# Activation Plan for Transportation Electrification

## Bay Area Jobs First Collaborative

September 2026

BAY AREA
JOBS FIRST COLLABORATIVE

In Partnership with
CALIFORNIA JOBS FIRST

Estolano
ADVISORS

Estolano ADVISORS

# Table of Contents


**STRATEGY OVERVIEW ..... 4**

Target Sector Background ..... 4

Priority Sub-sector Overviews ..... 6

Job Growth Analysis ..... 18

Demographic Profile for Select Industries ..... 18

Outreach Summary ..... 19

Strategy Overview ..... 21

Operating Structure to Organize and Execute ..... 23

Resourcing Across the Strategy ..... 26

Goals and Metrics Across the Strategy ..... 31

Dependencies and Challenges ..... 33

**TACTICAL WORKPLAN ..... 36**

Strategy 1: Develop a regional workforce table for zero-emission transit fleet workforce and procurement. ..... 36

Strategy 2: Establish a maritime workforce strategy to support industry transition to electrification, growth, and quality jobs. ..... 43

Strategy 3: Develop a region-wide labor policy standard for charging infrastructure installation and maintenance ..... 49

Strategy 4: Align training and workforce partner supports across sub-sectors ..... 51

**APPENDICES ..... 54**

Appendix A: FTA Low-No Grant Program Workforce Funds ..... 55

Appendix B: Job Growth Analysis ..... 60

Appendix C: Demographic Profile for Select Industries ..... 61

Appendix D: Maritime Industry Growth Analysis ..... 62

Appendix E: Interview and Engagement List ..... 66

Appendix F: Example Regional Framework ..... 69

Estolano ADVISORS

BAY AREA JOBS FIRST COLLABORATIVE

In Partnership with CALIFORNIA JOBS FIRST

In 2021, Governor Newsom launched the $600 million Regional Investment Initiative (formerly known as the Community Economic Resilience Fund, or CERF) to support California's 13 regions to create quality jobs and bolster their resilience to climate and global challenges impacting the state's diverse regional economies. As part of this program, each of the 13 regions has built a California Jobs First Collaborative tasked with developing a clear vision for their region's economic future.

California Jobs First will support high-road economic development plans to create equitable access to quality jobs. High-road economic development supports environmentally sustainable businesses that pay living wages and create opportunities for career growth. As California recovers from the economic distress of COVID-19, California Jobs First aims to ensure that the state's economy works for all California residents, particularly those who have historically been marginalized.

In the Bay Area and 12 other regions in California, organizations have come together to create the Bay Area Jobs First Collaborative (formerly High Road Transition Collaborative) that include balanced representation from workforce, community, labor, business, government, economic development, education, philanthropy, and indigenous communities. All Home serves as the Regional Convener for the Bay Area Jobs First Collaborative. The Bay Area Good Jobs Partnership for Equity (BAGJPE), an association of ten workforce development boards and regional workforce planning units across the nine-county Bay Area region, serves as the Fiscal Agent, with the San Francisco Office of Economic and Workforce Development (SFOEWD) as the Fiscal Lead.

The Bay Area includes the nine counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma.

The Bay Area Jobs First vision is to re-envision regional economic development planning, centered around the values of equity, high-road employment, sustainability and climate resilience, and shaped by workers and impacted community members themselves. To achieve this mission, the Collaborative relies on the following guiding principles:

1. Climate Resilience Led by Frontline Communities and Workers
2. Lift Up Job Quality, Grow High-Road Jobs, Elevate Racial Equity and Worker Voice
3. Honor Local Without Losing the Power of the Region
4. Inclusive, Democratic, Grassroots Governance
5. Take Action Towards Transformational Change

Estolano ADVISORS

# STRATEGY OVERVIEW

## Target Sector Background

California has positioned itself as a national leader in transportation electrification by embedding clean mobility strategies into its broader climate agenda. The state has led the nation with foundational legislation like the California Global Warming Solutions Act (AB 32, 2006) that mandated statewide reductions in greenhouse gas emissions. Through California's leadership, the state has produced the largest zero-emission vehicle market in the nation, thanks in large part to policy mechanisms like executive orders, legislation, agency regulations, and incentive programs which are collectively driving a transition to a zero-emission transportation sector.

Building on this framework, California enacted the Clean Energy and Pollution Reduction Act, SB 350 (2015), to promote widespread transportation electrification, particularly through electric utility planning and charging infrastructure access. Additional policies, such as the Low Carbon Fuel Standard and Executive Order N-79-20 target reductions in fossil fuel use and mandate a full transition to zero-emission vehicles (ZEV) sales by 2035. These and other policies[1] are critical to creating a healthier environment for Californians; the state's transportation sector accounts for nearly 40% of greenhouse gas emissions.

Clean-energy legislation has evolved over the years to emphasize aligning climate goals with workforce readiness opportunities.[2] Workforce development has become a pillar within transportation electrification programs and policies. California recognizes that it is critical to ensure that a shift to clean-energy includes quality jobs and training pathways, particularly for disadvantaged communities. Key state agencies, including the California Air Resources Board (CARB) and the California Energy Commission (CEC), have developed programs such as the Clean Transportation Program (providing $100 million annually) and various other electric vehicle (EV) and infrastructure incentives to support and accelerate this transition.

In the California Jobs First Bay Area Regional Plan, the Bay Area Jobs First Collaborative identified transportation electrification as a critical sector to not only

[1] Further reinforcing the transition to clean energy, CARB's most recent Climate Change Scoping Plan (2022) includes goals of 100% ZEV sales of medium-heavy-duty vehicles by 2040, prioritizes incentive funding for heavy-duty ZEV technology deployment, and strategizes on the development of a rapid and robust network of ZEV refueling infrastructure to support the ZEVs transition needs. In 2022, CARB strengthened its climate targets, requiring a 48% reduction in greenhouse gas emissions from 1990 levels by 2030 and committing to achieve net-zero emissions by 2045. The Advanced Clean Cars II and Advanced Clean Trucks regulations advance these goals by establishing binding ZEV sales targets and pollution-reduction standards. At present, AB 914 ("Pollution Hotspots Solution Act") aims to expand the authority of CARB to enforce regulations on warehouses, rail yards, and ports by collecting emissions data and imposing fees on emitters of toxic air contaminants.

[2] AB 298 (2019) extended California's Cap and Trade ("Cap & Invest") program through 2030 and emphasized utilizing program revenues for workforce development.

achieving the state's clean energy goals, but also to grow the region's competitive advantage and increase job quality and access.[3]

The Bay Area is implementing policies, programs, and practices to advance transportation electrification. Public agencies are transitioning their fleets to zero-emission vehicles (ZEVs) and producing those vehicles in the Bay Area, businesses are investing in charging infrastructure, and community organizations and workforce development boards are expanding training programs to prepare workers for transportation electrification-related occupations. Despite the progress that has been made, these industry players emphasize the need for a more coordinated, regional approach to ensure the transportation electrification transition is successful and supported by a well-prepared workforce capable of meeting its demands.

One of the goals of the Bay Area Jobs First Collaborative is to increase access to quality jobs for disadvantaged communities. The Bay Area is already experiencing occupational segregation; Black and Hispanic/Latinx workers being overrepresented in lower-paying occupations, while White and Asian workers are overrepresented in higher-paying jobs.[4] This, coupled with the projected growth of low-wage occupations over the next decade could exacerbate racial income inequality in the region. The strategies developed in this Activation Plan are shaped by the experiences of communities historically excluded from careers that provide upward mobility and security, including environmentally overburdened communities, BIPOC workers, and justice-impacted individuals. Equity should be at the forefront of transportation electrification to ensure that quality jobs are reaching the region's most impacted communities.

It is important to recognize that transportation electrification overlaps with other critical sectors targeted for investment by the Bay Area Jobs First Collaborative, such as advanced manufacturing and battery manufacturing. To be most broadly effective, strategy implementation must address public procurement and labor standard levers across sectors. In addition, all sector investments must consider the availability and affordability of childcare and early childhood education for targeted workers (another focus sector of the Collaborative). This Activation Plan's sole focus is on transportation electrification, but the region must identify synergies across all sector strategies to achieve effective outcomes.

[3] Bay Area Jobs First Collaborative. "Bay Area Regional Plan." 2024. https://www.allhomeca.org/wp-content/uploads/2025/05/RP2_Final_Q1_2025.pdf
[4] Bay Area Jobs First Collaborative. "Bay Area Regional Plan." 2024. https://www.allhomeca.org/wp-content/uploads/2025/05/RP2_Final_Q1_2025.pdf

Estolano ADVISORS

# Priority Sub-sector Overviews

In a scan of transportation electrification activities in the Bay Area and discussions with stakeholders, we have identified six meaningful sub-sectors within the broader transportation umbrella. These sub-sectors—Manufacturing, Maritime & Ports, Private Vehicles, Public Transit Fleets, Public Non-Transit Fleets, and School Buses—represent distinct and critical areas of focus for advancing the region's electrification goals.

Within this broader set of sub-sectors, we investigated several demand-side factors for their strong growth potential, including state-mandated goals, public agency procurement levers, and existing scalable training programs. Drawing on these factors, along with projected job growth and insights from interviews with community-based organizations, labor leaders, local governments, and employers, we have identified three priority sub-sectors for focused strategy development: **Public Transit Fleets**, **Maritime & Ports**, and **EV Charging Infrastructure**.

Each of the priority sub-sectors is experiencing a surge of investment and momentum and have some workforce strategies that can be scaled up, while also facing uncertainty around providing a skilled workforce to meet demand. The strategies within this Activation Plan support disadvantaged communities and workers with barriers to entry to quality jobs, such as justice-impacted individuals and BIPOC workers. To ensure equitable outcomes for regional investments, further research on the transportation electrification workforce is needed to understand how to best recruit and retain disadvantaged workers in these occupations. There has been no comprehensive regional workforce inventory in this sector to date.

## Public Transit Fleets

As of September 2024, eleven transit agencies in the Bay Area have completed Zero Emission Bus (ZEB) Rollout Plans.[5] ZEB Rollout Plans are detailed plans by California public transit agencies on how each agency will transition its fleet to 100-percent zero-emission buses by 2040. ZEB Rollout Plans are mandated by CARB under its Innovative Clean Transit regulation and include elements such as fleet inventory, infrastructure and facility upgrades, and funding strategies.

By requiring public transit agencies to create plans to transition to clean energy, California is creating the conditions for a coordinated and achievable transition. The CARB fleet mandate is a clear opportunity to strengthen in-state

[5] Agencies with ZEB Rollout Plans include Alameda-Contra Costa Transit District; Golden Gate Bridge, Highway and Transportation District; San Francisco Municipal Transportation Agency; San Mateo County Transit District; Santa Clara Valley Transportation Authority; Central Contra Costa Transit Authority; Eastern Contra Costa Transit Authority; Livermore Amador Valley Transit Authority; Napa Valley Transportation Authority; Sonoma County Transit; and Western Contra Costa Transit Authority. California Air Resource Board. "ICT- Rollout Plans." 2025.

manufacturing, create local jobs, and synchronize regional workforce development efforts.[6]

*Training*

In anticipation of the electric transition, transit agencies, unions, and community-based organizations are reinvigorating workforce training programs for bus operators and mechanics. For example, through two Bus and Low and No-Emission Grants from the FTA in 2023 and 2024[7], AC Transit is building a new, state-of-the-art Zero Emission Bus University (ZEBU) to serve as a regional training hub for the ZEB workforce.[8] This facility is currently under construction in Hayward and is anticipated to open doors in 2028/2029. Once open, this program, in partnership with Chabot College, will offer the nation's first transit-collegiate partnership aimed at bolstering the learning and training pipeline in zero-emission transit across the region.[9] Notably, mechanic and technician trainings are in particular demand across the region, and these occupations require more extensive training than that required for a bus operator.[10]

Labor-management partnerships serve as a cornerstone model for aligning transit workforce training with evolving industry demands in real-time. In the Bay Area, the Santa Clara Valley Transportation Authority (VTA) in partnership with Amalgamated Transit Union (ATU) Local 265 developed the Joint Workforce Investment (JWI) program.[11] This program, now also in partnership with Mission College, focuses on addressing skilled labor shortages, career development, and retention within the VTA's public transit workforce.[12] Additionally, California Transit Works (CTW) has a High Road Training Partnership (HRTP) with VTA and JWI, AC Transit, and Golden Gate Transit to adapt frontline training to zero-emission technology shifts, electric bus deployments, and workforce shortages.[13]

---

[6] California has missed recent opportunities to localize production of zero-emission transit vehicles, with Caltrain and BART sourcing new fleets from out-of-state manufacturers.
[7] See Appendix A for additional information on FTA Bus and Bus Facilities, and Low-No Emission Grant program funding in the Bay Area.
[8] AC Transit. "Zero Emission Program." 2026. https://www.actransit.org/zeb
[9] AC Transit. "Zero Emission Program." 2025. https://www.actransit.org/zeb
[10] AC Transit. "Zero Emission Bus Transition Plan." 2022. https://www.actransit.org/sites/default/files/2022-06/0162-22%20ZEB%20Transition%20Plan_052022_FNL.pdf
[11] Joint Workforce Investment. "History." 2026. https://www.jwiworks.com/about
[12] Santa Clara Valley Transportation Authority. "VTA/ATU Apprenticeship Program Receives State Grant." 2025. https://www.vta.org/blog/vtaatu-apprenticeship-program-receives-state-grant.
[13] California Workforce Development Board. *California Transit Works! Expansion*. 2024. https://cwdb.ca.gov/wp-content/uploads/sites/43/2024/10/HRTP-2024.CTW_.High-Road-to-Public-Transit_ACCESSIBLE.pdf

Community-based organizations are also creating targeted pathways into public transit careers. Canal Alliance, a nonprofit based in San Rafael, partners with local community colleges and transit agencies to offer bus operator training for Latino immigrants and their families.[14]

## Catalyst Spotlight

### High Road Clean Transportation Career Pathways

Canal Alliance is a partner, with the West Oakland Job Resource Center, in High Road Clean Transportation Career Pathways, a Catalyst project funded by California Jobs First through the Bay Area Jobs First Collaborative. As part of this collaboration, Canal Alliance, West Oakland Jobs Resource Center, local government partners, the International Brotherhood of Teamsters, Good Green Work, the Machinist Institute, and the Lime Foundation will research, design, and pilot a model to increase access to quality green transportation careers in San Rafael and Oakland.

While there are promising investments in trainings for bus operators and mechanics, there is no standard policy driving the procurement side of fleet transitions. A major regional asset is Gillig, the Livermore-based bus manufacturer and the largest producer of heavy-duty transit buses in the U.S. Gillig has a labor agreement with Teamsters Local 853 and employs over 500 union-represented workers. In a collaboration beyond their collective bargaining agreement, Gillig and Local 853 have formed a High Road Training Partnership to build plans for future training and certification development. As part of this work, Gillig will establish a new training department and work towards aligning workforce training, career advancement, and labor voices in ZEV manufacturing.[15] This labor partnership is a model for building high-road job pathways in clean transportation manufacturing.

The AC Transit, VTA and JWI, and CTW HRTP partnerships, and Canal Alliance programs demonstrate how local partnerships provide opportunities to upskill and reskill workers and scale training pipelines to meet demand. Models such as these can be adopted and scaled by other labor partners with existing training programs in the region. Additionally, the Gillig-Local 853 partnership speaks to the opportunity for agencies to drive demand for local high-road manufacturing jobs through their procurement policies.

