

# Developing Transit Talent Pipelines



TransitCenter is a foundation that works to secure a more just and sustainable future with abundant public transportation options. We recognize that our current transportation system is contributing to climate change, that transit systems poorly serve many of their riders, and that access to opportunity in the U.S. is deeply inequitable because of unjust, historical barriers based on race, gender, culture, and identity.

We believe that targeted research and effective grassroots advocacy can persuade leaders to make better choices that center both climate and justice outcomes in transportation. We make grants, conduct research, and coordinate a national network of local advocates to build a successful movement pushing for bold shifts in transportation funding and strategy.

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# 1 Introduction



**No matter where we live or what we look like, most of us work hard to make a better future for our families. We should be able to rely on good public transit to access opportunities. However, widespread workforce shortages at transit agencies nationwide are impeding their ability to get people where they need to go. Over the past several years, some agencies have addressed these shortages by improving wages and job quality. But these efforts have yet to solve the problem at scale.**

TransitCenter’s 2022 report, *Operators in Crisis*, detailed the struggle to recruit and retain a sufficient number of bus operators and identified solutions to declining job quality for that key position. 2023’s *People First* discussed the challenges with human resources and how they impact agencies’ ability to hire and maintain staffing in white-collar positions. **This report will use another critical position, bus mechanics and maintenance workers, to highlight the current challenges agencies face and the new challenges that will arise as agencies attempt to restore and increase service post-pandemic and transition to zero-emissions fleets.**

American transit agencies employ approximately 430,000<sup>1</sup> people who have chosen to work in the industry for various economic, social, and environmental reasons. Transit jobs have historically been good jobs, and the field’s competitive wages and benefits have launched many Americans into the middle class. For people motivated by giving back, a career in transit is a way to serve their communities. For workers concerned about the climate, transit provides a chance to play a role in reducing carbon emissions directly. While the industry is far from perfect, transit has provided many workers a rewarding career that has sustained them and their families.

However, the appeal of transit jobs has lessened as job quality has degraded. Young Americans have become less interested in skilled trades and technical work by some measures. Skill and labor shortages in other trades and among other employers with large fleets will lead to competition for workers.

As a result, agencies can no longer count on a steady pipeline of people who want to work in transit. Additionally, agencies can’t continue to rely on word of mouth and connections through friends and family to drive interest in the field, as they have previously. Instead, the transit industry must proactively introduce more people to the opportunities offered by transit to build durable pipelines of

workers. Transit agencies must take steps to more actively engage with potential workers and encourage them to join the transit workforce. They must also identify new methods to prepare these workers for entry into the field and to retrain current workers to meet current and future needs.

TransitCenter interviewed agencies, organized labor, and frontline workers to understand the industry's pipeline challenges and opportunities fully. Based on these interviews, we developed the following recommendations for building up transit worker pipelines, all of which have been developed and deployed by at least one agency.

## **Recommendations for Building New Talent Pipelines**

- 1. Develop apprenticeship and pre-apprenticeship programs** to develop skills in new workers while helping entrants to the field ease their way into the transit workforce. Such programs can help agencies improve their recruitment and retention of new workers.
- 2. Increase recruitment of talent from underrepresented populations** such as women, people of color, and the formerly incarcerated. Create cultures that are supportive of workers of all types.
- 3. Form partnerships with high schools, community colleges, and trade schools** to educate young workers on opportunities in the transit industry. In collaboration with educational institutions, develop training programs that speak to current and future needs of the workforce.
- 4. Undertake workforce planning exercises and strengthen workforce development and training.** Equip HR departments with the staff, resources, and respect necessary to lead these efforts effectively. Take special care in developing workforce transition and training programs when adopting policies to phase out fossil fuel buses and replace them with zero-emissions vehicles.



