Concentration
Ambulatory Health Care Services	49,090	57,195	8,105	17%	1.09
Social Assistance	44,577	53,471	8,893	20%	1.83
Hospitals	14,434	12,940	(1,494)	(10%)	0.54
Nursing and Residential Care Facilities	12,639	13,311	672	5%	0.80

Source: Lightcast Quarter 4 2023 Employment Projections

The Information Communication Technology (ICT) - Digital Media sector is expected to grow by 6% and add 2,841 jobs between 2022 and 2027. Nearly half of those jobs will be added for only one occupation - software developers. CLPCCD has extensive CTE programming preparing students for employment in the sector through the following programs: Computer Software Development, Computer Programming; Computer Information Systems; Information Technology, General; Computer Networking; Computer Support; Software Applications; Computer Graphics and Digital Imagery; Digital Media; Radio and Television, Film Production; and Animation. CLPCCD has developed curriculum responsive to the shifting needs of the sector including cyber

security degrees and certificates. As the sector continues to shift it is important to continue the development of curriculum and programs that meet industry needs including artificial intelligence, machine learning, and natural language processing. Professional development and training opportunities for faculty are an important component of being responsive to the sector.

Table 24. ICT - Digital Media Industry Subsectors in Alameda County

SOC Title	2022 Jobs	2027 Jobs	2022 - 2027 Change	2022 - 2027 % Change	Median Hourly Earnings
Software Developers	13,991	15,285	1,294	9%	\$71.48
Computer and Information Systems Managers	5,988	6,296	308	5%	\$91.74
Computer Occupations, All Other	4,543	4,644	101	2%	\$58.61
Computer Systems Analysts	3,275	3,410	135	4%	\$59.07
Computer User Support Specialists	2,850	2,984	134	5%	\$33.52
Data Scientists	2,061	2,352	290	14%	\$59.45
Graphic Designers	1,890	1,894	4	0%	\$34.13
Software Quality Assurance Analysts and Testers	1,735	1,826	91	5%	\$56.54
Network and Computer Systems Administrators	1,692	1,757	65	4%	\$54.24
Web and Digital Interface Designers	1,577	1,667	89	6%	\$38.56
Computer Programmers	1,152	1,107	(44)	(4%)	\$52.32
Computer Network Architects	1,059	1,067	7	1%	\$68.17
Photographers	1,056	1,160	103	10%	\$26.77
Information Security Analysts	915	1,069	153	17%	\$57.51
Art Directors	794	788	(6)	(1%)	\$53.05
Producers and Directors	784	751	(33)	(4%)	\$48.64
Computer Network Support Specialists	732	769	37	5%	\$38.74
Special Effects Artists and Animators	690	691	1	0%	\$54.32
Web Developers	635	692	58	9%	\$43.03
Editors	564	504	(60)	(11%)	\$39.43
Fine Artists, Including Painters, Sculptors, and Illustrators	560	614	54	10%	\$14.38
Computer and Information Research Scientists	559	623	65	12%	\$92.73

Data Entry Keyers	504	489	(15)	(3%)	\$20.09
Media and Communication Workers, All Other	376	365	(11)	(3%)	\$62.71
Database Architects	295	310	15	5%	\$73.02
Film and Video Editors	292	294	2	1%	\$40.10
Sound Engineering Technicians	243	248	6	2%	\$29.81
Audio and Video Technicians	238	243	6	2%	\$28.40
Broadcast Announcers and Radio Disc Jockeys	117	106	(11)	(9%)	\$61.91
Media and Communication Equipment Workers, All Other	115	116	1	1%	\$26.88
Camera Operators, Television, Video, and Film	100	98	(2)	(2%)	\$29.56
Photographic Process Workers and Processing Machine Operators	92	93	1	1%	\$18.10
Lighting Technicians	45	47	2	4%	\$27.82

Source: Lightcast Quarter 4 2023 Employment Projections

Public Safety is expected to grow by 5% and add 1,393 jobs between 2022 and 2027. CLPCCD has a number of CTE programs that support the Public Safety sector, including Administration of Justice, Fire Academy, Fire Technology, Emergency Medical Services, Paramedic, Human Service, and Paralegal. The breadth of CLPCCD's Public Safety sector aligned programs provides students with numerous educational opportunities leading to in-demand careers while supporting employers and local governments with a high-skilled workforce.