## Maritime

The Bay Area's maritime sector is entering a period of significant transition. Federal and state investments in port electrification, ferry expansion, and zero-emission vessel technology have the potential to reshape the region's maritime

[14] Canal Alliance. “Acquire Job Skills.” 2025. https://www.canalalliance.org/services/acquire-job-skills/

[15] California Jobs First. “State Economic Blueprint.” 2025. https://jobsfirst.ca.gov/wp-content/uploads/Economic-Blueprint.pdf

workforce over the next several decades. The Bay Area's maritime sector is anchored by a relatively small number of public agencies, port operators, and private employers spread across the region. The sector can be understood through three broad categories of activity: ports and their associated cargo and logistics operations, ferry terminals and operators, and shipyards and marine services. The region's marinas and smaller harbors are generally not at scale to drive significant workforce growth; however, ferry operators and major ports are demonstrating momentum, particularly around electrification.

*Ports*

The Port of Oakland is the dominant maritime facility in the region. As the busiest container port in Northern California, it handles 99 percent of the region's containerized goods and supports approximately 98,000 jobs across its aviation, maritime, and real estate operations.[16] Its four container terminals and two intermodal rail facilities anchor the Oakland waterfront. The Port of Richmond is another hub for economic activity in the East Bay, transporting over 20 million tons of cargo in 2020.[17] Other port facilities around the Bay, including in San Francisco, Benicia, and Redwood City, handle smaller-scale or specialized maritime operations.

*Ferry Operators*

San Francisco Bay Ferry, administered by WETA and operated under contract by the Blue and Gold Fleet, is the region's primary public ferry service. The system operates six regular routes with a fleet of 18 vessels, serving approximately three million riders annually.[18] WETA employs 30 full-time staff, with additional employees contracted through the Blue & Gold Fleet, a private company that hires captains, deckhands, engineers, and other staff responsible for day-to-day ferry operations.[19] Golden Gate Ferry, operated by the Golden Gate Bridge, Highway and Transportation District, provides additional service between San Francisco and Marin County. Both operators maintain small but highly skilled maintenance and operations workforces, and both are actively exploring or implementing vessel electrification.

*Shipyards and Marine Services*

The region retains a small number of active shipyards, including Bay Ship & Yacht in Alameda and Mare Island Dry Dock in Vallejo, which handle vessel construction, repair, and retrofitting. The Working Waterfront Coalition, an industry-led partnership, works with these shipyards and ferry operators to

[16] Port of Oakland. "Economic Benefits." 2026. https://www.portofoakland.com/everyones-port/economic-benefits
[17] California Legislative Analyst's Office. "Overview of California Ports." 2022. https://lao.ca.gov/Publications/Report/4618
[18] San Francisco Bay Ferry. "Ridership Data." 2026. https://www.sfbayferry.com/ridership-data/
[19] San Francisco Bay Ferry. "Employment Opportunities." 2026. https://sanfranciscobayferry.com/employment-opportunities/

address workforce shortages in marine trades.[20] Smaller boatyards and marine service providers operate throughout the Bay, though the sector reports persistent difficulty recruiting qualified entry-level workers.

*Funding*

Driven by rigorous California regulatory mandates and backed by hundreds of millions of dollars in federal and state grants, the Bay Area maritime sector is amidst a rapid transition toward zero-emission fleet and port operations. Comprehensive local, regional, and state planning frameworks are aligning to expand ferry networks, modernize cargo terminals, and explore future offshore wind opportunities. Collectively, these historic infrastructure investments and technological shifts are fundamentally reshaping regional workforce development by generating thousands of green-economy jobs and a surging demand for specialized maritime and electrical trades.

The Port of Oakland is the epicenter of federal maritime investment in the Bay Area. Over the past several years, the Port has secured over $440 million in federal grants to transition its seaport to zero-emission operations. The largest is a $322 million EPA Clean Ports Program grant (2024), which will fund 663 pieces of zero-emission equipment, including 475 drayage trucks, 188 pieces of cargo handling equipment, six battery energy storage systems, and over 200 charging stations.[21] A $119 million Freight Infrastructure Program grant (2023) complements this effort with electrical utility upgrades, shore power systems, and wharf improvements at the Outer Harbor Terminal.[22] Additional grants, including the CTC Green Power Microgrid Project[23] and a U.S. DOT Green Infrastructure Grant,[24] will expand the Port's zero-emission vehicle capacity from 50 to over 1,000 through substation upgrades, solar generation, and additional charging infrastructure. Workforce commitments are embedded directly in these investments: the EPA Clean Ports grant designates the West Oakland Job Resource Center (WOJRC) to lead workforce delivery, with 300 jobs anticipated and 80 participants targeted for union apprenticeship placement.

[20] Working Waterfront Coalition. “What We Do.” 2026. https://waterfrontjobs.com/what-we-do/
[21] Port of Oakland. "Port of Oakland Awarded Historic $322 Million EPA Grant." 2024. https://www.portofoakland.com/port-of-oakland-awarded-historic-322-million-epa-grant
[22] Port of Oakland. "State Awards Port of Oakland $119 Million in Sustainable Transportation Infrastructure Grants." 2023. https://www.portofoakland.com/state-awards-port-of-oakland-119-million-in-sustainable-transportation-infrastructure-grants
[23] Port of Oakland. "California Says Yes to Port of Oakland's Green Power Microgrid Project." 2023. https://www.portofoakland.com/california-says-yes-to-port-of-oaklands-green-power-microgrid-project.
[24] Port of Oakland. "Port of Oakland Receives Federal Grant for Green Development." 2022. https://www.portofoakland.com/port-of-oakland-receives-federal-grant-for-green-development

On the passenger transportation side, federal and state funding is accelerating SF Bay Ferry's transition to a zero-emission fleet. A $55.4 million EPA Clean Ports Program grant (2024) awarded to the Port of San Francisco and SF Bay Ferry funds shore power charging systems at the Downtown Ferry Terminal and Mission Bay Ferry Landing, a new zero-emission electric vessel, and a four-year workforce development initiative administered by the Working Waterfront Coalition.[25] The grant estimates 300 direct and 600 indirect jobs, and the Working Waterfront Coalition (WWC) will train over 200 apprentices through the program. Separately, an FTA grant supporting WETA's REEF Program will fund procurement of three 150-passenger battery-electric vessels, with future phases planned to add two larger electric vessels and convert four existing diesel ferries.[26] In 2022, a $14.9 million CalSTA TIRCP award funded construction of an additional vessel and its associated charging infrastructure.[27]

State funding reinforces these federal investments. CARB's FY 2024-25 Funding Plan channels resources to multiple Bay Area vessel electrification projects, including the Port of Oakland Zero-Emission Tug ($25 million) and the Angel Island-Tiburon Ferry Electrification Project ($24 million).[28] At a smaller scale, the Port of Richmond secured approximately $14 million through the federal Port Infrastructure Development Program (PIDP) – with a 20 percent local match – for its DRIVE Project Expansion (2026).[29] The project will rehabilitate and modernize Berth 7 at the Point Potrero Marine Terminal, including structural wharf restoration and seismic resilience upgrades. In August 2026, Governor Gavin Newsom announced $8,236,500 in funding to bolster regional shipbuilding.[30] This award is part of a $48.5 million statewide distribution

[25] Port of San Francisco. "Request Authorization to Accept and Expend a $55,386,000 Grant from the U.S. Environmental Protection Agency Clean Ports Program to Fund the San Francisco Waterfront Emissions-Free Ferry System Project." Memorandum from Elaine Forbes to Members. Port Commission, Calendar Item No. 11B2024. 2025. https://www.sfport.com/media/10168/download?inline=

[26] San Francisco Bay Ferry. "San Francisco Bay Ferry Awarded $11 Million Federal Grant for Electric Vessel Procurement." 2024. https://sanfranciscobayferry.com/san-francisco-bay-ferry-awarded-11-million-federal-grant-for-electric-vessel-procurement/

[27] WorkBoat. "WETA Awarded $14.9 Million to Develop Electric Ferry Network in San Francisco." 2022. https://www.workboat.com/passenger-vessels/weta-awarded-14-9-million-to-develop-electric-ferry-network-in-san-francisco

[28] California Air Resources Board. *Proposed Funding Plan, Fiscal Year 2024-25*. 2024. https://ww2.arb.ca.gov/sites/default/files/2024-10/Proposed%20Funding%20Plan%20Fiscal%20Yearl%202024-25.pdf

[29] American Journal of Transportation "Port of Richmond, CA Awarded $11.22 Million Federal Grant to Modernize Berth 7." 2026. https://www.ajot.com/news/port-of-richmond-ca-awarded-11.22-million-federal-grant-to-modernize-berth-7

[30] Office of Governor Gavin Newsom. "Governor Newsom Awards $48.5 Million to Drive Economic Growth and Advance Innovation Across the State, Supporting the Creation of 20,000 New Jobs." 2026. https://www.gov.ca.gov/2026/08/26/governor-newsom-awards-

through the California Jobs First Regional Investment Initiative. Funding for this regional award will drive innovation, expand workforce development curricula, and improve coordination across the region for the Bay Area's maritime industrial base.[31] Governor Gavin Newsom also fast-tracked the approval process for a new pier in Berkeley, expanding the zero-emission ferry connection between Berkeley, San Francisco, and Larkspur.[32]

*Training*

Trainings are adapting in anticipation of electrification of the ports. The Pacific Maritime Association will offer skills and safety trainings for operating new zero-emission equipment and vehicles, while the Machinists Institute and Teamsters will support the West Oakland Job Resource Center in enhancing its existing Pre-Apprentice Transportation, Distribution, and Logistics program for the Port of Oakland. The expansion under the High Road Clean Transportation Career Pathways catalyst grant will introduce new training modules and career pathways to meet increasing demand for jobs related to construction, ZEVs, and climate-resilient technologies.

In Contra Costa County, Ridgeline Pathways is expanding exposure to maritime careers for San Francisco Bay Area youth. By partnering directly with organizations like the Working Waterfront Coalition and Cal Poly Maritime Academy, Ridgeline Pathways connects students with real-world industry experts, interactive site visits, and paid, hands-on career exploration programs such as its Hands-On Deck intensive and MaritimeX Fellowship. This initiative is increasing awareness of high-wage, quality careers for youth while also strengthening the local maritime talent pipeline.[33]

In addition, the Bay Area Working Waterfront Coalition is building the pipeline of skilled maritime maintenance and repair workers through an eight- to ten-week welding, machinist, and electrical training course.[34] The program matches

48-5-million-to-drive-economic-growth-and-advance-innovation-across-the-state-supporting-the-creation-of-20000-new-jobs/

[31] California Labor and Workforce Development Agency. *Regional Investment Initiative Implementation Phase Round II Awards Summary*. California Jobs First. 2026. https://www.labor.ca.gov/wp-content/uploads/sites/338/2026/08/RII-Implementation-Phase_Round-2-Awards.pdf

[32] Office of Governor Newsom. "Governor Newsom cuts red tape to accelerate new zero-emissions ferry project in San Francisco Bay." 2026. https://www.gov.ca.gov/2026/09/16/governor-newsom-cuts-red-tape-to-accelerate-new-zero-emissions-ferry-project-in-san-francisco-bay/

[33] Ridgeline Pathways. "Maritime Career Pathways." 2026. https://www.ridgelinepathways.org/career-pathways/maritime/maritime-pathway-overview

[34] "Bay Area Regional Plan." Bay Area Jobs First Collaborative. 2024. https://www.allhomeca.org/wp-content/uploads/2025/05/RP2_Final_Q1_2025.pdf

students to job opportunities through hiring agreements with industry partners.[35]

Exciting partnerships and unprecedented funding highlight the opportunity to coordinate a comprehensive, region-wide approach that promotes workforce training, community outreach, and labor partnerships to scale with the demands of maritime electrification.

A deeper-dive into maritime investments and training programs in the region can be found in the forthcoming "Maritime Workforce Demand Assessment," which is a study conducted by Estolano Advisors and funded by Tipping Point Community. This study will be released in October 2026.

## EV Charging Infrastructure

The Bay Area Regional Plan identifies EV charging infrastructure as a key area of projected job growth. California has set a goal of deploying over 2 million public and private chargers by 2035, which will significantly increase demand for certified electricians, battery storage technicians, and professionals skilled in electrical panel upgrades and charger installation.[36]

Key elements of the EV charging sub-sector include a range of infrastructure types designed to serve different vehicle classes and user needs. These include publicly owned and privately installed charging stations for heavy-duty and light-duty vehicles; EV charging infrastructure for private and shared use of light-duty passenger vehicles, including those used in fleet applications; and in-home charging systems for personal vehicles.[37] In addition, there is growing demand for shoreside power to charge electric vessels, drayage trucks, and cargo-handling equipment at ports. Each of these infrastructure types requires tailored planning, installation, and maintenance strategies to meet unique operational, safety, and workforce demands.

As the Bay Area's charging infrastructure network is expanding to meet California's transportation electrification goals, it raises the question of who is legally and safely permitted to maintain this infrastructure. Charging infrastructure work spans two distinct functions: installation and maintenance. Installation generally covers site assessment, electrical panel and conduit work, charger (EVSE) mounting, and commissioning (turning on the charger).

---

[35] "Bay Area Regional Plan." Bay Area Jobs First Collaborative. 2024. https://www.allhomeca.org/wp-content/uploads/2025/05/RP2_Final_Q1_2025.pdf

[36] California Energy Commission. *Electric Vehicle Charging Infrastructure Assessment: Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030 and 2035.* 2023. https://www.energy.ca.gov/data-reports/reports/electric-vehicle-charging-infrastructure-assessment-ab-2127

[37] California Energy Commission. *Electric Vehicle Chargers in California*. 2026. https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/electric

Maintenance is most often focused on diagnosis, repair, software updates, physical component replacement, and ongoing troubleshooting to keep chargers operational and improve uptime (the time that a charger is fully functional and ready for use). Demand for both installation and maintenance workforce is expected to grow as the state's zero-emission vehicle (ZEV) mandates and vehicle electrification targets take effect.[38] An influx of National Electric Vehicle Infrastructure Formula Program (NEVI) funding between 2023 and 2024 has helped accelerate near-term buildout.

The University of California Los Angeles (UCLA) Labor Center is conducting an Electric Vehicle Supply Equipment (EVSE) Workforce Assessment, commissioned by the California Energy Commission (CEC).[39] As part of this study, UCLA is providing estimates of work-hours required for charging infrastructure installation and maintenance based on the CEC's charging infrastructure needs assessments which are published annually under AB 2127. These projections cover Level 1 (home) chargers, and Level 2 residential and public chargers including medium- or heavy-duty chargers, which are used for commerce such as trucks, school buses, and public transit (mainly city and regional buses). Workforce estimates drawn from this study will understate the full scope of the sector. UCLA is currently awaiting an updated round of CEC projections before finalizing its own workforce figures.

*Fragmented Ownership and Maintenance*

Charging station maintenance and property ownership structure is a significant driver of maintenance problems. Chargers are frequently owned by commercial property owners or local governments, who then contract with separate companies to perform maintenance. The separation of ownership and maintenance responsibilities has contributed to inconsistent charger uptime and unclear lines of accountability; the property owner who owns the charger is not performing repairs and the maintenance contractor does not share the revenue or public benefit that the charger generates. Neither party then bears the full cost of downtime required for maintenance, which reduces the incentive for either actor to prioritize fast repairs. When a charger fails, it can also be unclear who is responsible for diagnosing the problem: the property owner, maintenance contractor, or the charging manufacturer, further slowing response times.[40] This dynamic predates and compounds the workforce challenges discussed below.