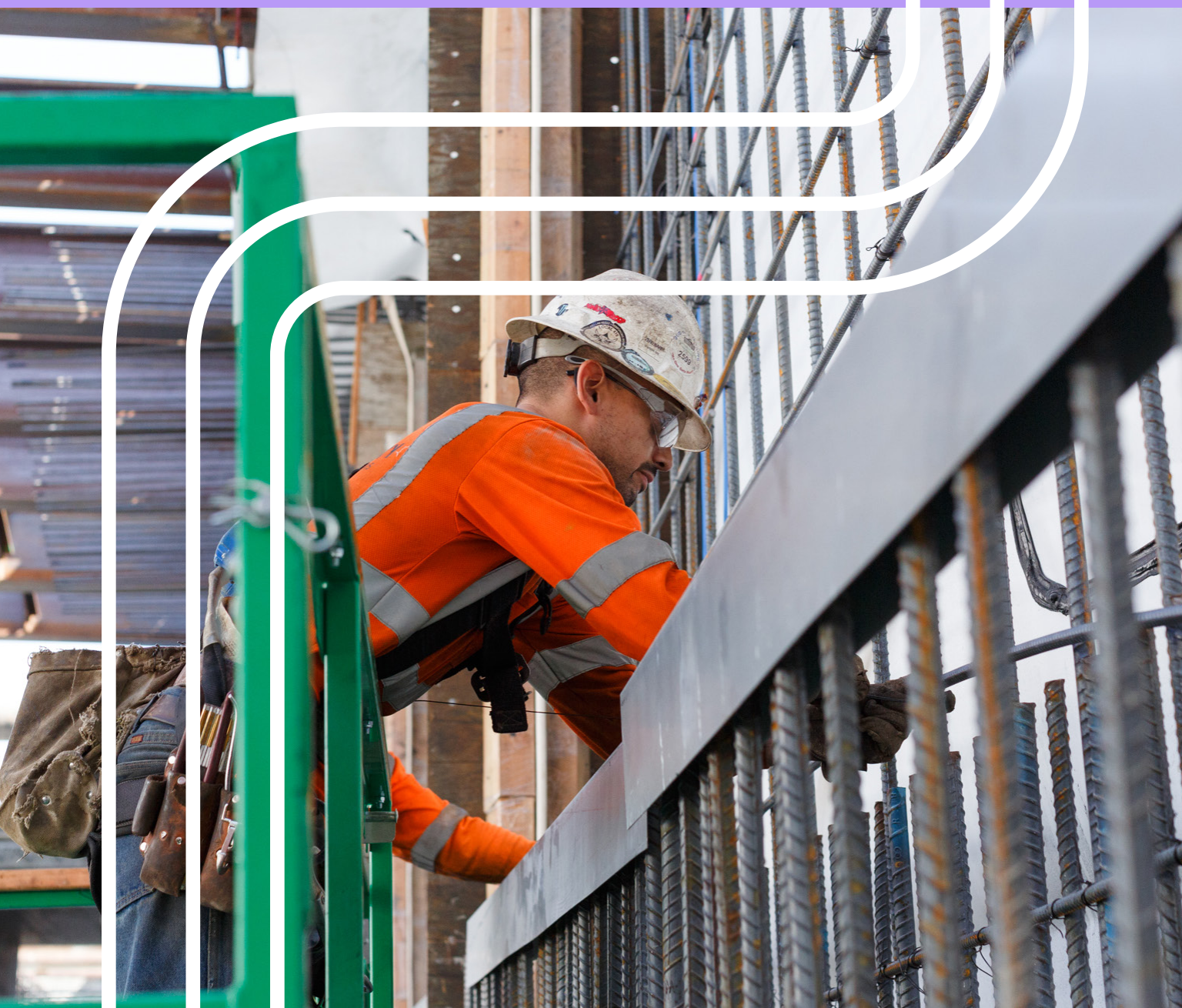
**Transit agencies must take steps to more actively engage with potential workers and encourage them to join the transit workforce.**

Transit agencies and the industry must work together to build long-term solutions to today’s labor troubles. Public transit is a crucial climate and equity solution, without which we cannot meet decarbonization or social mobility goals. However, transit will struggle to reach its potential without a well-supported and respected workforce.

With greater investment from transit agencies, state and federal government, and philanthropy, we can ensure that transit jobs are attractive, high-quality, green jobs that can help our cities and regions thrive.