Table 25. Public Safety Occupational Projections, 2022-2032

SOC Title	2022 Jobs	2027 Jobs	2022 - 2027 Change	2022 - 2027 % Change	Median Hourly Earnings
Security Guards	6,893	7,140	246	4%	\$17.48
Lawyers	5,371	5,577	206	4%	\$85.91
Police and Sheriff's Patrol Officers	3,525	3,707	182	5%	\$59.27
Compliance Officers	2,242	2,354	111	5%	\$40.96
Paralegals and Legal Assistants	1,381	1,430	49	4%	\$34.13
Firefighters	1,271	1,351	80	6%	\$47.06
Emergency Medical Technicians	1,185	1,275	90	8%	\$18.66
Court, Municipal, and License Clerks	834	880	46	6%	\$30.09

Legal Support Workers, All Other	711	719	8	1%	\$23.76
Mental Health and Substance Abuse Social Workers	704	800	96	14%	\$39.54
Legal Secretaries and Administrative Assistants	684	628	(57)	(8%)	\$33.20
Correctional Officers and Jailers	634	669	35	6%	\$42.87
Transportation Security Screeners	496	494	(2)	(0%)	\$26.08
Crossing Guards and Flaggers	413	443	30	7%	\$25.50
Public Safety Telecommunicators	392	416	24	6%	\$46.01
Probation Officers and Correctional Treatment Specialists	371	396	25	7%	\$57.92
Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	329	365	37	11%	\$16.52
First-Line Supervisors of Firefighting and Prevention Workers	326	346	20	6%	\$61.71
First-Line Supervisors of Police and Detectives	302	327	24	8%	\$80.67
Detectives and Criminal Investigators	275	291	16	6%	\$49.44
Paramedics	256	295	39	15%	\$32.17
Private Detectives and Investigators	193	200	7	3%	\$32.71
Judicial Law Clerks	186	194	8	4%	\$39.88
Parking Enforcement Workers	167	169	2	1%	\$31.72
Judges, Magistrate Judges, and Magistrates	158	167	9	6%	\$104.94
Legislators	139	148	10	7%	\$31.90
Forensic Science Technicians	135	147	12	9%	\$41.93
Air Traffic Controllers	132	133	1	1%	\$78.92
Bailiffs	90	93	3	3%	\$40.54
Arbitrators, Mediators, and Conciliators	74	79	5	7%	\$54.13
First-Line Supervisors of Correctional Officers	72	81	8	11%	\$55.85
First-Line Supervisors of Protective Service Workers, All Other	72	78	6	8%	\$36.60
Animal Control Workers	37	40	4	10%	\$26.96
Emergency Management Directors	33	36	3	9%	\$72.94
Fish and Game Wardens	24	26	1	6%	\$43.95
Forest Fire Inspectors and Prevention Specialists	19	21	2	10%	\$50.62

Transit and Railroad Police	19	19	1	4%	\$59.36
Ambulance Drivers and Attendants, Except Emergency Medical Technicians	16	22	6	37%	\$18.10

Source: Lightcast Quarter 4 2023 Employment Projections

Chabot College

XII. College Profile

Chabot College, Hayward, California

Founded in 1961 in Hayward, California, Chabot College is part of Chabot-Las Positas Community College District serving the cities of Hayward, Castro Valley, San Leandro, San Lorenzo, and Union City in the East Bay of the San Francisco Bay Area. Chabot College is a comprehensive, Hispanic-serving institution that specializes in university transfer preparation, career and technical education, and basic skills preparation. Chabot 's enrollment in 2023 was about 11,200 students, which is more than its pandemic low but not as high as pre-pandemic enrollment. Chabot College offers myriad certificate and degree programs in 8 different career pathway clusters, as well as opportunities for apprenticeships and university transfer.