---

[38] California Air Resources Board. *Advanced Clean Cars II Regulation.* 2022. https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii

[39] California Energy Commission. *Backup Materials for The Regents of the University of California, on behalf of the Los Angeles Campus.* Business Meeting. February 12, 2025. https://www.energy.ca.gov/filebrowser/download/6970?fid=6970

[40] U.S. Department of Energy. Operation and Maintenance for Electric Vehicle Charging Infrastructure. 2026. https://afdc.energy.gov/fuels/electricity-infrastructure-maintenance-and-operation

*Training and Workforce Implications*

Maintenance is primarily performed by electrical contracting firms and firms specializing in EVSE maintenance. Some vertically integrated companies, such as Tesla and Rivian, have in-house teams dedicated to EVSE maintenance. When an electrical contractor is contracted for maintenance and repairs, a licensed electrician or supervised apprentice performs the work. However, the requirements for EVSE technician roles at other types of firms providing EVSE maintenance and repairs vary – some have hired EVSE Technicians that are not certified electricians or apprentices.

Licensed electricians are trained through International Brotherhood of Electrical Workers (IBEW) and Joint Apprenticeship and Training Committees (JATC) apprenticeships and, for EV-specific work, layer on the Electric Vehicle Infrastructure Training Program (EVITP) certification and original equipment manufacturer (OEM)-specific certifications. Some companies hire workers that are not licensed electricians or apprentices. These workers may have some previous electrical experience through the military, community college coursework or an associate's degree in electrical engineering, utilities work, manufacturing work, or as an electric vehicle technician. When hired, these workers may be provided with 1-3 weeks of in-house training and on-the-job mentoring; they are also sent to OEM certification trainings, which are frequently required to maintain charger warranties. For electricians in the Bay Area, IBEW/JATC apprenticeship programs provide the base electrical training with EVITP certification included for EV-specific competency. On the technician track, SmarterHelp and similar programs provide EVSE training, and SAE International (SAE) offers an EVSE Technician Certification.

Industry and technician-training organizations frequently describe the division of labor between these electricians and EVSE technicians as a gray area. This does not appear to be a genuine legal ambiguity, since the underlying building code applies statewide.[41] According to LA County's Building Inspection Department, the distinction between roles is clear;[42] only certified electricians may de-energize equipment, run electrical diagnostics, or replace components, while technicians are permitted to perform software troubleshooting, site checks, and issue escalation (excluding hands-on electrical work). Electrical work carries serious hazards, including arc flash which can be fatal. Requirements for safety training and continuous skills may be necessary for the entire charging workforce to ensure protection for all workers including technicians. The UCLA Labor Center research team has additional interviews

[41] California Public Utilities Code § 740.20 (FindLaw, updated January 1, 2026). 2022. https://codes.findlaw.com/ca/public-utilities-code/puc-sect-740-20/

[42] Sarah Thomason (Principle and Founder, Movement Economics) and Veronica Wilson (Program Specialist), UCLA Labor Center, in discussion with Sector Investment Coordinator. 2026.

planned with state-level officials and county legislators to better understand how policymakers are engaging with these standards.

*Implications for State Mandates*
Rather than treating the technician role as an endpoint career, several stakeholders have suggested framing EVSE technicians as an introduction to the industry and creating on-ramps into electrician apprenticeships—preserving a low-barrier entry point into the sector while avoiding the safety and job-quality problems described above. IBEW is exploring development of additional pathways into electrical programs at the national level, potentially creating a technician-to-electrician pathway. Comparable models exist in other trades, including HVAC and sheet metal apprenticeship structures:

- The City of Seattle's Community Workforce Agreement is a pre-hire agreement between the city, building trades unions, and contractors that sets apprentice utilization requirements and a preferred-entry track for underserved populations on public construction projects.[43]
- Rising Sun Center for Opportunity, an Oakland-based nonprofit whose Opportunity Build program, in partnership with the Alameda County Building and Construction Trades Council, is a certified apprenticeship readiness program that places graduates directly into union construction apprenticeships.[44]

Tensions extend beyond industry versus union: state agencies currently treat the electrician and non-electrician paths as equally valid, in part because clarifying the legal line could be perceived as adversarial toward EVSE technician-training providers whose business model depends on the current ambiguity. The CEC has viewed EVSE technicians as a promising workforce development pathway toward good jobs, which means any push for stricter entrance requirements for the sector could undercut this promising pathway. Legislators considering action can frame this as a workforce expansion opportunity, providing a structured entry point into the industry while creating clear pathways into a certified trade apprenticeship.

The Bay Area's charging infrastructure workforce is an important consideration as the region seeks to meet its climate goals. Clarifying the necessary training, safety and certification requirements across the spectrum of roles within installation and maintenance will support the region in increasing quality jobs in the transportation electrification sector while meeting its clean energy mandates. Utilizing the forthcoming UCLA EVSE Workforce Assessment study, local leaders in the sector can develop labor policy standards for charger

[43] City of Seattle. *Community Workforce Agreement*. 2021. https://www.seattle.gov/Documents/Departments/FAS/PurchasingAndContracting/Labor/fully-executed-2021-city-of-seattle-CWA.pdf
[44] Rising Sun Center for Opportunity. "Opportunity Build." 2026. https://risingsunopp.org/programs/opportunity-build/

installation and maintenance. Collaborative efforts among key stakeholders could lead to quality standards embedded in Community Benefits Agreement (CBA) or Project Labor Agreement (PLA) templates that cities, counties, and other public purchasers could adopt for contracts involving public funds. This would require contractors to commit to local hire, job quality, and workplace safety standards for EV charging installation and maintenance.

## Job Growth Analysis

Appendix B shows projected job growth, median wages, and qualifications for transportation electrification occupations that were identified through stakeholder interviews and research. Most occupations—particularly in power generation and installation—are projected to grow, pay above the 2024 annual median wage for the region ($73,960), and do not require a four-year degree.

Appendix D is summary of maritime industries positioned for growth based on investment signals and Lightcast data. Table 4 in Appendix D builds on the growing maritime-related industries identified that meet quality job criteria. This information was gathered from the forthcoming "Maritime Workforce Demand Assessment."

## Demographic Profile for Select Industries

Appendix C shows the region's current ethnic, racial, and gender demographics for workers in industries correlated with key occupations highlighted in the Job Growth Analysis, including construction laborers, electricians, mechanics, and truck drivers.

Among these four industries, the current workforce is generally less demographically diverse than the regional workforce, except for Hispanic and Latino workers—who are overrepresented among these industries (37-47%) relative to their share of the regional workforce (24%). Across the four industries, White workers were overrepresented (62-84%) relative to the regional workforce (58%). Black and Asian workers are particularly underrepresented for the four industries relative to the regional workforce, with the exception of truck drivers (12% Black and 23% Asian). Women workers are significantly underrepresented (19-26%) for the four industries relative to their share of the regional workforce (48%). While preliminary, this research points to a need for focused investments in workforce development programs and policies to increase worker diversity within the growing transportation electrification workforce.

# Outreach Summary

Interviews with union leaders, workforce development partners, and community-based organizations (CBOs) surfaced several critical opportunities for job growth and improved access into transportation electrification careers.

Stakeholders emphasized the need for more robust data and job mapping to identify where high-quality jobs are likely to emerge. They also called for stronger cross-sector collaboration among employers, unions, and workforce organizations to continue to evolve training programs that can keep pace with rapidly evolving technologies and the shifting skill requirements of the future workforce. Leaders anticipate strong demand for jobs across multiple areas, including heavy-duty EV maintenance and repair, electric grid modernization and expansion, installation and maintenance of charging infrastructure, and logistics at the region's ports. However, targeted data on exactly which occupations are most needed and which deliver high-quality careers was largely anecdotal, and growth projections were lacking. Many jobs in these sectors—particularly for mechanics and bus operators—require upskilling in electrical systems, safety protocols, and new technologies. In the maritime sector, stakeholders identified emerging job opportunities in the transition to electric drayage operations, the conversion of ferries, and the development of electric ship charging capabilities at large ports. Transportation, distribution, vessel operations and logistics roles, electrical and other skilled trades were identified as opportunities to increase pathways for good careers for justice-impacted, women, and other underrepresented workers.

While job growth is promising, stakeholders repeatedly emphasized the need to define and uplift job quality standards across transportation electrification occupations. Union representation, career advancement pathways, safety protections, and standardized training emerged as core pillars of good jobs. In high-risk occupations such as charger installation and maintenance, stakeholders stressed the urgency of uniform safety and certification protocols. They also raised concerns about the proliferation of short-term, low-quality, non-union roles and the convoluted structure of the maritime sector, where varying union contracts and career pathways create barriers to coordinated workforce development efforts. In the maritime sector, though these jobs offer long term career pathways and the ability to earn high wages, entry points into the fields are hampered by fragmented training infrastructure.

To meet these challenges, stakeholders called for policy and structural interventions that define the maritime sector as a distinct sector in its own right within the Bay Area's transportation electrification transition, one worth investing in for quality jobs and workforce equity. Key recommendation is to establish a regional maritime sector table bringing together employers, unions, education providers, and workforce partners, with a particular focus on vessel operations, maintenance, construction, logistics, and government, in addition to the shipbuilding ecosystem, so the region can work together to streamline pathways into high quality occupations.

Key tactics include expanding maritime-related pre-apprenticeship and apprenticeship programs in high-growth occupations that offer long-term career pathways; establishing electrical certification requirements for EV maintenance workers (similar to existing standards for installation roles) to ensure quality and safety; and creating standardized training and certification for zero-emission heavy-duty vehicle fleet mechanics and operations jobs. Stakeholders also emphasized embedding labor standards and community workforce goals into public procurement policies to promote high-quality, union jobs and promote transparent, accessible pathways for local communities to benefit from the transition.

There was also strong support for tying public investments to job quality metrics such as wages, safety standards, and union representation, as well as for increasing public awareness and targeted recruitment efforts in underrepresented communities.

Estolano ADVISORS

# Strategy Overview

## Strategy 1

### Develop a regional workforce table for zero-emission transit fleet workforce and procurement.

Establish a regional table—including public transit agencies, workforce development boards, workforce partners and trainers—to align on procurement strategies, workforce investments, and targeted hiring practices to support the transition to zero-emission fleets. This table will work towards maximizing resources for the region to expand access to quality jobs for underrepresented communities.

**Near-Term Tactics:**

1. Regional zero-emission transit fleet planning and coordination.
2. Transit fleet workforce demand inventory.

## Strategy 2

### Establish a maritime workforce strategy to support industry transition to electrification, growth, and quality jobs.

Establish a shared understanding of the region's maritime sector workforce demand for maritime sector stakeholders including ports, ferry operators, employers, unions and workforce partners. This consensus will serve as the north star for future workforce investments and targeted hiring strategies supporting the electric transition of maritime industries. A shared baseline will help highlight gaps in access to quality jobs for disadvantaged communities across key functions, including construction, production, operations, and maintenance.

**Near-Term Tactics:**

3. Regional maritime sector planning and coordination.
4. Maritime workforce demand- and supply-side analyses.

## Strategy 3

### Develop a region-wide labor policy standard for charging infrastructure installation and maintenance.

Establish a regional labor policy standard to ensure contractors receiving public funds for ZEV charging infrastructure commit to local hiring, job quality, and workplace safety. A working group, co-led by a labor union and a major public agency or research institution, will be tasked with developing the policy and promoting its adoption by cities and counties in the region.

**Near-Term Tactics:**

5. Support efforts to develop charging infrastructure labor policy.

## Strategy 4

### Align training and workforce partner supports across sub-sectors.

Establish a regional forum to support ongoing engagement among training providers, labor unions, colleges, and community-based organizations involved in the transportation electrification sector. This forum will serve as a platform to share best practices and align on common policy and funding priorities that advance career pathways in the sector. The regional forum should encompass all three key sub-sectors—Public Transit Fleets, Maritime and Ports and EV Charging Infrastructure—and focus on sub-sector information sharing, highlighting transportation electrification progress, lessons learned, addressing barriers to access, evaluating shifts in skill demand, and coordinating workforce funding efforts across the region.

## Near-Term Tactics:

6. Develop region-wide mechanism for sharing transportation electrification-related workforce updates.

# Operating Structure to Organize and Execute

Each strategy engages stakeholders in time-bound, deliverable-based working groups or tasks. The Sector Investment Coordinator for transportation electrification will direct the implementation of each tactic and manage corresponding stakeholder engagement throughout the contract term.

The following is a list of key regional stakeholders. Some of the stakeholders identified below have been interviewed as part of the stakeholder engagement process for this Activation Plan. A comprehensive list of stakeholders that have participated in interviews are listed in Appendix E.

**Regional and State Agencies:** State agencies are responsible for advancing transportation electrification through policy, funding, and coordination. State agencies establish regulations and goals and promote implementation through incentives, funding, and enforcement. There are multiple regional and state agencies driving the demand for transportation electrification. The Bay Area Air District (BAAD, formerly BAAQMD) develops regional plans to advance clean transportation and hosts the Bay Area Electric Vehicle Coordinating Council. CARB develops policies, regulations and programs to accelerate the State's shift to clean transportation. CARB also administers funding and incentives related to clean transportation adoption and infrastructure. Similarly, the California Transportation Commission (CTC) and California Energy Commission (CEC) promote clean transportation through funding, infrastructure planning, and regulatory activities.

**Local Jurisdictions:** Cities and counties along with transit agencies, and ports and harbors are key players in advancing and implementing transportation electrification. The 27 Bay Area transit agencies are responsible for meeting state and federal climate goals and ensuring that plans to meet mandates align with the needs and visions of their communities. As the regional transportation planning, financing, and coordinating agency for the nine Bay Area counties, Metropolitan Transportation Commission (MTC) coordinates regional efforts that support transportation electrification, including supporting public transit agencies in transitioning to electric fleets, administering funding, and policy advocacy. San Francisco Bay Ferry/WETA serves as the region's maritime-related regional public transit operator. Other maritime -related local jurisdictions include Port of Oakland, Port of San Francisco, and Port of Richmond. In addition to transit agencies, municipal economic development agencies and workforce development boards will be critical partners in advancing transportation electrification efforts.

**Industry Partnerships and Initiatives:** Industry drives innovation and creates employment opportunities. In transportation electrification, industry is tasked with ensuring goals are met with market-ready solutions. In the Bay Area, Gillig is a key manufacturing partner of electric public transit fleets. The San Francisco Electrical Construction Association (SFECA) already partners with the IBEW on industry advocacy and demand-responsive skill development. Key partners in the maritime

sub-sector include Bay Ship & Yacht, APEX Maritime, Blue & Gold Fleet, and Seaport Industrial Association. The Bay Area High Road Manufacturing Initiative (BAHRMI) is a multi-stakeholder coalition and High Road Training Partnership focusing on aligning advanced manufacturing, battery innovation, zero-emission component production, and clean-tech supply chains with high-wage, unionized job standards and equitable career pathways.

**Education/Training Providers:** Community colleges in the Bay Area are actively developing apprenticeship and training programs in partnership with labor and industry to support the growth of a skilled workforce ready to meet the demands of transportation electrification. These programs can include training in EV maintenance, infrastructure installation, battery systems, and zero-emission transit technologies. Some of the community colleges with existing trainings in this sector include: Peralta Community College, Mission Community College, Santa Rosa Junior College, College of Marin, and Chabot College. At the state university level, Cal Poly Maritime is a key trainer for maritime careers. The Bay Area Community College Consortium will be an important partner for developing pre-apprenticeship and apprenticeship programs in this sector.

**Labor Organizations:** Labor organizations are critical to equipping workers with the required skills to meet industry needs and also advancing worker power and quality jobs. Labor councils across the region and individual unions such as IBEW, Teamsters, Machinists, IBU, and UAW (as well as their associated training institutes) are actively shaping the standards required to keep workers safe and provide employers with the security of a skilled and reliable workforce.