# ② Actions



**While this brief focuses on actions that transit agencies and their partners can take to build pipelines into the industry, other actors must play a role. Above all, federal, state, and local governments must provide transit agencies with the funding and resources required to be more proactive. At present, many agencies face fiscal cliffs and may have to make cuts to service and possibly their headcounts. Such a scenario would be devastating to the workforce and blunt the ability of agencies to grow their talent pools.**

New federal operating support would allow agencies to expand transit service to meet current needs and beyond. An analysis performed by the Climate + Community Project finds that a proposed \$20 billion in annual federal transit operating support could create 230,000 new transit jobs nationwide.<sup>2</sup>



## **Federal**

- **Build up agency capacity to effectively manage workforce programs.** Administering and monitoring workforce funds should be a key priority for USDOT. As part of the Infrastructure Investment and Jobs Act (IIJA), USDOT has seen a significant increase in the resources it can provide transit agencies. Notably, the Low or No Emissions Grants will require that agencies spend 5% of their awards on workforce training.<sup>3</sup> While laudable, USDOT is struggling to administer and oversee these funds. A 2022 report<sup>4</sup> from the USDOT Office of the Inspector General (USDOT OIG) warns that USDOT faces challenges in increasing its workforce to effectively manage IIJA programs – much as it did during its previous sudden increase in funds via the American Recovery and Reinvestment Act. If USDOT cannot meet its workforce challenges, it will struggle to serve the needs of transit agencies and other fund recipients.
- **Provide state and local governments with technical support on how to apply for and use workforce funding.** The USDOT OIG report also cautions that the agency must provide more assistance to state and local governments as they pursue new federal funds. State and local governments also face workforce shortages and need auditing, procurement, and acquisitions expertise. USDOT has tried to give state and local agencies additional support, but more is required. The OIG recommends that USDOT use resources from other federal agencies and philanthropic partners to provide technical support. In addition to the OIG's recommendation, agencies should clarify the proposals that are likely to receive grants so that resource-starved state and local governments know where to focus their efforts.
- **Monitor the use of workforce funds and provide models for success.** USDOT should closely track how agencies spend workforce funds. USDOT must share what types of programs it is funding and how much money is going to each type. It should report back on the effectiveness of the programs it is funding and share what has proved successful in building up workforce capacity and what has not. Proper evaluation will allow for identifying model programs and encourage agencies and governments to replicate best practices. USDOT should work with other federal agencies to identify and replicate successful models from different sectors.

## **State and local governments**

→ **State governments must also provide transit agencies with workforce development funds.** Agencies must rely on something other than federal funds, which come and go depending on the party in power. Therefore, states should establish a dedicated funding system for workforce training. California, for example, provides workforce development funding for zero-emissions vehicle training through the California Air Resources Board (CARB).<sup>5</sup> CARB funding is not exclusive to transit. Still, many agencies have been able to take advantage of their programs as they've transitioned to zero-emission buses. More states should follow the CARB example. States should keep application processes simple and ask for materials similar to those required for federal grants. They should track successes and share best practices from programs that received funding.

→ **Local governments should empower agencies to form partnerships with educational institutions, workforce development nonprofits, and organized labor.** Local governments should empower and encourage local agencies to identify partnerships and work with nongovernmental organizations to provide workforce training for individuals interested in working in transit. This report provides examples of successful collaborations that transit agencies have had with local high schools and community colleges. Partnerships with labor should also be encouraged. Unions are essential partners in establishing apprenticeship and pre-apprenticeship programs. Union members can guide the development of such programs and mentor participants.

## **Philanthropy**

→ **Funders should support transit workforce development programs.** Private philanthropic organizations should support efforts by transit agencies, labor, and workforce development organizations to build up the transit workforce. Transit is vital in providing high-quality jobs while combating greenhouse gas emissions from transportation. Philanthropic organizations provided funding to some of the organizations and programs in this report. There are also opportunities to fund wraparound services, such as childcare, that help participants receive the services and support they need while completing such programs.

→ **Provide technical assistance and support to agencies and organizations seeking federal funds.** A lack of capacity often keeps smaller agencies and agencies in disadvantaged regions from applying for federal and state grants. Philanthropic organizations can provide technical assistance and support to these agencies to help them improve their chances of winning these awards.