As an urban college with one of the most ethnically diverse student bodies in the state, Chabot prides itself in being the community college that developed Puente and Umoja, successful learning communities that aim to foster the success of Latino and African American students, respectively. Table 26 shows demographic information for cities served by Chabot College, both at the time of the first CLNA and projections for 2029, along with the college's most recent student population information. Chabot College enrolls a representative percentage of African Americans, but fewer than might be expected of Asian American and White students. At the same time Latinx and Other race/ethnicities are overrepresented in student enrollments when compared to the cities that Chabot serves, whether looked at in terms of the first CLNA or the 2029 projections. Table 26 confirms Chabot is a Hispanic-serving institution and it is ethnically diverse.

Table 26. Chabot College: Cities Served and College Student Demographics

Race/ethnicity	Chabot College Cities Served		Chabot College
	2019	2029 (projected)	Spring 2023
African American	9%	8%	9%
Asian American	33%	36%	24%
White	21%	20%	16%
Latinx	31%	31%	42%

Other	5%	5%	9%
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In Spring 2023, the Chabot student population skewed on the younger side: 44% were 21 or younger. Nearly half had university transfer as their educational goal (48%); 21% named “occupational certificate or job training” as their goal. As such, Chabot’s mission is broad, including “the educational, career, job skill, and personal development needs of our community.” The mission acknowledges equity by providing “culturally responsive learning and support services driven by a goal of equity. Building upon students’ strengths and voices, we empower students to achieve their goals and lead us towards an equitable and sustainable world.” Regarding CTE-specific college goals, the President’s Goals and College Planning Priorities of 2023-2024 include: “Expand our workforce development through increasing the number of CTE, Early Childhood, various apprenticeships, and economic partnerships.”

XIII. Student Performance on Required Performance Indicators

Chabot College has commendable performance across all core Indicators, as well as areas that fall below the negotiated rates in FY 21-22 and FY 22-23. There are areas of opportunity to address needs in order to increase student success both in specific programs and across all programs.

Table 27. Chabot College Performance on Core Indicators by Two-Digit TOP Code

TOP Title	Core 1 Postsecondary Retention & Placement		Core 2 Earned Postsecondary Credential		Core 3 Non- traditional Program Enrollment		Core 4 Employment	
	21-22	22-23	21-22	22-23	21-22	22-23	21-22	22-23
Fiscal Year	21-22	22-23	21-22	22-23	21-22	22-23	21-22	22-23
Architecture & Related Technologies	94.59	96.15	88.89	50.00	50.00	62.96	0.00	71.43
Business & Management	95.82	91.74	75.46	80.74	48.66	46.69	81.96	71.64
Media & Communications	100	93.15	76.67	57.69	43.48	15.38	84.62	53.33
Information Technology	98.1	93.33	55.56	60.00	20.36	14.55	77.78	53.85
Engineering & Industrial Technologies	98.63	98	15.52	14.16	2.60	1.81	94.12	93
Fine & Applied Arts	93.55	94.34	75.00	36.00	32.26	24.07	77.78	82.61
Health	96.88	98.99	92.68	91.53	10.26	14.29	90.77	97.73
Family & Consumer Sciences	92.96	85.93	90.58	87.69	4.27	5.32	72.73	63.50
Public and Protective Services	97.96	97.98	79.78	72.29	41.98	37.21	86.36	91.67
Interdisciplinary Studies	0		0.00				0.00	
Negotiated Level	89.67	74.53	83.3	81.32	26	23.43	73.23	73
90% of Negotiated Level	80.70	67.08	74.97	73.19	23.40	21.09	65.91	65.70

Source: CCCC MIS

Yellow shaded cells are above 90% of the negotiated level but below the negotiated level, red are below 90% of the negotiated level, unshaded cells are meeting or exceeding the negotiated level. Values in italics have less than 10 concentrators.

Core Indicator 1 - Postsecondary Retention & Placement

Chabot College has demonstrated commendable performance in Indicator 1, surpassing 90% of the negotiated performance level across all programs, as defined by their two-digit TOP codes (Table 27). Chabot maintained retention rates well above the 22-23 negotiated level.