**Economic Development Organizations:** To achieve the electrification of the entire Bay Area transportation sector, it is critical to align regional economic strategies with clean energy and mobility goals. Economic development organizations act as conveners, strategists, and advocates for transportation electrification. Collaboration among various economic development groups is needed to drive equitable and just outcomes, provide incentives and financing, and promote partnerships within the sector. A few economic development organizations with opportunities to advance transportation electrification are: California Transit Works; East Bay Economic Development Alliance (EBEDA); BlueGreen Alliance; Bay Area Council; East Bay Works; and Solano Economic Development Corporation. While not an economic development organization, the Green Empowerment Zone (a statutory regional economic development body established by the State of California) is a key mechanism for streamlining green infrastructure projects, coordinating workforce development, and directing clean technology investments across Northern Contra Costa County.

**Community and Environmental Organizations:** Community-based organizations (CBOs) and environmental organizations play a vital role in advocating for a transition to clean transportation that promotes equity, is community-driven, and benefits the environment. CBOs bridge the gap between policy, technology, and the needs of workers and communities most impacted by climate change and the transition to

clean-energy. In the Bay Area, Canal Alliance, Rising Sun Center for Opportunity, Working Waterfront Coalition, JAMKO Foundation, Greenbelt Alliance, West Oakland Jobs Resource Center, Ridgeline Pathways, and Working Partnerships USA are already committed to representing worker and community voices in transportation electrification spaces. Other leading organizations, like the Center for Transportation and the Environment, provide technical expertise and support with electrified transportation deployment. CBOs vary in focus and a wide variety should be engaged in the sector strategy including organizations based in faith, environmental justice, racial justice, neighborhood and community health, serving students and/or parents, supporting Veterans, reentry, disability, and gender expression and sexuality.

# Resourcing Across the Strategy

The tactics outlined in this Activation Plan fall within the current scope and budget of the Sector Investment Coordinator, with two key exceptions:

- Tactic 4: Requires an estimated $95,000 to conduct a maritime supply-side workforce inventory analysis.
- Post-Contract Operations: Requires an overall operating budget of an estimated $450,000 for three years of work to execute tasks extending beyond the Coordinator's contract term ending September 2026.

The following list of funding sources reflects a snapshot of the most prominent and currently available programs supporting public transit fleet transitions, maritime electrification, and EV charging infrastructure in the Bay Area. The funding landscape evolves rapidly, with new federal, state, and regional programs emerging or rescinding as California and the country adapt to changing needs. While non-exhaustive, this list provides a picture of the types of investments and initiatives already underway and highlights the range of funding that agencies and stakeholders can leverage to support transit and maritime electrification efforts. Continued coordination is necessary for the maximization of public and private resources for the strategies recommended in this Activation Plan.

## Catalyst Award Grants: Transportation Electrification

The High Road Clean Transportation Career Pathways project is designing and piloting a model that promotes equitable access to quality transportation careers for priority communities. West Oakland Jobs Resource Center is the leading organization for this project with a total award amount of $613,672.[45]

## Public Transit Fleets

**State Funding Sources and Incentives**

- California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project
- CARB Clean Fuel Rewards Program
- CARB Hybrid and Zero-Emission Truck and Bus Voucher Incentive
- CARB Innovative Small E-Fleet Pilot Program
- CA State Transportation Agency Transit and Intercity Rail Capital Program (TIRCP)
- CTC Solution for Congested Corridor Programs (SCCP)
- Caltrans Low Carbon Transit Operations Program (LCTOP)
- Caltrans Local Transportation Fund (LTF)
- Caltrans State Transit Assistance (STA)
- Caltrans State of Good Repair Program (SGR)
- CALSTART Clean Mobility Options (CMO)

[45] All Home. "High Road Clean Transportation Career Pathways." 2025. https://www.allhomeca.org/catalyst-projects/high-road-clean-transportation-career-pathways/

- CEC Clean Transportation Program

**Example Cost Estimates for Local Bus Fleets**

| Agency | Description | Total |
|---|---|---|
| Santa Clara Valley Transportation Authority[46] | Depot-charged battery electric buses (estimates for 430 buses).<br>• Vehicle cost: $550M<br>• Infrastructure cost: $300M<br>• Annual Fuel and Maintenance: $35M | $885M |
| Sonoma County Transit Projected Fleet Replacement Costs[47] | Total number of buses to purchase: 76<br>Number of ZEB purchases: 64 | $50.8M |
| AC Transit[48] | Number of buses: 178<br>Infrastructure Cost: $255M<br>Technology Cost: $407M | $662M |

**Capital and/or Operation Cost Estimates for Workforce Development**

- AC Transit's transition from the existing Training and Education Center to the Zero Emission Bus University will cost a total of $18 million. ZEBU is being funded through the Federal Transit Administration's 2023 Bus and Low- and No-Emission Grant Awards, which also dedicates $1.275 million for workforce development.[49,50]

**FTA Low- and No- Emission Grant Program Funds for Workforce Development**

The FTA Low- and No- Emission grant program allows, and in some cases requires, agencies to set aside a portion of their federal grant funds for workforce development activities like retraining, apprenticeships, and joint labor-management training. How much is required depends on the type of project: zero-emission projects must set aside 5%, while low- and standard-emission projects may optionally set aside .5%. In the Bay Area, if every awarded agency were to invest their .5% of low- and standard-emission funds (total of $682,632.52) and 5% of zero-emission project funds ($2,405,234.45), the region could see upwards of $3,087,867million in

[46] "Zero-Emission Bus Blueprint." Santa Clara Valley Transportation Authority. 2024. https://www.vta.org/sites/default/files/2025-04/VTA_ZEB_Blueprint_0.pdf
[47] Innovative Clean Transit Zero-Emission Bus Rollout Plan." "Sonoma County Transit. 2023. https://sctransit.com/wp-content/uploads/2023/06/Sonoma-County-Transit-Zero-Emission-Bus-Rollout-Plan.pdf.
[48] "Zero Emission Bus Transition Plan." AC Transit. 2022.https://www.actransit.org/sites/default/files/2022-06/0162-22%20ZEB%20Transition%20Plan_052022_FNL.pdf
[49] "AC Transit Receives Coveted 2023 Bus and Low-and No-Emission Grant Award." AC Transit. 2023. https://www.actransit.org/press-release/ac-transit-receives-coveted-bus-low-no-grant-awards.
[50] AC Transit. "Zero Emission Program." 2025. https://www.actransit.org/zeb.

investments toward transit workforce development and training. See Appendix A for additional details.

## Maritime

**Existing Investments**

| Agency | Description | Total |
|---|---|---|
| Port of Oakland | EPA Clean Ports Program grant[51] | $322M |
| Port of Oakland | EPA Clean Heavy-Duty Vehicle Grant[52] | $10.5M |
| Port of San Francisco | EPA Clean Ports Program grant Additional funding from: Regional Measure 3, state, federal, City and County of San Francisco, and private sources.[53] | $126.3M |
| San Francisco Bay Ferry (WETA) | Federal Transit Administration grant. Additional funding from local, state, and federal agencies for Rapid Electric Emission-Free Ferry Program.[54] | $220M |
| San Francisco Bay Ferry (WETA) | Electric fleet and shoreside infrastructure[55] | $130M |
| Angel Island-Tiburon Ferry Company | CARB grant[56] | $24M |
| Port of Oakland | PIDP Outer Harbor Terminal. Wharf rehabilitation and utility upgrades expanding the port's capacity for zero-emissions freight operations. | $50M |

[51] "Port of Oakland Awarded Historic $322 million EPA Grant." Port of Oakland. 2024. https://www.portofoakland.com/port-of-oakland-awarded-historic-322-million-epa-grant

[52] "Port of Oakland Set to Receive $10.5M Vehicle Electrification Grant from U.S. Environmental Protection Agency." Port of Oakland. 2024. https://www.portofoakland.com/port-of-oakland-set-to-receive-10-5m-vehicle-electrification-grant-from-u-s-environmental-protection-agency#:~:text=Port%20partners%20with%20United%20Parcel,Heavy%2DDuty%20Vehicle%20grant%20program.

[53] "Mayor London Breed Announces $55 Million Federal Grant to Advance the Country's First High Speed Zero-Emission Ferry Service in San Francisco." Office of Former Mayor London Breed. 2024. https://www.sf.gov/news--mayor-london-breed-announces-55-million-federal-grant-advance-countrys-first-high-speed-zero.

[54] "SF Bay Ferry Receives $67 Million Federal Grants for Electric Ferries and Mission Bay Landing." San Francisco County Transportation Authority. 2024. https://www.sfcta.org/blogs/sf-bay-ferry-receives-67-million-federal-grants-electric-ferries-and-mission-bay-landing.

[55] "Bay Area Regional Plan." Bay Area Jobs First Collaborative. 2024.

[56] "Tiburon gets $24M Grant to Electrify Angel Island Ferries." Marin Independent Journal. 2024. https://www.marinij.com/2024/05/19/tiburon-gets-24m-grant-to-electrify-angel-island-ferries/

| | | |
|---|---|---|
| Mare Island - Vallejo | Strengthen innovation, expand workforce development and curriculum, and improve coordination across the Bay Area Region's shipbuilding network | $8.2M |
| Port of Richmond | Richmond Green-Blue New Deal envisions a maritime manufacturing hub at the Port of Richmond | $375M |
| Bay Area Air Quality Management District | Port Emission Reduction and Electrification Program | $20M |

## EV Charging Infrastructure

**Funding Sources – Regional**

- MTC Transportation Electrification Initiatives
- MTC Transit Station Public Charging Program
- BAAD (formerly BAAQMD) Carl Moyer Program & Community Air Protection Incentives Program
- BAAD (formerly BAAQMD) Charge! Program
- Volkswagen Diesel Emissions Environmental Mitigation Trust

**Funding Sources – State**

- Charging and Fueling Infrastructure Program (Caltrans)
- CEC Alternative and Renewable Fuel and Vehicle Technology Program
- Electric Program Investment Charge (EPIC) Program

**Funding Sources – Federal**

- National Electric Vehicle Infrastructure Formula Program (Department of Energy)

# Goals and Metrics Across the Strategy

The goals of the Activation Plan are to build on the surge of investment and momentum in transportation electrification, scale up existing workforce development strategies, and address uncertainty around whether the skilled workforce can meet growing demand. Each strategy is time-bound and deliverable-focused. The Sector Investment Coordinator will provide executive and policy development support to each group throughout the duration of the contract term.

## Short-term Goals (1-5 years)

1. Policy adoption of sub-sector-specific frameworks, working agreements and labor standards.
    a. Metric: Implementation of regional table in fleet transition and maritime, and contribution to outlining labor standards in charging infrastructure.
    b. Metric: High participation across entities in all nine counties.
2. Established and clear career pathways in high-growth occupations for disadvantaged communities, especially justice-impacted workers.
    a. Metric: Identify high-growth, quality occupations—described by the California High Road Training Partnership (HRTP) framework as providing family-sustaining wages and clearly defined career pathways, among other metrics—and link to skills impacted by TE.
3. Policy wins to establish job quality and certification standards for EV maintenance and installation.

Progress will also be measured in participation levels for the various committees, working groups, and convenings outlined across the strategies. County, city, transit agency, and workforce partner (college, labor union, training program, community organization) involvement is essential to the development of quality jobs across the transportation electrification sector. Short-term reporting will be conducted as part of the quarterly reports made by the Sector Investment Coordinator to the Bay Area Jobs First Collaborative regional convener.

## Long-term Goals (5-10 years)

1. Region-wide alignment on and shared investments in workforce strategies and job quality standards.
2. Diverse worker utilization in the transportation electrification sector - tracked and shared across the region.
3. Robust, skilled workforce in the transportation electrification sector attracts new businesses to the region and helps grow existing businesses in manufacturing, construction, offshore wind supply chain, and other relevant clean energy sectors.

Longer-term metrics include job creation, wages in targeted occupations, and agency adoption of recommended region-wide policies. The strategy should

result in established and clear pathways in high-growth occupations for disadvantaged communities. Diverse worker utilization in the sector should be tracked and shared by employers.

# Dependencies and Challenges

## Federal challenges to demand-side drivers

California has been granted unique authority to set more stringent emissions standards than those mandated by the federal Clean Air Act. This authority is obtained through waivers from the U.S. Environmental Protection Agency (EPA). The Trump administration initially rescinded California's waiver authority, but it was reinstated under President Joe Biden. In May 2025, Congress passed resolutions using the Congressional Review Act (CRA) to block California's clean car waivers from the EPA, breaking with decades of precedent that exempted these waivers from CRA review. President Trump signed these resolutions in June, prompting California's Attorney General to sue the Trump administration.[57] On June 20, 2025, the Supreme Court ruled that oil and gas companies could challenge California's waiver authority. This decision "is set to unravel one of the key tools used to curb planet-heating emissions."[58] Most recently, on September 2026, California Attorney General Rob Bonta obtained a preliminary injunction preventing the EPA from altering the status of the state's Clean Air Act waivers as enacted during the Trump administration.[59] While CARB's ability to set public transit agency electrification mandates has not overtly been affected by the federal challenges, the rapid shifts in the regulatory landscape have led to uncertainty in the ZEV market and eroded the perception of the inevitability of the electric transition.

## Federal challenges to supply-side strategies

The executive orders issued in early 2025 have had a chilling effect on federally funded workforce training and apprenticeship programs, particularly those designed to promote access and equity. Executive Orders 14173 and 14151 have rolled back decades of federal support for Diversity, Equity, and Inclusion (DEI) efforts by eliminating mandates for affirmative action and directing agencies to cease promoting DEI based on protected characteristics. As a result, organizations receiving federal contracts or grants—including those administering workforce training and apprenticeship initiatives—now face heightened scrutiny and legal uncertainty. These actions are hindering efforts in workforce development to address deep and pervasive inequities and

[57] "'Assault on California Continues': Governor Newsom Sues Trump Over Illegal Attempt to Revoke State's Clean Air Policies." Governor Gavin Newsom. 2025. https://www.gov.ca.gov/2025/06/12/assault-on-california-continues-governor-newsom-sues-trump-over-illegal-attempt-to-revoke-states-clean-air-policies/

[58] "Fuel Firms can Challenge California's Emission Limits, Supreme Court Rules." The Guardian. 2025. https://www.theguardian.com/us-news/2025/jun/20/supreme-court-ruling-california-emission-limits

[59] Office of the Attorney General Rob Bonta." Attorney General Bonta Secures Preliminary Injunction in Lawsuit Challenging Trump Administration's Attack on Clean Air Act Waivers." 2026. https://oag.ca.gov/news/press-releases/attorney-general-bonta-secures-preliminary-injunction-lawsuit-challenging-trump

opportunity gaps for underrepresented populations in numerous industry sectors including construction, manufacturing, and public sector.

## Unpredictable tariff policies and stalled federal grantmaking

The freezing of federal funds by the Department of Energy, the EPA, and the Department of Transportation is significantly delaying investment in zero-emission heavy-duty vehicle manufacturing and charging infrastructure. Key grant programs supporting electric trucks, charging stations, and clean school buses have been halted or suspended, creating uncertainty and slowing progress on critical decarbonization goals. These actions diminish incentives for manufacturers and developers to invest in clean transportation technologies, potentially weakening supply chains, hindering job creation, and stalling emissions reduction efforts. Additionally, ongoing federal tariff policies pose risks for vehicle manufacturers—even those producing domestically—as many components are still sourced from international suppliers.

## Addressing job quality and skills match in transportation electrification

One key challenge in the transportation electrification sector is addressing shifting job skills and requirements amid rapid industry transition. Stakeholders emphasized the urgent need to assess the emerging skills needs within the public transportation sector related to the transition to electrification. To address this, stakeholders suggest implementing early interventions that establish effective training standards for the incumbent workforce, along with opportunities to replace retiring workers with younger workers ready and able to pivot into these transit careers. As the sector expands, the region must quickly develop a clear understanding of workforce needs and identify priority occupations that would benefit from high-road training partnerships. Without intentional planning, there is a risk that job and demand for new skills may outpace the development of pathways tied to these occupations.