# ③ Competition for Scarce Workers



**A shortage of bus operators and maintainers forced Seattle’s King County Metro to reduce service levels in the Fall 2023 schedule.<sup>6</sup> While announcing the cut, King County acknowledged that it was short 21 mechanics of the 252 mechanics needed to maintain its planned level of service.<sup>7</sup> Denver RTD has made strides to improve recruitment for maintenance, technician, and service employees but still faces 30% vacancies in some roles. A lack of maintenance and repair workers in its light rail division has led to delayed maintenance work.<sup>8</sup>**

King County Metro and Denver RTD’s experiences are not unique. The transit industry as a whole faces a significant talent shortfall. An APTA survey found a 13% vacancy rate for bus mechanics across responding agencies.<sup>9</sup> That number remained consistent regardless of agency size. The only position with a higher vacancy rate was bus operator. The Transit Workforce Center’s analysis of Bureau of Labor Statistics data shows that between 2022 and 2032, there will be 243,000 job openings for bus and truck mechanics and diesel engine specialists.<sup>10</sup> Of those openings, 241,000 will be due to retirements and separations. In 2022, there were 291,600 workers employed in those job categories.<sup>11</sup> High turnover will challenge agencies that have not prepared for the future. Agencies will not only have to recruit a new generation of workers but pass on the skills and experience that would otherwise leave with retiring workers.

Bus maintenance workers and mechanics are responsible for keeping rolling stock on the road and keeping it in good repair. They handle various tasks to keep riders and operators safe and moving. They change oil and windshield wipers when needed; they repair heating, ventilation, and air conditioning (HVAC) systems; they do thorough safety checks to prevent mishaps and more severe problems from occurring during bus service. The number of tasks a single worker might carry out varies from agency to agency. Typically, larger agencies with more staff see higher levels of specialization and more focused work. Small and mid-size agencies expect staff to take on diverse tasks daily. These workers are vital to agency operations. Their hard work enables agencies to keep their fleets running safely and on time.

**Transit agencies must sell themselves as a viable pathway to young people and demonstrate that public transit can be a rewarding career that can sustain a family, even without a college degree.**

Many of the challenges agencies face in recruiting and retaining mechanic and maintenance workers are similar to those faced by bus operators, as detailed in TransitCenter’s *Operators in Crisis*. Retirements remain a crucial driver: A large cohort of workers is eligible for retirement and preparing to leave the workforce while an insufficient number of entrants is joining the workforce to replace those retirees.

As the workforce ages and more workers approach retirement or leave the field, agencies will have to build new sources of talent. In the past, agencies could count on a full roster of potential candidates and pull in young workers when needed. That is no longer true. By some measures, young Americans have become less interested in skilled trades and technical work.<sup>12</sup>

Fewer young people are learning vocational skills and being encouraged to consider the trades as a career. In the 1980s, states began shifting high school funding away from career and technical education (CTE) and toward academics such as math and reading. From 1990 to 2009, CTE credits earned by high school students declined 14%.<sup>13</sup>

Convincing young people to work in transit has proved more difficult than before. Students and young workers have been told for years that they must go to college and enter the white-collar workforce to succeed. Transit agencies must sell themselves as a viable pathway to these young people and demonstrate that public transit can be a rewarding career that can sustain a family, even without a college degree. Recently shifting attitudes among young people toward the trades may benefit transit agencies in this effort. A 2023 survey found that 73% of young people respected the skilled trades as a career, and 47% were interested in pursuing a career in a skilled trade.<sup>14</sup> If the perception of the skilled trades is changing positively, agencies should seize the opportunity to recruit.

The market for mechanic and maintenance workers is a competitive one. Many industries rely upon these workers to keep their heavy vehicle fleets moving daily, and transit is just one of many opportunities that workers can seek out. Through conversations with bus mechanics and people who train them, TransitCenter heard that many mechanics do not enter the field intending to work in public transit. Many planned to work in trucking, as it is a more extensive and better-known career path. Others enter after working for car



dealerships or other companies that maintain fleets. Transit agencies must do a better job of marketing themselves to these workers — both when they enter the field and after they’ve gained experience and are considering a new employer.

Trainees and experienced workers turn to transit when they become aware of it and the competitive wages and benefits it offers. Agencies must seek relationships with trade schools to ensure aspiring mechanics know the field and seek agency jobs. Agencies must also pitch their jobs to more experienced workers and sell themselves as a place where advancement opportunities exist. For many workers, the fact that agencies offer better pay and competitive benefits than other employers will be enticing.