Core Indicator 2 - Earned Postsecondary Credentials

Performance levels for core Indicator 2 show only two programs meeting the negotiated levels for both years. Business & Management remained at 90% of the negotiated level for both years. For other programs, whether they improved or declined in performance across the 2 years, none met the negotiated performance level for 22-23: programs with

steep declines include Architecture & Related Technologies, Media & Communications, and Fine & Applied Arts.

Core Indicator 3 - Non Traditional Program Enrollment

For core Indicator 3, four programs remained above the negotiated level across the 2 years, and four remained below 90% of the negotiated level. Nontraditional enrollment in Engineering & Industrial Technologies and Family & Consumer Sciences is an intractable issue that may require national attention, and beginning at lower educational levels. Three programs have shown improvement in this area.

Core Indicator 4 - Employment

Regarding core Indicator 4, four programs remained above the negotiated level and continue to show commendable performance employing completers. Agriculture & Natural Resources improved across the 2 years and met the 90% negotiated performance level in 22-23. However, Media & Communications, Information Technology, and Family & Consumer Sciences declined to below 90% of the 22-23 negotiated performance level.

Las Positas College

XIV. College Profile

Las Positas College (LPC) in Livermore, California, was founded as a satellite campus of Chabot College in 1963 and became an independent college in 1988. LPC serves the Dublin, Livermore, and Pleasanton cities as well as unincorporated areas of eastern Alameda County, California. LPC 's enrollment in 2023 was about 7,600 students, which is more than its pandemic low but not as high as pre-pandemic enrollment. Las Positas is known for its partnerships with area businesses such as technology companies and two national laboratories. These partnerships ensure that the college is preparing residents for careers aligned with workforce needs, both currently and in the future. LPC offers many programs in eight academic and career pathways, as well as opportunities for apprenticeships and university transfer.

Las Positas College has experienced a notable upward trajectory in the conferral of associate degrees, juxtaposed with a recent downturn in certificates awarded. In the academic year 2022-23, a total of 1,351 degrees and certificates were conferred, marking a significant 107% increase from counts in 2013-14. Notably, Las Positas College achieved a historic high in the number of Associate Degrees awarded. However, over the past decade, the number of certificates awarded has exhibited fluctuations, reaching a recent low of 138 certificates in 2022-23. It is worth mentioning that Las Positas College reached its peak in certificate awards during the 2020-21 academic year.²⁵

Table 28 shows demographic information for cities served by LPC, both at the time of the first CLNA and projections for 2029, along with the college's most recent student population information. Las Positas College enrolls fewer Asian American and White students than might be expected, and more African America and Latinx students and students self-identifying as Other race/ethnicities than might be expected given the demographics of the area it serves. This is true whether looked at in terms of the date of the first CLNA or the 2029 projections. Table 28 suggests that LPC has a more ethnically diverse student population than the cities it serves. Of course, students living outside these cities can choose to attend LPC. Las Positas was designated a Hispanic-serving institution in 2015.

²⁵ <https://www.laspositascollege.edu/research/outcomes.php#Tableau-Dash>

Table 28. Las Positas College: Cities Served and College Student Demographics

Race/ethnicity	Las Positas College Cities Served		Las Positas College
	2019	2029 (projected)	Fall 2023
African American	2%	2%	5%
Asian American	29%	32%	26%
White	50%	47%	30%
Latinx	14%	14%	30%
Other	4%	4%	10%

In Fall 2023, 59% of LPC students were 21 or younger. Well over half had university transfer as their educational goal (64%); 12% named “occupational certificate or job training” as their goal. In the LPC mission statement is reference to offering “educational opportunities and support for completion of students’ transfer, degree, and career-technical goals while promoting life-long learning.” More CTE-specific goals include hiring a full-time employer engagement director to engage with industry; investing in strategic, targeted and expansive outreach and marketing; mapping and evaluating certificate and degree programs and Guided Pathways academic and career pathways for labor market relevance and demand; and increasing work-based learning and apprenticeship opportunities for students.