## Public sector constraints

Public sector transit agencies, cities, counties and ports face a complex set of financial and operational challenges in transitioning to zero-emission transportation infrastructure with funding uncertainty adding significant pressure. For transit agencies, high upfront cost of ZEVs—still substantially more expensive than internal combustion engine vehicles—remains a major hurdle, especially as price declines have not materialized as quickly as expected.[60] In addition, agencies must invest heavily in new charging or fueling infrastructure, and account for changes in operations, maintenance, and workforce training needs, particularly around specialized electronic systems and diagnostics. Many agencies also lack the technical expertise, staffing capacity, and established workforce development programs necessary to

[60] Stakeholder interview.

support this transition. Recent and potential federal funding cutbacks further exacerbate these challenges, limiting access to grants and support programs that many agencies rely on to meet transition goals. Public sector owners and operators are also grappling with managing added labor and contracting mandates, often without updated internal policies or resources to ensure compliance. To support a just and timely transition, regional workforce strategies must be aligned with flexible, clear, and adaptive policies that reflect current economic and political conditions.

## Systemic barriers facing workers

Underrepresented workers face a range of systemic and structural challenges in accessing employment opportunities in the transportation electrification sector. A major barrier is the lack of standardized training across electrification technologies, particularly for maintenance, operations and infrastructure installation, where safety risks are high and skills requirements are evolving rapidly. Many workers have limited exposure to these emerging careers, making recruitment difficult, especially for women and system-impacted individuals. Union and employer partnerships have yet to fully address gaps in representation. Additionally, there are few clear pathways into unionized, high-road careers, with limited access to pre-apprenticeships or apprenticeships in specialized areas like vessel electrification, port logistics, and EV repair. Broader issues such as lack of affordable housing, transportation challenges, shifting nature of work and new skills needed, and insufficient employer supports further compound barriers to access. To ensure equitable access, stakeholders stress the need for deep investments in training, earn-while-you-learn programs, childcare supports for trainees, structural labor standards (like labor peace agreements), and policy solutions that prioritize justice-impacted and underrepresented workers in the green transition.

# TACTICAL WORKPLAN

## Strategy 1: Develop a regional workforce table for zero-emission transit fleet workforce and procurement.

Establish a regional table—including public transit agencies, workforce development boards, workforce partners and trainers—to align on procurement strategies, workforce investments, and targeted hiring practices to support the transition to zero-emission fleets. This table will work towards maximizing resources for the region to expand access to quality jobs for underrepresented communities.

### Tactic 1: Regional zero-emission transit fleet planning and coordination.

#### Purpose

Following CARB's 2018 Innovative Clean Transit regulation, transit agencies across the region have been pursuing concurrent ZEB fleet transitions, yet there is little coordination among agencies on standardizing procurement, fleet types, workforce training, and hiring strategies. Coordination will help agencies raise standards in job quality, scale up capacity to train and hire workers from disadvantaged communities, and build standardized reskilling and upskilling training programs in maintenance and operations to the benefit all agencies. This strategy aims to align the public transit ecosystem and establish one common approach to procurement and labor standards related to the fleet transition.

A coordinating body of public transit agencies will identify, establish, and adopt best practices in procurement, training, and hiring standards. A regional framework can align procurement and workforce engagement across the entire system from made-in-California fleet acquisition to reskilling current workers and expanding local hiring and training partnerships. Through a regional table, agencies will commit to working collaboratively, sharing resources, and developing pathways to support workers in accessing and staying in high-quality careers.

#### Program design

**Co-create with public agencies:** To build a regional table that is collaborative and diverse, key stakeholders must be invited and convened to establish working agreements. A critical early step will be for the coordinating body to produce working agreements that outline a shared regional strategy, guiding principles, scope of influence, and membership and participation expectations. This document should be practical and easy to follow, given that the working agreements will guide collaboration among multiple agencies.

The working agreements will be guided by shared goals focused on leveraging public procurement and funding to expand access to quality jobs in the transportation electrification sector. Building on existing regional strengths and identified workforce challenges from the ZEB Workforce Sessions held by the Sector Investment Coordinator, the regional table will identify key practices that, when implemented, establish a consistent approach to workforce development. This coordinated effort will help scale workforce capacity and support the creation of high-quality jobs over the next 5 to 10 years.

**Establish core practices:** As part of the regional framework, agencies will identify and adopt four to six core practices that can be implemented consistently across jurisdictions and partners that promote an equitable approach to workforce development. These practices may include:

1. **Establishing procurement policies** to encourage purchase of California-made vehicles, especially from firms with high-road training and labor practices.
2. **Establishing shared goals and metrics** for increasing workforce diversity, particularly in fleet transition strategies.
3. **Setting aside dedicated funding** for workforce training and supportive services to ensure long-term system investment.
4. **Implementing community workforce agreements** in partnership with local training providers, community-based organizations, and community colleges.
5. **Embedding local hire and targeted hire policies** into labor agreements and contractor standards to prioritize equitable access to job opportunities.
6. **Conducting regular reporting on workforce outcomes**, disaggregated by occupation, race, gender, and geography, to track progress and guide resource allocation. This may include ongoing collaboration as a regional entity.

**Agency buy-in and community-labor support:** Agency buy-in across the region will be essential for regional collaboration. Each of the 27 regional transit agencies has its own approach to meeting fleet electrification requirements, a distinct workforce development ecosystem, and a unique orientation towards establishing labor standards. The regional table will work toward establishing a common framework, but each agency and county will require tailored tactics—whether establishing new labor agreements or improving existing ones, redistributing workforce training dollars toward key strategic interventions, or shifting resources to meet particular fleet training requirements. This regional collaboration and resulting framework can also coordinate funding streams (e.g., MTC funds and local workforce development resources) to support scaling capacity for

planning, procurement, training, and supportive services. Participation and input will include labor and apprenticeship coordinators, community organizations, and workforce training partners. A model framework used for construction careers at Oregon Metro is included in Appendix F.[61]

In addition, implementation plans must include a commitment to regular regional reporting, with a focus on tracking disadvantaged worker participation and workforce investment outcomes. This transparency and accountability will be essential to ensuring consistent application of the working agreements and achieving the broader goals of regional workforce coordination and equity.

### Team

Each county should have transit, non-transit, and workforce board representation on the coordinating body. EV and workforce coordinators from every large transit agency should be on the committee, with an emphasis on agencies with large bus fleets. Targeted recruitment of smaller transit operators in rural counties is necessary. As a cross-regional coordinating entity, MTC should be at the table. The Sector Investment Coordinator will transition all historical notes, data, and key workforce insights to the regional table.

### Costs

Costs related to administering the committee and gathering buy-in from transit agencies and workforce partners fell within the Sector Investment Coordinator scope of work. Additional funding is needed to formalize the regional table, facilitate and plan meetings, and prioritize the interests and needs of the group. By replacing informal, ad-hoc planning with a centralized governance framework across nine Bay Area counties, this investment will pool regional resources, map long-term labor demand, and maximize multi-million-dollar training assets like the Zero Emission Bus University (ZEBU). This work builds on the coordination and findings from the ZEB Workforce Sessions held by the Sector Investment Coordinator. The regional table will build upon leveraging ZEBU fully operational by 2028/2029.

### Potential Metrics

- Number of counties, cities, and transit agencies participating and must include agencies with the largest scale of investments in ZEV transitions (SFMTA, AC Transit, etc.) representing at least 50% market share of fleet transition public investments.
- Delivery of working agreements endorsed by participating agencies and workforce partners.

[61] In using non-California models, practitioners must be mindful of restrictions on targeted hire imposed by the California Civil Rights Initiative ("Prop 209").

- Number of agencies and workforce partners committed to participating in the regional table and adopting the shared framework and align internal policies and investments. Agency number should represent at least 50% of all jobs accounted for in public transit fleet transition.
- Training collaborations identified and incorporated into workforce agreements for at least 5 counties in region.
- Development of cross-agency shared training facilities.
- Number of disadvantaged workers gaining access to zero-emission fleet workforce programs.
- Number of graduates of target programs; number of job placements for graduates at local transit agencies.
- Amount of new or reallocated funding for workforce programs.

### Tasks:

| Task | Responsible Party | Timeline | Status |
|---|---|---|---|
| 1. (a) Identify all public agencies with fleet purchases or transitions within the next five years; compile fleet plans, procurement policies, workforce partnerships, and labor agreements. (b) Assess number of jobs impacted per plan to establish overall labor market impacts. (c) Establish shared timeline for fleet transition for entire region. | Sector Investment Coordinator | Jul 2025 | 1a. Completed<br>1b. In Progress<br>1c. Not Started |
| 2. Launch and complete transit fleet workforce inventory. Share Findings with broader transit stakeholders (Tactic 2). | UCLA Labor Center/CEC, Sector Investment Coordinator in supporting role | Jun 2026 – Dec 2027 | In Progress |
| 3. Recruit agency personnel, workforce trainers, labor leaders, and community groups to join partnership. | Sector Investment Coordinator | Jan 2026 - Jul 2026 | Completed |
| 4. Recruit co-chairs among interested partners. | Sector Investment Coordinator | Jun – Dec 2026 | In Progress |
| 5. Collaborate with AC Transit to align the regional table's goals with ZEBU's launch. | Co-chairs or Sector Investment Coordinator | Aug 2027 – Dec 2028 | Not Started |

| | | | |
|---|---|---|---|
| 6. Co-develop framework elements and topics for coordinating meetings (e.g., procurement, labor policies, targeted hire, workforce partnerships). | All members, led by Co-chairs, and Sector Investment Coordinator | Jan 2026-Dec 2027 | Ongoing |
| 7. Develop common framework. | All members, led by Co-chairs or Sector Investment Coordinator | Jan - Mar 2027 | Not Started |
| 8. Advocate for agency adoption of region-wide policy (align with budget processes across agencies). | All members | Oct - Dec 2027 | Not Started |
| 9. Revise relevant agency policies and agreements. | All members | Jan – Jun 2028 | Not Started |
| 10. Report on hiring data and framework policy impacts. | All members | Ongoing | Not Started |

## Tactic 2: Transit fleet workforce demand inventory.

### Purpose

There is no cross-cutting demand analysis of the job impacts of fleet transitions in the Bay Area. From quantitative and qualitative information gathered, most transit agencies are not anticipating a significant growth in new jobs, but rather a reskilling of their existing workforce. The region needs an inventory of training requirements and skill competencies (including OEM certifications) required to meet the demands of transition to electric fleets. UCLA in collaboration with the Governor's Office of Business and Economic Development (GO-Biz) are leading the development of a ZEB Workforce Roadmap. This effort focuses on identifying key training and operational priorities to prepare California's transit workforce for battery-electric and hydrogen fuel-cell deployments while safeguarding existing jobs. Additionally, UCLA Labor Center's EVSE workforce assessment is currently compiling workforce data for charging infrastructure. These efforts will help transit agencies identify training needs, and scale training programs and partnerships. To compliment this work, the region could benefit from an inventory of existing and upcoming workforce development funding sources to support with resourcing the recruitment, reskilling or upskilling, and retention of the public transit agency workforce. Any inventory of workforce resources and needs should also consider jobs impacts on disadvantaged and underinvested communities across the region.

The Sector Investment Coordinator identified the need for this study and reviewed existing statewide efforts already underway. Through this

approach, the Sector Investment Coordinator collaborated with Bay Area transit operators and partners to provide input and ground-truth data, share key stakeholder networks, and offer ongoing support throughout the process. The future regional coordinating body will benefit from immediate access to this workforce baseline—including findings from the UCLA Labor Center's EVSE study (anticipated January 2027) and ZEB Workforce Roadmap—to inform and advance its strategic goals.

### Program design

This tactic will require in-depth information gathering and sharing. This work can be a part of the regional coordinating body's scope of work. The data will support with identifying high-demand, high-quality jobs with clear advancement opportunities and define career pathways for disadvantaged workers to access these roles.

### Team

The regional coordinating body will work together to shape and gather the data needed. The Sector Investment Coordinator or Co-chairs will manage and guide data gathering and sharing while coordinating with UCLA Labor Center, the Governor's Office of Business and Economic Development (GO-Biz), and the California Energy Commission to align priorities and prevent duplicative efforts.

### Costs

The regional coordinating body or Sector Investment Coordinator will use existing resources to gather information. There is a need to ensure transportation electrification sector stakeholders are able to gather and learn of preliminary findings and offer on-the-ground insight to help the UCLA research team further refine their final reports.

### Potential Metrics

- Delivery of data with occupational and demographic profiles.
- List of priority skills and occupations for training and workforce investments.
- Map of workforce demand for fleet transition plans per agency/geography, establishing understanding of which efforts are driving the labor market.
- Inventory of workforce development funding sources and training programs.
- Inventory of current job vacancies related to this sector among public agencies/private contractors, with analysis of shared characteristics of these occupations and skills needed to fulfill these roles.

### Tasks:

| Task | Responsible Party | Timeline | Status |
|---|---|---|---|
| 1. Compile workforce inventory or identify workforce information needs. | Sector Investment Coordinator | Jul 2025 - May 2026 | Completed |
| 2. Support data gathering through transportation electrification convenings, and relationships with Bay Area transit agencies and workforce partners. | Sector Investment Coordinator | Jun - Sep 2026 | Completed |
| 3. Share preliminary analysis with regional coordinating body. | Co-chairs or Sector Investment Coordinator | Spring 2027 | Not Started |

# Strategy 2: Establish a maritime workforce strategy to support industry transition to electrification, growth, and quality jobs.

Establish a shared understanding of the region's maritime sector workforce demand for maritime sector stakeholders including ports, ferry operators, employers, unions and workforce partners. This consensus will serve as the north star for future workforce investments and targeted hiring strategies supporting the electric transition of maritime industries. A shared baseline will help highlight gaps in access to quality jobs for disadvantaged communities across key functions, including construction, production, operations, and maintenance.

## Tactic 3: Regional maritime sector planning and coordination.

### Purpose

The Bay Area maritime sector includes large container ports, small commercial ports, marinas, passenger ferries, and the shoreside operations that support these facilities. This sector is disaggregated with a mix of direct public employees and many more contracted and subcontracted workers. The sector requires a fresh approach to building a cohesive effort to invigorate training, job placement, and green job growth across multiple employers and employment types.

The region's ports and maritime-related industries can adopt a shared set of best practices to support port- and harbor-side electrification with robust workforce recruitment and retention. Through coordinated efforts among ports, maritime employers, labor unions, and training partners, stakeholders can collaboratively identify and implement best practices in procurement, training, and hiring standards.

A regional workforce coordination table can serve as a mechanism to build strategic partnerships that strengthen pathways into the top, high-quality occupations in the maritime electrification sector. This regional collaboration will support both the reskilling of current workers and the recruitment of new talent needed to operate electric ships and equipment across the region's ports and marinas.

### Program design

Co-create with maritime employers, unions, and community-based workforce partners: mirroring Tactic 1, the region's port- and maritime logistics-related sectors can benefit from an inventory of workforce demand and supply drivers to identify the top ten occupations expected to grow with the transition to electrification. This study will also include a map of successful programs connecting job seekers to projected in-demand

maritime careers. Moreover, this study will identify gaps in scaling up workforce pathways in key jobs, and outline strategic investments in training infrastructure and wraparound services for job seekers—utilizing a standardized set of best practices in maritime workforce development.

To do this, the region should establish a regional stakeholder table to coordinate on electrification workforce plans. This table should include the region's major ports, ferry operators, marina operators, unions, apprenticeship coordinators, community organizations, training providers, industry representatives, and relevant transportation, distribution, and logistics sub-sectors. This table will develop a regional approach that links an effective workforce engagement strategy to the key occupations outlined in the Maritime Workforce Demand Study, covering local hiring, upskilling, and training pipeline development.