## Bus and Truck Mechanics and Diesel Engine Specialists Employment and Wages<sup>15</sup>

Industry	Employment	Hourly Mean Wage	Annual Mean Wage
<u>Truck Transportation</u>	57,590	\$24.56	\$51,090
<u>Automotive Repair and Maintenance</u>	26,600	\$26.43	\$54,970
<u>Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers</u>	26,110	\$28.04	\$58,310
<u>Local Government, excluding schools and hospitals</u>	24,010	\$30.88	\$64,230
<u>Urban Transit Systems</u>	2,280	\$28.14	\$58,530
<u>Charter Bus Industry</u>	1,270	\$26.50	\$55,120
<u>Interurban and Rural Bus Transportation</u>	1,110	\$28.58	\$59,440



**Transit workers do face conditions and challenges that other mechanics don't. Many agencies have staff working around the clock to keep the fleet in service. As with many positions in public transit, seniority determines who gets assigned which shift. Newer staff tend to have shifts overnight and on weekends, when many workers prefer to be home. While this is necessary for agency operations, it can be unattractive to some workers.**

Though not unique to the transit industry, racial and cultural divides exist between management and the workforce, creating difficulties for workers. At many agencies, management does not reflect the racial diversity of the staff. Many higher-ups do not have hands-on experience maintaining a bus. TransitCenter heard from workers at some agencies who feel that management needs to consult them properly before making decisions that impact their ability to conduct their work. Mechanics felt management should have made efforts to involve them in decisions regarding fleet acquisitions.

## **Lowest agency wage for apprentices and journeymen at select agencies<sup>16</sup>**

<b>Agency</b>	<b>Maintenance (Apprentice) lowest agency wage</b>	<b>Maintenance (Journeyman) lowest agency wage</b>
NYCT	\$21.46	\$30.81
LA Metro	\$28.50	\$30.23
SEPTA	\$18.62	\$30.41
CTA	\$19.53	\$29.23
WMATA	\$26.24	\$27.88
SFMTA	\$19.73	\$43.85
AC Transit	\$22.56	\$34.26
MARTA	\$21.87	\$25.45

Additionally, these workers expressed concerns that agencies do not always provide needed equipment when introducing new rolling stock. This challenge particularly applies to staff working with electric vehicles, where high-voltage batteries require different personal protective equipment (PPE) sets. To maintain these vehicles safely, staff require new training and specialized equipment.<sup>17</sup>

Because people often find out about jobs in the skilled trades through personal or family connections, potential recruits tend toward the existing makeup of an agency’s workforce rather than that of the city or region they serve. In the United States, bus and truck mechanics are more likely than the general public to be white and are much more likely to be men. Garages and depots are not always welcoming environments for people from different walks of life and backgrounds. It can limit agencies’ recruitment abilities if new staff feel isolated or left out when they join the workforce.

Adjacent industries are also racing to improve workforce recruitment and will challenge agency efforts to increase their hiring numbers. Recent research from Brookings finds that nearly 17 million “infrastructure workers” will leave their jobs over the next decade.<sup>19</sup> A wave of retirements and job openings across key industries will mean high occupancy rates across sectors that compete with transit for workers in positions like heavy-duty vehicle drivers and maintenance workers. Now more than ever, the transit industry must be forward-thinking and find new ways to attract workers to the field and build durable talent pipelines of interested and prepared job candidates.

## Bus and truck mechanics and diesel engine specialists by demographic<sup>18</sup>

Demographic Group	Women	White	Black or African American	Asian	Hispanic or Latino*
Percentage of total employeed	1.6	87.4	6.9	1.8	20.6

\*Both white and non-white Hispanic or Latino

## **The Inflation Reduction Act (IRA) and the Infrastructure Investment and Jobs Act (IIJA)**

- Implementation of the Inflation Reduction Act (IRA) and the Infrastructure Investment and Jobs Act (IIJA) will direct more than \$1 trillion toward a variety of projects over the next decade.<sup>20</sup> Many of these projects will aim to reduce carbon emissions across the transportation sector. IRA and IIJA will allow the transit industry to harness more than \$108 billion<sup>21</sup> toward improving safety, modernizing fleets and infrastructure, transitioning to greener vehicles, and investing in underserved communities.
- Making these improvements will be challenging if the transit industry lacks the workforce to maintain its infrastructure and fleet. Fortunately, the two bills provide \$75 billion for workforce development.<sup>22</sup> Transit agencies must use these funds to prepare for the future.
- Recognizing the need for investments in workforce training, the Low or No Emission Grant program administered by the Federal Transit Authority requires that agencies use 5% of awards for this purpose.<sup>23</sup> The application for the LowNo grant requires that applicants provide a list of their workforce needs to support vehicles purchased with the grant.<sup>24</sup> Awardees are still identifying how to spend these funds. Grant applications from the Massachusetts Bay Transportation Authority (MBTA) and Washington Metropolitan Area Transit Authority (WMATA) show that both agencies plan to use their grants, in part, to develop workforce development and safety programs.<sup>25</sup>