XV. Student Performance on Required Performance Indicators

Las Positas College has commendable performance across all core Indicators, as well as areas that fall below the negotiated rates in FY 21-22 and FY 22-23. There are areas of opportunity to address needs in order to increase student success both in specific programs and across all programs.

Table 29. Las Positas Performance on Core Indicators by Two-Digit TOP Code

TOP Title	Core 1 Postsecondary Retention & Placement		Core 2 Earned Postsecondary Credential		Core 3 Non- traditional Program Enrollment		Core 4 Employment	
	21-22	22-23	21-22	22-23	21-22	22-23	21-22	22-23
Fiscal Year								
Agriculture & Natural Resources	84.62	96.15	44.44	66.67	34.48	41.38	69.23	93.75
Business & Management	98.29	95.41	77.84	84.47	48.21	45.57	85.71	73.44
Media & Communications	100	100.00	60.00	100.00	33.33	0.00	100.00	100.00
Information Technology	92.44	93.94	38.24	41.46	23.26	23.57	64.29	69.70
Education	100	100	66.67	100			100	100
Engineering & Industrial Technologies	95.24	97.83	60.71	45.71	4.50	3.70	89.29	91.67
Fine & Applied Arts	94	94.12	68.18	58.82	58.54	46.34	73.33	72.73
Health	98.72	98.63	75.00	56.52	0.00		96.00	95.65
Family & Consumer Sciences	91.84	88.95	77.27	82.83	2.87	2.55	74.00	68.69
Public and Protective Services	97.85	97.20	69.70	87.30	23.30	22.47	92.98	91.30
Interdisciplinary Studies	92.59	97.83	42.86	20.00			66.67	83.33
Negotiated Level	89.67	74.53	83.3	81.32	26	23.43	73.23	73
90% of Negotiated Level	80.70	67.08	74.97	73.19	23.40	21.09	65.91	65.70

Source: CCCC MIS

Yellow shaded cells are above 90% of the negotiated level but below the negotiated level, red are below 90% of the negotiated level, unshaded cells are meeting or exceeding the negotiated level. Values in italics have less than 10 concentrators.

Core Indicator 1 - Postsecondary Retention & Placement

For core Indicator 1 (Table 29), LPC has demonstrated commendable performance, surpassing the negotiated performance level across all programs, as defined by their two-digit TOP codes (Table 29). LPC maintained retention rates well above the 22-23 negotiated level.

Core Indicator 2 - Earned Postsecondary Credentials

Performance levels for core Indicator 2 show five programs improving their performance substantially and meeting the negotiated levels. Agriculture & Natural Resources showed improvement although it did not meet 90% of the negotiated level.

Other programs held steady or lost ground across the 2 years: programs with notable declines include Engineering & Industrial Technologies, Health, and Interdisciplinary Studies.

Core Indicator 3 - Non Traditional Program Enrollment

For core Indicator 3, notably, Information Technology moved from below 90% of the negotiated level to above the negotiated level, and Public & Protective Services moved from below 90% of the negotiated level to above 90% of the negotiated level (but still below that negotiated level). Improvement in nontraditional enrollment is noteworthy. Three programs remained above the negotiated level across the 2 years, and two remained below 90% of the negotiated level: Nontraditional enrollment in Engineering & Industrial Technologies and Family & Consumer Sciences is an intractable issue that may require national attention, and beginning at lower educational levels.

Core Indicator 4 - Employment

Core Indicator 4 showed robust results across programs. Seven programs remained well above the negotiated level and continue to show commendable performance employing completers. Agriculture & Natural Resources improved across the 2 years and met the 90% negotiated performance level in 22-23. Information Technology improved from a performance below the negotiated level to 90% of the 22-23 negotiated performance level.