**Codify High-Road Workforce Pathways:** The table will focus on the development of training and placement of disadvantaged workers into quality careers in construction, manufacturing, maintenance, and operations related to sea and port energy transition which may look different across the sector. Practices may include:

1. **Establishing the region's first maritime sector workforce strategy table** to connect stakeholders and employers across maritime subsectors, including vessel operations and maintenance, maritime construction, and shipbuilding.
2. **Establishing shared goals and metrics for increasing workforce diversity**, particularly in the top, quality occupations identified in the demand analysis, and occupations tied to maritime transition strategies.
3. **Setting aside dedicated funding for workforce training and supportive services** to ensure long-term system investment.
4. **Embedding local hire and targeted hire policies** into labor agreements and contractor standards to prioritize equitable access to job opportunities, including access to maritime-related apprenticeship programs.
5. **Conducting regular reporting on workforce outcomes**, disaggregated by occupation, race, gender, and geography, to track progress and guide resource allocation. This may include ongoing collaboration as a regional entity.

These aligned practices will ensure that workforce development investments are equitable, transparent, and impactful—contributing to the long-term growth of a diverse and skilled labor force. The group will develop a shared strategy to scale investments in training pathways and advance policy solutions that reduce barriers for underrepresented workers. This includes outlining clear career pathways and the technical skills needed to enter and

advance in maritime-related fields many of which are often unfamiliar to local communities.

### Team

Each port should have representation at the table. Leadership will be co-chaired by a port and a labor or community-based anchor. Participation from ferry operators, county workforce boards, maritime union representatives, port-adjacent EJ communities, workforce trainers, and logistics employers will be essential. The Sector Investment Coordinator will provide project management, research, and policy development support.

### Costs

Costs related to administering the committee and developing the policy fall within the Sector Investment Coordinator scope of work; however, funding is required for additional research (see Tactic 4). Many workforce training partnerships already exist across the maritime sub-sector; available funding should be leveraged to support regional framework efforts. Workforce funding will vary across geographies but will be necessary to build disadvantaged worker pipelines into maritime jobs.

### Potential Metrics

- Number of ports, operators, workforce partners, unions and employers participating. Must include Port of San Francisco, Port of Oakland, and San Francisco Bay Ferry (WETA) in foundation group.
- Establish regional maritime table with clear workforce framework to address worker barriers, employer challenges, and training and supportive services gaps.
- Number of ports/employers/agencies that adopt shared framework and align internal hiring policies and investments.
- Training collaborations developed around key high-quality occupations.
- Number of graduates of target programs; number of job placements for graduates.
- Amount of new or reallocated funding for workforce programs.
- Increase number of disadvantaged communities entering in key maritime occupations.

### Tasks:

| Task | Responsible Party | Timeline | Status |
|---|---|---|---|
| 1. Identify all maritime agencies and employers investing in electrification transition over next five years. | Sector Investment Coordinator | Jun – Sep 2026 | Completed |

| | | | |
|---|---|---|---|
| 2. Launch and complete demand-side maritime workforce inventory. | Sector Investment Coordinator | Jun – Sep 2026 | Completed |
| 3. Launch and complete supply-side maritime workforce inventory. | Sector Investment Coordinator | Jan – Jun 2027 | Not Started |
| 4. Recruit agency and employer personnel, workforce trainers, colleges, labor leaders, and community groups connected to relevant, high-quality maritime occupations to join partnership. | Sector Investment Coordinator | Jun 2026 - Dec 2027 | Ongoing |
| 5. Recruit co-chairs among interested partners. | Sector Investment Coordinator | Jan - Sep 2027 | Not Started |
| 6. Co-develop strategy topics for coordinating meetings (e.g., training pathways, targeted hire, reducing barriers). | Co-chairs and Sector Investment Coordinator | Oct 2027 - Oct 2028 | Not Started |
| 7. Develop inventory of existing workforce training partnerships, apprenticeships, funding opportunities, and successful models. | Sector Investment Coordinator | Jun 2026 – Aug 2027 | In Progress |
| 8. Develop coordinated regional workforce strategy. | All members, led by Co-Chairs or Sector Investment Coordinator | Nov 2027- Aug 2028 | Not Started |
| 9. Advocate for agency adoption of region-wide policy (align with budget processes across agencies). | All members | Aug – Dec 2028 | Not Started |
| 10. Revise relevant agency policies and agreements. | All members | Aug 2028– Aug 2029 | Not Started |
| 11. Report on hiring data and framework policy impacts. | All members | Ongoing | Not Started |

## Tactic 4: Maritime demand- and supply- side workforce analyses.

### Purpose

To understand the wide array of jobs, skills, and employers in the maritime sector, the region needs both demand-side and supply-side analyses of maritime-related occupations, employers, training programs, and the skills and competencies required. This will help employers, community colleges, training providers, and community organizations anticipate the need for

increased services and recognize the opportunity for high-quality job growth in the sector.

The study should address job growth projections in manufacturing, construction, and operations and maintenance at sea and across working waterfronts in the region. It must also include an understanding of the barriers faced by disadvantaged communities across the full workforce development spectrum, from awareness of these careers, to recruitment, training and retention.

### Program design

This tactic will require in-depth labor market analyses to inform the work of the regional maritime table. The analyses will identify high-demand, high-quality jobs with clear advancement opportunities and define career pathways for disadvantaged workers to access these roles. The study features a two-pronged approach, analyzing both demand-side drivers and supply-side workforce capacity.

### Team

It is recommended for the labor market analyses to be conducted by a firm or agency with expertise in the transportation electrification sector and the 9-county Bay Area, such as an academic labor research institute or economic consultant. The Sector Investment Coordinator or Co-chairs will manage and guide the contracted firm.

### Costs

$95,000 per workforce inventory contract.

### Potential Metrics

- Delivery of study with occupational and demographic profiles.
- List of priority occupations for training and workforce investments.
- Map of workforce demand for port and ferry transition plans per geography, establishing understanding of which efforts are driving labor market.
- Inventory of current job vacancies related to this sector among employers, with analysis of shared characteristics of these occupations and skills needed to fulfill these roles.

### Tasks:

| Task | Responsible Party | Timeline | Status |
|---|---|---|---|
| 1. Produce RFP for demand-side workforce inventory study. | Sector Investment Coordinator | Sep 2025 | Completed |
| 2. Select research contractor. | Sector Investment Coordinator | May 2026 | Completed |

| | | | |
|---|---|---|---|
| 3. Conduct demand-side workforce study. | Selected contractor | Jun – Sep 2026 | Completed |
| 4. Share preliminary demand-side workforce study findings with regional maritime stakeholders. | Selected contractor | Sep 2026 | Completed |
| 5. Approve and publish findings to region. | Sector Investment Coordinator | Oct 2026 | In Progress |
| 6. Produce RFP for supply-side workforce inventory study. | Sector Investment Coordinator | Sep – Nov 2026 | In Progress |
| 7. Select research contractor. | Sector Investment Coordinator | Nov 2026 – Jan 2027 | Not Started |
| 8. Conduct supply-side workforce study. | Selected contractor | Jan – Apr 2027 | Not Started |
| 9. Share preliminary supply-side workforce study findings with regional maritime stakeholders. | Selected contractor | May 2027 | Not Started |
| 10. Approve and publish findings to region. | Co-chairs or Sector Investment Coordinator | Jun 2027 | Not Started |

# Strategy 3: Develop a region-wide labor policy standard for charging infrastructure installation and maintenance.

Establish a regional labor policy standard to ensure contractors receiving public funds for ZEV charging infrastructure commit to local hiring, job quality, and workplace safety. A working group, co-led by a labor union and a major public agency or research institution, will be tasked with developing the policy and promoting its adoption by cities and counties in the region.

## Tactic 5: Support efforts to develop charging infrastructure labor policy.

### Purpose

To ensure public investments in electric vehicle (EV) charging infrastructure deliver equitable economic outcomes, this strategy focuses on helping deliver a standardized regional policy framework centered on job quality, safety, and community access. This tactic supports the development of a regional labor policy standard and community benefit/project labor agreement (CBA and PLA) template that can be adopted across jurisdictions to ensure that contractors receiving public funds for EV charging infrastructure installation and maintenance agree to local hire, job quality, and safe workplace guarantees. A labor standards policy for zero-emission vehicle charging projects could include clear requirements within public contracts that outline expectations for job quality and workplace safety. Additionally, adopting a regional community benefits or project labor agreement template would help ensure that contractors implement projects in alignment with high-road labor standards and establish partnerships with workforce organizations serving underrepresented groups in the region.

Recognizing parallel state and regional initiatives, such as UCLA Labor Center's and the California Energy Commission's EVSE workforce study, the Sector Investment Coordinator will support rather than lead charging infrastructure policy—eliminating duplicate efforts while maintaining focus on the Bay Area's frontline workforce capacity.

### Program design

**Collaborate with unions, employers, and research partners**: Coordinate with unions, employers, and research institutions to gather ground-level workforce insights and bring regional partners into alignment. By connecting public agencies, major contractors, labor, and community organizations, we ensure that information gathering reflects both frontline labor needs and employer perspectives to support high-road policy frameworks across cities and counties.

## Team

The Sector Investment Coordinator will support with information gathering and partner coordination as needed to elevate Bay Area regional context and workforce needs.

## Costs

Costs for supporting the coordination of partners and gathering information fall within the Sector Investment Coordinator scope of work.

## Potential Metrics

- Number of counties, cities, and agencies engaged in coordinated information sharing and regional template alignment.
- Contribution to the delivery of implementable templates.
- Number of Bay Area workforce data captured and successfully integrated into statewide research and policy briefs.

## Tasks:

| Task | Responsible Party | Timeline | Status |
|---|---|---|---|
| 1. Provide high-level overview of state-wide charging infrastructure landscape. | Sector Investment Coordinator | May 2026 | Completed |
| 2. Engage agency personnel, workforce trainers, labor leaders, colleges, and community groups to provide insights on workforce challenges. | Sector Investment Coordinator | Jul 2025 - Sep 2026 | Completed |
| 3. Develop Bay Area charging infrastructure workforce implications memo. | Sector Investment Coordinator | Jul - Sep 2026 | Completed |
| 4. Engage research partners to review charging infrastructure memo and ensure alignment with state-wide findings. | Sector Investment Coordinator | Jul -Sep 2026 | Completed |
| 5. Advocate for public purchaser adoption of region-wide policy. | Sector Investment Coordinator | Jan – Aug 2027 | Not Started |

# Strategy 4: Align training and workforce partner supports across sub-sectors.

Establish a regional forum to support ongoing engagement among training providers, labor unions, colleges, and community-based organizations involved in the transportation electrification sector. This table will serve as a platform to share best practices and align on common policy and funding priorities that advance career pathways in the sector.

The regional forum should encompass all three key sub-sectors— Public Transit Fleets, Maritime and Ports and EV Charging Infrastructure —and focus on sub-sector information sharing, highlighting transportation electrification progress, lessons learned, addressing barriers to access, evaluating shifts in skill demand, and coordinating workforce funding efforts across the region.

## Tactic 6: Develop region-wide mechanism for sharing transportation electrification-related workforce updates.

### Purpose

Transportation electrification is a wide-ranging sector with many different employers, employment types, worksites, occupations, and skill requirements. A strategy that increases quality jobs necessarily leans heavily into training programs and community-based organizations to ensure that high-quality new jobs end up with target populations, and that disadvantaged workers are equipped with the necessary skills to succeed in their careers. This burdens community organizations with maintaining employer relationships, staying abreast of changes to technology, and accessing funds that lower barriers to employment. To alleviate these struggles, the region needs a mechanism that ensures ongoing engagement and coordination across sub-sectors.

The Sector Investment Coordinator modeled the high-road strategy of bringing together trainers, employers, and community-based organizations to discuss workforce barriers for underrepresented populations in the Public Transit Fleet and Maritime and Ports sub-sectors. These gatherings focused on examining misalignments and gaps in the public transit and maritime workforce ecosystem that contribute to inequitable career pathways. For the sub-sector EV Charging Infrastructure, the Sector Investment Coordinator supported UCLA and GO-Biz in convening a diverse group of public transit stakeholders to their ZEB Workforce Development Roadmap Stakeholder Session 3. Similarly, the focus of this session was on training and reskilling pathways for public transit workers navigating the transition to zero-emission fleet operations, while identifying structural barriers across ZEB manufacturing, operations, and maintenance.

Building on these initial subsector convenings, a dedicated cross-sector forum will institutionalize regional coordination, aligning workforce resources to ensure high-quality job access across all transportation electrification pathways.

### Program design

Establish a forum where training providers, unions, colleges, employers, and community organizations from the maritime, transit, and charging infrastructure sectors can exchange lessons learned and highlight best practices for increasing pathways to quality jobs for disadvantage communities. This forum serves as a space to discuss shared strategies around technology shifts, future-of-work trends, targeted hire considerations, and entry barriers for justice-impacted workers.

### Team

The Sector Investment Coordinator or other economic development-focused entities may manage the forum, with involvement from labor unions, apprenticeship coordinators, community-based organizations, community colleges, employers, and other workforce trainers.

### Costs

Costs for coordination falls within the Sector Investment Coordinator scope of work. After the Sector Investment Coordinator contract end date (September 2026), long-term convening and facilitation duties should be taken on by regional economic development entities.

### Potential Metrics

- Active participation from labor unions, apprenticeship coordinators, community-based organizations, community colleges, employers, and other workforce trainers across all three sub-sectors.
- Knowledge exchange seeds collaborations and joint funding to advance targeted strategies for removing barriers faced by key demographic groups.
- New partnerships are established with unions and contractors to build trust and strengthen connections to emerging opportunities.
- Participation is tracked through attendance and engagement metrics.

### Tasks:

| Task | Responsible Party | Timeline | Status |
|---|---|---|---|
| 1. Establish and support the convening of sub-sector specific tables including a diverse set of stakeholders. | Sector Investment Coordinator | Jul 2025-Sep 2026 | Completed |

| | | | |
|---|---|---|---|
| 2. Convene cross-sector transportation electrification stakeholders for sector input and strategy (Powering Opportunity Webinar, Maritime Workforce Demand Study Convening, etc.). | Sector Investment Coordinator | Jul 2025-Sep 2026 | Completed |
| 3. Recruit training providers, unions, and community organizations to join regional cross-sector TE forum. | Sector Investment Coordinator or economic development entity | May 2027 - Dec 2027 | Not Started |
| 4. Establish meeting cadence and outcome goals for each meeting. | Sector Investment Coordinator or economic development entity | May 2027 - ongoing | Not Started |
| 5. Coordinate regular forums including webinars, convenings, meetings, etc. | All members, led by Sector Investment Coordinator or economic development entity | May 2027 - ongoing | Not Started |

Estolano
ADVISORS

# APPENDICES

Estolano ADVISORS

# Appendix A: FTA Low-No Grant Program Workforce Funds

**Fact Sheet:**

## Bay Area Transit Workforce Development: Opportunities Within FTA Bus and Bus Facilities & Low-No Emission Grant Programs

### Background

On November 5th, 2025, the Federal Transit Administration (FTA) announced **$2 billion** in Grants for Buses and Bus Facilities and Low or No Emission Projects for fiscal year 2026, supporting **165 projects in 45 states and D.C.** The FTA Low or No Emission Grant Program (Low-No Grant Program) allows states and local government authorities to purchase or lease zero-emission and low-emission transit buses as well as to acquire, construct, and lease supporting facilities.[62] Both are competitive grants that provide federal resources to states and agencies to replace, rehabilitate, and purchase buses and bus equipment. Grants for Buses and Bus Facilities also fund technological improvements or innovations to modify existing low or no emission fleets and facilities. **The nine county region of the Bay area includes eight transit agencies awarded $184,631,192 million total in Low-No Grants between FY23-25 and have the ability to invest .5%-5%,of these awards, up to an estimated $3,087,867 into local workforce development activities.**

### Eligible Applicant Types

| Bus Grant Program | Low-No Grant Program |
|---|---|
| **Eligible Recipients** | |
| • States (including territories and Washington D.C.)<br>• Local governments<br>• Federally recognized Indian Tribes<br>• All eligible recipients (except Indian Tribes and nonprofits) must allocate funds to or operate fixed-route bus service | • States (including territories and Washington D.C.)<br>• Local government entities<br>• Federally recognized Indian Tribes |
| **Eligible Subrecipients** | |

[62] Federal Transit Administration. (n.d.). *Grants for buses and bus facilities program*. U.S. Department of Transportation. https://www.transit.dot.gov/bus-program

| | |
|---|---|
| • Private nonprofit organizations engaged in public transportation | |

## How to Apply for Funds

The FTA published a joint Notice of Funding because these two grant programs have overlapping eligibilities and must be implemented on the same timeline. The Fiscal Year (FY) 2025 Notice of Funding (NOFO) closed on July 14, 2025. While both grant programs are still active and funded, FY2026 NOFO has not yet been announced. The FTA is expected to add **$518 million in FY2026.**[63]

**Zero-Low Emission Guidelines for Low-No Grant:**

- A minimum of **25%** of total awarded funds will go to low-emission projects. These projects are not required to be completely zero-emission.