Limitations and Opportunities

While the 2024 Comprehensive Local Needs Assessment (CLNA) serves as a vital tool to help discern needs and guide decision-making within CLPCCD and its Colleges, it is important to recognize the inherent limitations. One noteworthy constraint is the condensed time frame allotted for data collection and analysis that may have compromised the depth and breadth of the assessment. Moreover, there are challenges surrounding access to pertinent data sources that pose a significant hurdle, particularly concerning engaging with a diverse array of stakeholders and conducting thorough interviews with career education students. The predetermined scope of required data elements of the CLNA and the need to fulfill specific report objectives, may inadvertently overlook critical factors and nuances intrinsic to both the college and the broader community contexts. These limitations underscore the imperative of adopting a discerning approach towards this report, and work to augment it with supplementary data sources to ensure there is a comprehensive grasp of local needs and challenges.

Despite this report's investigation on a wide-ranging areas of inquiry, there were several critical questions that were beyond the scope of this CLNA and await future research, namely:

- How does Credit for Prior Learning (CPL) align with in-demand industries in our region?
 - How can the District support incumbent workers in our service area?
- How many and which approaches should the District and Colleges use to reach out to adults with high school but no college credentials?
- Apprenticeship is supported by the District, and it is growing. Which sectors provide the best opportunities to develop additional apprenticeships and grow talent?
- Which Applied Baccalaureate programs at the Colleges are good pathways for students to continue to a 4-year degree?
 - What kinds of articulation and student advising activities provide the best opportunities moving forward?
- What opportunities exist within secondary partnerships (e.g., K16 Collaborative partners, local high schools) and dual enrollment to accelerate high school student learning?
 - Are there key courses that could accelerate students towards a degree?

The few additional notes about the administrative and labor market data used in the analyses:

- Core Indicator Data from the CCCCCO covers fiscal years 2021-2022 and 2022-2023 which aligns with cohort years 2018-2019 and 2019-2020, respectively.
- Data for some special populations has only recently been required for collection and long-term trends for these populations are not available.
- Numerous labor market projections are included in the CLNA which could fluctuate significantly in the event of non-linear dynamics including economic contraction, emerging technologies, or employer investment.
- Data collected on the programs within this analysis used standardized program codes and titles which can be subject to errors or may not accurately reflect the skills gained by students or outcomes of students.
- While the CLNA has been completed in a comprehensive manner, individual programming decisions should be made through program reviews or additional research, with additional scope and detail.
- At the time of the study we did not have access to demographic data for only CTE faculty and students, so institution/district wide figures were used.
- Further research is needed for particular program areas that need improvement on core indicators, due to the breadth of this analysis it was not feasible to address/identify data discrepancies or conduct a more detailed analysis.
- California recently adopted the federal law, which is FLSA, Fair Labor Standards Act²⁶ which is an important consideration that could potentially hinder internship growth.

To enhance the depth of this initial report, it is advisable to gather additional data. Following the findings of the 2024 CLNA, further engagement with identified stakeholders, particularly industry partners, as well as current, prospective, and former students, could provide valuable insights into their needs and motivations. By incorporating additional input from industry and students, among others, career education programs can become even more attuned and responsive to the needs of the communities that Chabot Las Positas Community College District serves.

²⁶ <https://www.dol.gov/agencies/whd/fact-sheets/71-flsa-internships>

Final Summary - Key Findings and Recommendations from the CLNA Process

The Comprehensive Local Needs Assessment (CLNA) for 2024 underscores the critical importance of developing career pathways at Chabot-Las Positas Community College District (CLPCCD). The college programs are vital to meeting the occupational demand, mitigating the high cost of living, and promoting equitable economic outcomes for low-income communities in the East Bay of San Francisco. With programs at Las Positas College and Chabot College ranking among the highest in return on investment amongst California higher education institutions according to a recent study²⁷, community college certificates and degrees can lead to substantial employment opportunities. However, the caveat in 2024 remains that post-pandemic recovery and regional economic growth have not equally benefited all residents, particularly underserved populations.

The strategies outlined in the CLNA are designed to reinforce and enhance the structure of career pathways, ensuring that they align with high-demand industries in the region such as healthcare, professional services, construction, and manufacturing. By fostering industry partnerships, expanding work-based learning, and investing in professional development, the District aims to address persistent underrepresentation of women and communities of color in high-wage careers. This approach supports the California Community College Chancellor's Office Vision 2030 roadmap and aims to create a cohesive framework that integrates K12, adult education, and community college initiatives.