Both grants are appropriated and funded through the Infrastructure Investment and Jobs Act (IIJA) for FY2025.[64] The IIJA expires on September 30, 2026, marking the end of its authorized five-year funding cycle. The reauthorization of IIJA will depend on Congress.[65]

## Grant Funds for Workforce

The FTA Low-No grant program allows, and in some cases requires, agencies to set aside a portion of their federal grant funds for workforce development activities like retraining, apprenticeships, and joint labor-management training. How much is required depends on the type of project: zero-emission projects must set aside 5%, while low- and standard-emission projects may optionally set aside .5%. In the Bay Area, if every awarded agency were to invest their .5% of low- and standard-emission funds (total of $682,632.52) and 5% of zero-emission project funds ($2,405,234.45), the region could see upwards of $3,087,867million in investments toward transit workforce development and training.

> **For both grant programs, eligible funds can be applied for workforce development activities, including:**
>
> - Retraining existing transit workforce
> - Eligible apprenticeships
> - Joint labor-management training programs

[63] Federal Transit Administration. (2025, May 14). *FY 2025 notice of funding opportunity: Low or no emission grant program and the grants for buses and bus facilities competitive program*. U.S. Department of Transportation. https://www.govinfo.gov/content/pkg/FR-2025-05-15/pdf/2025-08571.pdf

[64] Federal Transit Administration. (2026, January 15). Announcement of fiscal year 2025 grants for buses and bus facilities program and fiscal year 2025 and 2026 low or no emission program project selections. *Federal Register*, *91*(9), 1856–1861. https://www.federalregister.gov/documents/2026/01/15/2026-00643/announcement-of-fiscal-year-2025-grants-for-buses-and-bus-facilities-program-and-fiscal-year-2025

[65] Federal Highway Administration. (n.d.). *Infrastructure Investment and Jobs Act (IIJA)*. U.S. Department of Transportation. https://highways.dot.gov/infrastructure-investment-and-jobs-act

- 5% (.05) of the Federal request for zero-emissions projects **must** be used for workforce development.
  - This is mandatory unless less funding is needed to carry out the Zero-Emission Fleet Transition Plan.
  - These amounts should be budgeted **in addition to** (not as a take-down from) other eligible project expenses.
  - Applicants must identify proposed use of funds for workforce development activities separately in the project budget.

- For low- and standard-emission projects, **0.5% (.005)** of the Federal request may **optionally** be used for workforce development training.
- An additional **0.5%** may **optionally** be used for training at the National Transit Institute (NTI), which provides training on transit project management, multimodal transportation planning, transit program management compliance, and other related topics.[66]

## 2023 - 2025 Fiscal Year Awardees in Bay Area

Between FY2023 and FY2025, Bay Area transit agencies received a combined **~$184 million** in FTA Low-No and Buses and Bus Facilities Grant Program awards to support zero- and low-emission fleet transitions and related infrastructure.[67,68,69,70] The identified grant awardees in the following table that submitted zero-emissions projects have a workforce development requirement stipulated by the grant.

| FY | Agency | Award | Purpose |
|---|---|---|---|
| **Low-No Grant Program** | | | |
| 2025 | Marin County Transit District | **$5,640,020** | Modernize operations and maintenance building; purchase new hybrid buses to replace older buses. |
| 2025 | San Francisco Municipal Transportation Agency | **$39,800,000** | Purchase new hybrid buses to replace older buses that have reached their useful life. |

[66] U.S. Department of Transportation. (n.d.). *National Transit Institute*. Retrieved September 29, 2026, from https://www.transportation.gov/grants/dot-navigator/national-transit-institute
[67] Federal Transit Administration. (2026, January 20). *FY25 FTA bus and low- and no-emission grant awards*. U.S. Department of Transportation. https://www.transit.dot.gov/funding/grants/fy25-fta-bus-and-low-and-no-emission-grant-awards
[68] Federal Transit Administration. (2024, July 26). *FY24 FTA bus and low- and no-emission grant awards*. U.S. Department of Transportation. https://www.transit.dot.gov/funding/grants/fy24-fta-bus-and-low-and-no-emission-grant-awards
[69] Federal Transit Administration. (2024, July 3). *FY23 FTA bus and low- and no-emission grant awards*. U.S. Department of Transportation. https://www.transit.dot.gov/funding/grants/fy23-fta-bus-and-low-and-no-emission-grant-awards
[70] Federal Transit Administration. (2016, August 29). *Fiscal year 2016 bus and bus facilities projects*. U.S. Department of Transportation. https://www.transit.dot.gov/funding/grants/fiscal-year-2016-bus-and-bus-facilities-projects

| | | | |
|---|---|---|---|
| 2025 | Livermore Amador Valley Transit Authority | **$63,951,145** | Purchase new low-emission diesel-electric hybrid buses to replace older buses and build two operations and maintenance facilities. |
| 2025 | Napa Valley Transportation Authority | **$6,823,698** | Purchase new hybrid buses to replace older buses that have reached their useful life. |
| 2025 | Santa Clara Valley Transportation Authority | **$20,311,640** | Purchase new hybrid buses to replace older buses. |
| **2023 - 2024 Fiscal Year Awardees for Zero-Emission Projects** | | | |
| 2024 | Alameda-Contra Costa Transit District (AC Transit) | **$15,000,000** | Purchase new hydrogen fuel cell buses to replace older diesel buses and expand existing hydrogen fueling facilities. Initiate a workforce development program to train staff on zero-emission bus technologies and improve service and reliability while also improving air quality. |
| 2024 | Western Contra Costa Transit Authority (WCCTA) | **$20,646,189** | Purchase hydrogen fuel cell buses to replace older diesel buses and expand its hydrogen fueling station and maintenance facilities. Provide workforce training to support WCCTA's transition to an entirely zero-emission fleet and improve regional air quality. |
| 2023 | Solano County Transit | **$12,458,500** | Purchase battery-electric buses and charging equipment and develop a workforce development training program to support with converting the entire fixed-route fleet to zero emissions by 2026. |

## Current Status of Low-No Grant Program Workforce Fund Application in the Bay Area

The table below summarizes how transit agencies in the nine-county Bay Area region—specifically those reached by the Sector Investment Coordinator—plan to deploy their Low-No Grant Program workforce funds.[71]

| Agency | Status | Notes |
|---|---|---|

[71] Status of Low-No Grant Workforce Fund usage was identified via email by public transit agency representatives.

| | | |
|---|---|---|
| San Francisco Municipal Transportation Agency (SFMTA) | **Yet to be deployed** | SFMTA has yet to utilize the 0.5% set aside set aside for workforce development. |
| Livermore Amador Valley Transit Authority (LAVTA) | **Pending** | Grant application yet to be executed. Application includes purchase of 8 diesel-electric hybrid buses and $400,000 for National Transit Institute (NTI) training. |
| Napa Valley Transportation Authority (NVTA) | **Utilized partial funding** | Workforce set-side totaled to $513,458 ($317,095 from Low-No Grant and $196,363 local match). Of the total $513,458, NVTA has used $28,454 to provide training for Gillig Corp's battery electric vehicles. NVTA is reserving remaining workforce funds to secure training seats at Alameda-Contra Costa Transit District's Zero Emission Bus University (ZEBU).[72] |

Bay Area transit agencies have secured over $184 million in FTA Low-No Emission Grant Program awards since 2023, with several recipients, particularly those undertaking zero-emissions fleet transitions, carrying mandatory or optional set-asides for workforce development. To date, implementation of these workforce funds has been uneven: some agencies have not yet drawn on their allocation, others are still finalizing applications, and only one has begun deploying funds toward hands-on technical training. As FY2026 funding is finalized and additional zero-emissions awards move into their workforce-development phase, closer regional coordination could help Bay Area agencies more fully and consistently deploy these set-aside dollars toward building a trained transit workforce.

[72] ZEBU is being funded through the Federal Transit Administration's 2023 Bus and Low- and No-Emission Grant Awards, which also dedicates $1.275 million for workforce development.

Estolano ADVISORS

# Appendix B: Job Growth Analysis

## Table 1. Transportation Electrification Occupations

| SOC Code | Occupation | Proj. Job Growth 2022-2032 | 2024 Median Wage | Education Required | Work Exp | On-the-Job Training |
|---|---|---|---|---|---|---|
| **Electrical Power Generation and Installation** | | | | | | |
| 47-1011 | First-Line Supervisors of Construction Trades and Extraction Workers | 1,380 | $103,090 | High school or equiv. | 5+ years | Apprenticeship* |
| 47-2061 | Construction Laborers | 2,490 | $76,150 | No formal credential | None | Apprenticeship* |
| 47-2073 | Operating Engineers and Other Construction Equipment Operators | 470 | $117,350 | High school or equiv. | None | Apprenticeship* |
| 47-2111 | Electricians | 1,780 | $93,750 | High school or equiv. | None | Apprenticeship |
| 47-3013 | Helpers--Electricians | 10 | $56,070 | High school or equiv. | None | Short-term |
| 49-9051 | Electrical Power-Line Installers and Repairers | 110 | $128,470 | High school or equiv. | None | Apprenticeship* |
| 51-8013 | Power Plant Operators | -30 | $118,520 | High school or equiv. | None | Long-term |
| **Production and Maintenance** | | | | | | |
| 11-3051 | Industrial Production Managers | 300 | $163,190 | Bachelor's degree | 5+ years | None |
| 17-3027 | Mechanical Engineering Technologists and Technicians | 70 | $97,800 | Associate's degree | None | None |
| 49-1011 | First-Line Supervisors of Mechanics, Installers, and Repairers | 440 | $100,150 | High school or equiv. | <5 years | None |
| 49-3031 | Bus and Truck Mechanics and Diesel Engine Specialists | 90 | $80,820 | High school or equiv. | None | Long-term |
| 49-3042 | Mobile Heavy Equipment Mechanics, Except Engines | 260 | $92,270 | High school or equiv. | None | Long-term |
| 51-1011 | First-Line Supervisors of Production and Operating Workers | 440 | $83,130 | High school or equiv. | <5 years | None |
| 51-2028 | Electrical, Electronic, and Electromechanical Assemblers** | 340 | $54,700 | High school or equiv. | None | Moderate-term |
| 51-4041 | Machinists | 80 | $66,320 | High school or equiv. | None | Long-term |
| **Transportation Services** | | | | | | |
| 53-1047 | FirstLine Supervisors of Transportation & Material Moving Workers*** | 840 | $72,230 | High school or equiv. | <5 years | None |
| 53-3032 | Heavy and Tractor-Trailer Truck Drivers | 1,910 | $64,210 | Postsecondary non-degree award | None | Short-term |
| 53-3033 | Light Truck Drivers | 3,440 | $49,300 | High school or equiv. | None | Short-term |
| 53-3051 | Bus Drivers, School | -20 | $63,130 | High school or equiv. | None | Short-term |
| 53-3052 | Bus Drivers, Transit and Intercity | 530 | $79,440 | High school or equiv. | None | Moderate-term |
| 53-5021 | Captains, Mates, and Pilots of Water Vessels | 40 | $110,810 | Postsecondary non-degree award | <5 years | None |
| 53-5031 | Ship Engineers | -30 | $143,600 | Postsecondary non-degree award | <5 years | None |
| 53-6031 | Automotive and Watercraft Service Attendants | 90 | $44,210 | No formal credential | None | Short-term |
| 53-7051 | Industrial Truck and Tractor Operators | 180 | $57,250 | No formal credential | None | Short-term |
| 53-7062 | Laborers and Freight, Stock, and Material Movers, Hand | 3,490 | $48,220 | No formal credential | None | Short-term |

Source: California Employment Development Department Long-Term Projections, Bureau of Labor Statistics Occupational Employment and Wage Statistics (OEWS).

Notes: Job growth projections exclude Santa Clara County; wage data excludes Santa Clara, Napa, Solano, and Sonoma counties. *On-the-Job Training designations changed from BLS designation to Apprenticeship based on qualitative research findings.

Estolano ADVISORS

# Appendix C: Demographic Profile for Select Industries

## Table 2. Demographic Profile of Select Industries, Bay Area, 2023

| | Construction Laborers | Electricians | Mechanics | Truck Drivers | All Industries |
|---|---|---|---|---|---|
| *NAICS Industry:* | *2389 - Other Specialty Trade Contractors* | *2382 - Building Equipment Contractors* | *8111 - Automotive Repair and Maintenance* | *4841 - General Freight Trucking* | |
| *Ethnicity* | | | | | |
| Hispanic or Latino | 47% | 37% | 37% | 39% | 24% |
| Not Hispanic or Latino | 53% | 63% | 63% | 61% | 76% |
| *Race* | | | | | |
| White | 84% | 78% | 71% | 62% | 58% |
| Black/African American | 5% | 6% | 6% | 12% | 7% |
| American Indian/Alaska Native | 2% | 2% | 2% | *No Data* | 1% |
| Asian | 5% | 10% | 18% | 23% | 28% |
| Native Hawaiian/Pacific Islander | *No Data* | *No Data* | 1% | *No Data* | 1% |
| Two or More Races | 2% | 4% | 4% | 4% | 4% |
| *Gender* | | | | | |
| Women | 22% | 19% | 26% | 20% | 48% |
| Men | 78% | 81% | 74% | 80% | 52% |

Source: Quarterly Workforce Indicators (QWI), U.S. Census Bureau.

Notes: Demographic profile includes workforce data for nine-county Bay Area. QWI data provides demographic data for industries to the 4-digit NAICS level, and as such, the table above is less detailed than the occupational data shared in Appendix B and includes data for occupations beyond those in the transportation electrification industry. For instance, demographic data for the "Building Equipment Contractors" industry, which includes electricians, also includes data on plumbers. Tactics 2 and 4 recommend a full labor market analysis for more detailed data on the labor force, including worker demographics.

Estolano
ADVISORS

# Appendix D: Maritime Industry Growth Analysis

*The following sections are excerpted from the forthcoming "Maritime Workforce Demand Assessment," which is a study conducted by Estolano Advisors and funded by Tipping Point Community. This study surveys the current state of the Bay Area's maritime industry, identifying the major investments and policy drivers shaping its future, and produces an initial inventory of specific industries and occupations positioned for growth. The anticipated publication date is October 2026.*

## Industry Growth Analysis

The demand drivers described in the preceding section point to a set of maritime-related industries positioned for workforce growth over the coming decades. Lightcast's 2026-2036 employment projections for the nine-county Bay Area show overall modest growth across the maritime-related industries analyzed in this section, but the industries most directly connected to electrification and port modernization are projected to grow significantly. National employment data reinforces this forward-looking picture. At the national scale, the Bureau of Labor Statistics (BLS) projects that installation, maintenance, and repair occupations will grow faster than the 3.1 percent national average between 2024 and 2034, with approximately 608,100 annual openings.[73] The occupations most relevant to maritime, including electricians (+9%), industrial machinery mechanics (+13%), and wind turbine service technicians (the fastest-growing occupation nationally), are all projected to grow at rates well above the national average.

These projections are consistent with a broader dynamic across transportation electrification sectors. A UC Berkeley Law Center for Law, Energy and the Environment analysis of the zero-emission truck transition found that while specific internal combustion engine (ICE) related occupations will decline, the overall employment effect of electrification is projected to be significantly net positive at both the state and national level.[74] The International Council on Clean Transportation estimated that growth in U.S. charging infrastructure alone could support roughly 160,000 new jobs by 2032, with approximately 50% of those jobs being in electrical installation, maintenance, assembly, and general construction.[75] The same dynamics apply to maritime electrification: the construction of shore power systems, vessel charging infrastructure, battery-electric cargo handling equipment, and zero-emission ferry fleets will require electrical trades, marine technicians, and infrastructure construction workers at a scale.

This section identifies the industries most likely to experience sustained demand based on investment signals, regional Lightcast projections, and national occupational data. See **Table 3** for a summary of maritime industries positioned for growth based on investment signals and Lightcast data. These industries span sectors related to port operations and cargo handling; ferry and passenger water transportation; shipbuilding and repair; and electrical infrastructure and construction trades.

---

[73] U.S. Bureau of Labor Statistics, "Installation, Maintenance, and Repair Occupations," *Occupational Outlook Handbook*, accessed June 2026, https://www.bls.gov/ooh/installation-maintenance-and-repair/.
[74] Center for Law, Energy and the Environment, UC Berkeley School of Law, "Zero-Emission Trucks Workforce Transition & Jobs," *Zero-Emission Trucks: A Factsheet Series*, No. 6, August 2025, https://www.law.berkeley.edu/wp-content/uploads/archive/2025/08/6-Zero-Emission-Trucks-Workforce-Transition-Jobs_CLEE-Factsheet-Series.pdf.
[75] International Council on Clean Transportation, "Charging Up America: The Growth of United States Electric Vehicle Charging Infrastructure Jobs," January 2024, https://theicct.org/publication/us-ev-charging-infrastructure-jobs-jan24/.

**Table 3:** Maritime Industries Positioned for Growth

| NAICS Code | Industry Title | Overview | Relevant Occupations |
|---|---|---|---|
| 4883 | Support Activities for Water Transportation | Port and harbor operations, marine cargo handling/stevedoring, tugboat and pilot services, vessel maintenance | Equipment operators, cargo handling workers, maintenance workers, industrial machinery technicians |
| 4841 | General Freight Trucking | Local and long-distance freight hauling, including drayage between ports and inland distribution points | Drayage truck drivers, dispatchers and logistics coordinators, diesel/EV fleet mechanics, freight loading workers, fleet managers |
| 4831 | Deep Sea, Coastal, and Great Lakes Water Transportation | Ferry operations, coastal freight and passenger water transportation | Licensed vessel operators, ship engineers, deckhands, maintenance technicians |
| 3323 | Architectural and Structural Metals Manufacturing | Structural steel fabrication, plate work, and metal framing for vessels, port infrastructure, and marine facilities | Welders, structural metal fabricators, machinists, sheet metal workers, first-line supervisors of production workers |
| 2382 | Building Equipment Contractors | Electrical contractors installing charging stations, shore power systems, and vessel electrical systems | Electricians, solar photovoltaic installers |
| 2371 | Utility System Construction | Construction of power lines, substations, solar installations, and battery storage systems at maritime facilities | Power line installers and repairers, construction equipment operators |
| 2211 | Electric Power Generation, Transmission and Distribution | Microgrids, shore power systems, and power distribution infrastructure at ports and terminals | Power plant operators, electrical engineers, power line installers, solar photovoltaic installers, electricians |
| 2379 | Other Heavy and Civil Engineering Construction | Pier, wharf, and dock construction, pile driving, and waterfront infrastructure development | Crane operators, construction laborers, pile driver operators, operating engineers |

*Source: Lightcast*

## Quality Maritime Occupations

This section builds on the growing maritime-related industries identified above by identifying occupations within those industries that meet quality job criteria established for this study:

- Strong **growth** potential;
- Competitive **wages**;[76]
- **Accessible** entry that does not require a four-year degree; and

[76] Bay Area Equity Atlas, "Median Earnings, Nine-County Bay Area," accessed June 24, 2026, Bay Area Equity Atlas.

- Relevance to the maritime **electrification** transition.

Quality job criteria for this study were adapted from the California High Road Training Partnership (HRTP) framework, which defines quality jobs as providing family-sustaining wages and clearly defined career pathways, among other metrics. Occupations were assessed against four criteria: strong growth potential based on investment signals and current employment; competitive wages at or above $35 per hour, the 75th percentile of the regional median and average for maritime occupations not requiring a four-year degree; accessible entry without a four-year degree requirement, consistent with the HRTP framework's emphasis on career pathway accessibility; and relevance to the maritime electrification transition, reflecting this study's focus on TE as the primary driver of near-term maritime job growth in the region.[77,78]

See **Table 4** for a summary of occupations meeting these criteria.

**Table 4**: Quality Bay Area Maritime Occupations

| Occupation | SOC | NAICS | Employment | | | Median Wage | Typical Entry Level Education |
|---|---|---|---|---|---|---|---|
| | | | 2026 | 2036 | % Change | | |
| Port Operations and Cargo Handling | | | | | | | |
| Mobile Heavy Equipment Mechanics, Except Engines | 49-3042 | 4883 | 195 | 214 | 10% | $43 | High school or equivalent |
| First-Line Supervisors of Mechanics, Installers, and Repairers | 49-1011 | 4883 | 106 | 120 | 13% | $48 | High school or equivalent |
| Heavy and Tractor-Trailer Truck Drivers | 53-3032 | 4883 | 58 | 65 | 12% | $31 | Postsecondary nondegree award |
| Ferry and Passenger Water Transportation | | | | | | | |
| Sailors and Marine Oilers | 53-5011 | 4831/4883 | 346 | 358 | 3% | $34 | None |
| Captains, Mates, and Pilots of Water Vessels | 53-5021 | 4831/4883 | 276 | 292 | 6% | $52 | Postsecondary nondegree award |
| Ship Engineers | 53-5031 | 4831/4883 | 85 | 85 | 0% | $68 | Postsecondary nondegree award |
| Electrical Infrastructure and Construction Trades | | | | | | | |
| Electricians (Contractors/Charging) | 47-2111 | 2382 | 13,047 | 13,849 | 6% | $44 | High school or equivalent |
| Construction Laborers | 47-2061 | 2379 | 424 | 372 | -12% | $35 | None |
| Electricians (Utility Construction) | 47-2111 | 2371 | 144 | 146 | 4% | $44 | High school or equivalent |

[77] California Workforce Development Board, "The California High Road: A Road Map to Job Quality," accessed June 25, 2026, HRTP.
[78] Bay Area Equity Atlas, "Median Earnings, Nine-County Bay Area," accessed June 24, 2026, Bay Area Equity Atlas.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Electricians (Power Generation & Distribution) | 47-2111 | 2211 | 36 | 75 | 111% | $44 | High school or equivalent |
| Shipbuilding and Repair | | | | | | | |
| Welders, Cutters, Solderers, and Brazers | 51-4121 | 3323 | 474 | 451 | -5% | $31 | High school or equivalent |
| Structural Metal Fabricators and Fitters | 51-2041 | 3323 | 142 | 114 | -19% | $30 | High school or equivalent |

*Source: Estolano Advisors, Lightcast*

Estolano ADVISORS

# Appendix E: Interview and Engagement List

| Agency/Organization | Sub-sector | Name |
|---|---|---|
| AC Transit | PT, CI | **Emily Williams**, Chief Transit Administration Officer**<br>**Marvin De Leon**, Training and Education Assistant Manager<br>**Michael Flocchini**, Director of Training and Workforce Development**<br>**Phillip Haley**, former Interim Director, Civil Rights and Compliance |
| Amalgamated Transit Union (ATU) International | PT, CI | **Jamaine Gibson ("G")**, Director of Apprenticeships |
| Alameda County Workforce Development Board | PT, M | **Carmelo San Mames**, Sr. Strategic Partnership Manager<br>**Latoya Reed-Adjei**, Alameda County Workforce Development Board<br>**Nia Ford**, Workforce Services Specialist** |
| BAM Consulting | PT, CI | **Vikrant Sood**, Principal |
| Bay Area Community Colleges | PT | **Mark Martin**, Regional Director for Advanced Manufacturing<br>**Pamela Gutman**, Regional Director, Advanced Transportation and Logistics |
| Bay Area Community College Consortium | N/a | **Kit O' Doherty**, Co-Chair |
| Bay Ship and Yacht | M | **Joel Welter**, Chief Naval Architect |
| Blue & Gold Fleet | M | **Kent McGrath**, Vice President |
| California Transit Works | PT | **Rob Gamble**, Former Director of Business and Workforce Development at Mission** Community College**<br>**Peter Simon**, College Administrator<br>**Deborah Moy**, Co-Founder and Organizational Strategist, Balance.point Strategic Services<br>**Rich Hibbs**, former Director of Bus Operations at Golden Gate Transit (GGT)<br>**Susan Yates**, Transportation Instructor, Mission College<br>**Robert Hannibal**, Southern California Project Director<br>**Russell Anderson**, Director of Bus Maintenance Training |
| Canal Alliance | PT, M | **Aaron Burnett**, Director of Policy and Civic Engagement*<br>**Air Gallegos**, Director of Economic Mobility** |
| Contra Costa Transportation Authority | PT, CI | **Lindy Johnson**, Director of External Affairs |
| GILLIG | PT, CI | **David Hamilton**, Leader of Corporate Strategy |

**Key**

Indicates Catalyst grantee

Indicates Catalyst partner

* Steering Committee member

** Sub-sector Table Participant or Anchor Partner

**Sub-sectors**

PT Public transit fleets

M Maritime

CI Charging infrastructure

N/a Other or none

| | | |
|---|---|---|
| Golden Gate Bridge, Highway and Transportation District | PT, CI, M | **Denis Mulligan**, General Manager and CEO<br>**Michael Hoffman,** Deputy General Manager of Ferry Division |
| Good Green Work | PT, M, CI | **Emily Courtney**, Founder and Principle |
| Greenbelt Alliance | N/A | **Victor Flores**, East Bay Resilience Manager |
| IBEW Local 1245 | PT, CI | **Hunter Stern**, Assistant Business Manager |
| IBEW Ninth District | PT, CI | **Micah Mitrosky**, International Representative, Renewable Energy & Clean Transportation<br>**Dr. Kimberly A. Moore**, CCMP, National Executive Director, Clean Technology Training Trust |
| IBEW Local 569 | M | **Cristina Marquez**, Environmental Organizer |
| IBEW Local 595 | CI | **Bradley Cleaveland**, Consultant<br>**Jason Gumataotao**, Lead Organizer |
| JAMKO Foundation | M | **Michelle Edmond**, Executive Director and Founder |
| Jobs to Move America | N/a | **Sarah Arveson**, Senior Researcher<br>**Theo Figurasin**, Western Assistant Director for Campaigns |
| JobTrain | N/a | **Kwanee Womack**, Director of Career Training and Education<br>**Monique Zhou**, Manager of Instruction |
| JT Marine | M | **Irene Toristoja**, Controller |
| Livermore Andermore Transportation Valley (LVTA) | PT | **Jennifer Yeamans**, Senior Grants and Management Specialist** |
| Machinists Institute | PT, CI | **Casey Galligher**, Regional Director CA** |
| Marin Transit | PT | **Anna Penoyar**, Acting Director of Capital**<br>**Holly Lundgren**, Acting Director of Capital** |
| Metropolitan Transportation Commission | PT, CI | **Ada Chan**, Regional Planner*<br>**James Choe**, Climate Program Manager<br>**Craig Bosman**, Funding Program Manager** |
| Napa Valley Transportation Authority | PT | **Antonio Onorato**, Director of Administration, Finance, and Policy** |
| North Bay Labor Council | N/a | **Jack Buckhorn**, Executive Director* |
| Port of Oakland | M | **Chris Walker**, Workforce Development Manager**<br>**Matt Davis**, Chief Public Engagement Officer |
| Port of San Francisco | M | **Tiffany Tatum**, Workforce Inclusion Development Manager |
| Ridgeline Pathways | M | **Pat O'Donnell**, CEO and Co-Founder |
| Rising Sun | N/a | **Art Taylor**, Chief Strategy and Program Officer<br>**Sneha Ayyagari**, Director of Policy |
| San Francisco Bay Ferry/WETA | M | **Lauren Gularte**, Government and Regulatory Affairs Manager** |
| San Francisco Electrical Construction Industry | CI | **Alex Lantsberg**, Research and Advocacy Director** |

| | | |
|---|---|---|
| San Francisco Municipal Transportation Agency | PT | **Brett Berning**, Manager of Apprenticeships and Work-Based Learning**<br>**Kathie Studwell**, Acting Manager, Grants Acquisition and Administration Office**<br>**Khatri Bhavin**, Zero Emission Program Manager<br>**Michael Henry**, CMO of Fleet Maintenance**<br>**Wilson Hoang**, Human Resources Analyst |
| Santa Clara Valley Transportation Authority (VTA) | PT | **Lisa Vickery**, Deputy Director of Operations Development and Bus Operations** |
| Spaulding Marine Center | M | **Pierine dell'Avo**, Boatworks 101 Apprenticeship Program Director |
| SOS Richmond | N/a | **Daniel Barth**, Executive Director |
| UAW Center for Manufacturing a Green Economy | N/a | **Priyanka Mohanty**, Executive Director of the United Auto Workers Center for Manufacturing a Green Economy |
| UC Berkeley Institute of Transportation Studies | PT | **Justin Wiley**, Strategy and Development Director |
| UC Berkeley Labor Center, Green Economy Program | N/a | **Jessie Hammerling**, Co-Director, Green Economy Program*<br>**Josh Sonnenfeld**, Senior Policy Researcher, Green Economy Program* |
| UCLA Labor Center | PT, CI | **Sarah Thomason**, Principle and Founder, Movement Economics**<br>**Veronica Wilson**, Program Specialist** |
| Washington State Ferries | M | **Forrest Nichols**, Director of Vessel Engineering and Maintenance<br>**David Sowers**, P.E., Program Administrator, System Electrification |
| West Oakland Job Resource Center | M | **Tarecq Amer**, Assistant Director** |
| Workforce Alliance of North Bay | N/a | **Zach Koblick De Leon**, former Senior Workforce Development Analyst<br>**Nik Inalsignh**, Community and Business Partnership Officer |
| Working Waterfront Coalition | M | **Sal Vaca**, Project Director**<br>**Bobby Winston**, President and CEO |
| Working Partnerships USA | N/a | **Louise Auerhahn**, Director of Economic & Workforce Policy* |
| ZeroMar | M | **Graham Balch**, Founder and CEO |

Estolano ADVISORS

# Appendix F: Example Regional Framework

Source: Oregon Metro.

https://www.oregonmetro.gov/sites/default/files/2019/11/04/construction-career-pathways-regional-framework-20190901.pdf