CLPCCD demonstrates its ongoing commitment to engage in assessing the needs of students and the workforce through cycles of evaluation using qualitative and quantitative data from students, alumni, instructional departments, employers, workforce partners, the region, state, and federal entities.

Over the years CLPCCD has built a culture focused on the importance of career education to students, the community, and employers. Through ongoing processes, such as annual Perkins V applications, the colleges review, discuss, and evaluate the best use of public funds. The district plans to continue engagement with stakeholders, improve processes, and demonstrate its collective commitment to this work.

The following outline five action steps for further consideration.

²⁷ [Golden Opportunities: Measuring Return on Investment in California Higher Education for Low- and Moderate-Income Learners - College Futures Foundation](#)

Action Steps

1. **Leverage Industry Advisory Committees:** Strengthen the role of Industry Advisory Committees to ensure program reviews and curriculum adjustments align with evolving industry needs.
2. **Expand Work-Based Learning:** Increase internship and apprenticeship opportunities to provide equitable, hands-on learning experiences for all students.
3. **Promote Dual Enrollment:** Develop equity-driven dual enrollment programs to start K12 students on career pathways early, ensuring seamless transitions to college and careers.
4. **Invest in Faculty Development:** Tailor professional development opportunities to keep faculty updated on industry trends and best practices, enhancing student support and instruction.
5. **Continue to pursue key inquiries to link efforts and address needs:** There are important topics this report was unable to address, CLPCCD should consider intentionally studying strategic topics that could benefit multiple programs and structures.

CLPCCD demonstrated its commitment to providing accessible, high-quality education that equips students with the necessary tools and training for sustainable careers, thus fostering economic equity and growth within the San Francisco Bay Area community.

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2024 CLPCCD Review of Comprehensive Local Needs Assessment

I confirm that this comprehensive local needs assessment document was conducted in accordance to the Perkins V rules and regulations.

Print Name: Theresa Rowland, Ed.D.

Title: Vice Chancellor, Educational Services and Student Success

Signature _____



Date: May 21, 2024

Appendix

1. [2024 CLNA Surveys](#)
 - a. [Faculty/Workforce Partner Survey Analysis](#)
 - b. [Student Survey Analysis](#)
2. Program Correlation by TOP Code

Health (12). Registered Nursing (123010), Medical Assisting (12080), Athletic Training and Sports Medicine (12280), Emergency Medical Services (12500), Paramedic (12510), and Dental Hygienist (12402)

Business & Management (05). Business Management (05060), Business and Commerce, General (05010), Small Business and Entrepreneurship (05064), Business Administration (05050), Accounting (05020), Office Technology/Office Computer Applications (05140), Marketing and Distribution (05090), Management Development and Supervision (05063), and Real Estate (05110)

Engineering and Industrial Technologies (09). Engineering Technology, General (092400), Electronics and Electric Technology (093400), and Machining and Machine Tools (095630)

Family and Consumer Sciences (13). Child Development/Early Care and Education (130500), Nutrition, Foods, and Culinary Arts (130600), Infants and Toddlers (130590), Interior Design and Merchandising (130200), Child Development Administration and Management (130580) and Children with Special Needs (130520)

Information Technology (07). Computer Software Development (070700), Computer Programming (070710), Computer Information Systems (070200), Information Technology, General (070100), Computer Networking (070810), Computer Support (070820), and Software Applications (070210)

Education (08). Fitness Trainer (083520)

Public & Protective Services (21). Administration of Justice (210500), Fire Academy (213350), Fire Technology (213300)

Fine & Applied Arts (10). Applied Photography (101900), Commercial Music (100500), Technical Theater (100600), and Graphic Art and Design (103000)

Media & Communications (06). Computer Graphics and Digital Imagery (061460), Digital Media (061400), Journalism (060200), Mass Communications (061000), Radio and Television (060400), Film Production (061220), and Animation (061440)

Agriculture & Natural Resources (01). Horticulture (010900), Viticulture, Enology, and Wine Business (010400)

Architecture & Related Technologies (02). Architecture and Architectural Technology (020100)