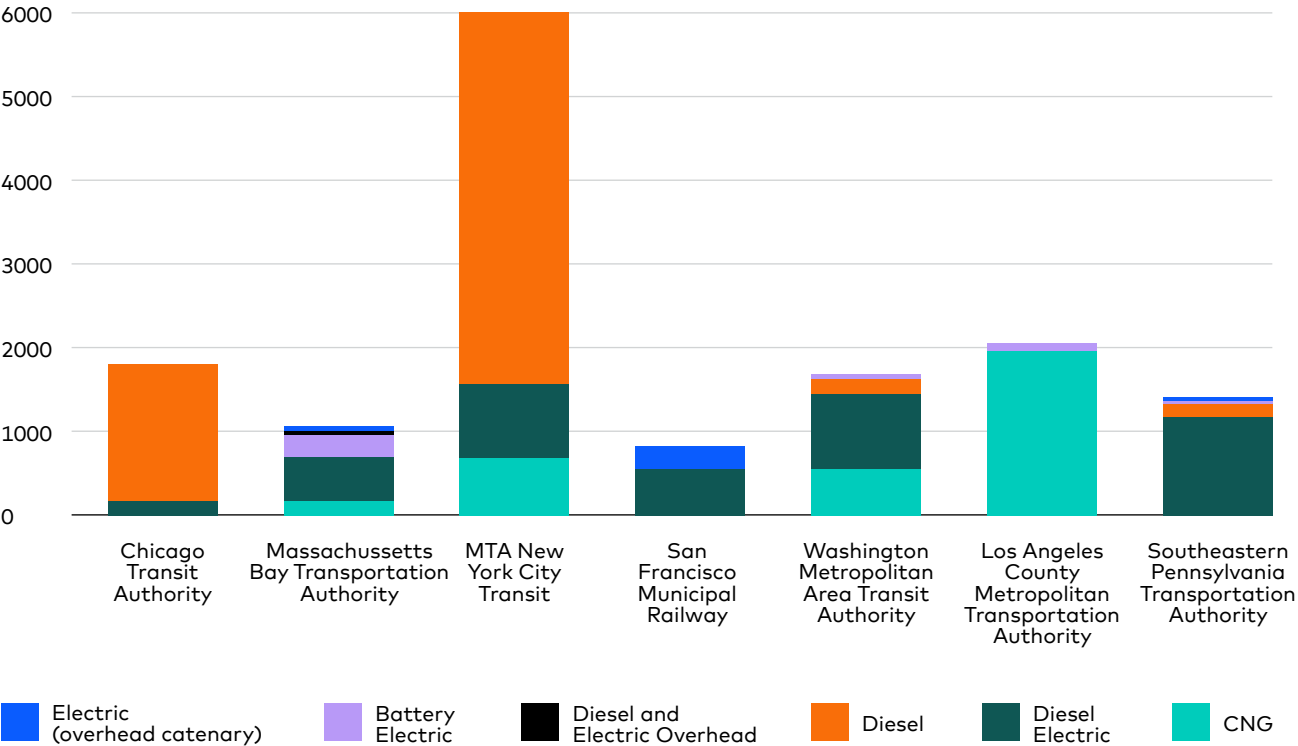


# 4 Electrification Workforce Challenges



A key challenge going forward will be retraining and skilling up the workforce to maintain a fleet of electric vehicles. Such vehicles require skills different from those for diesel and compressed natural gas vehicles. Many transit agencies have begun the transition to zero-emission buses. They are acquiring new fleets, usually battery electric vehicles, that produce zero tailpipe emissions. These vehicles will allow transit agencies to end their dependence on fossil fuels and reduce the greenhouse gas emissions and air quality impacts created by transit operations. While riding in transit produces fewer emissions than riding in a private vehicle, transit faces pressures to lower emissions even further as the United States seeks to reach net zero carbon emissions.

### Battery electric buses remain a small percentage of the fleet at large agencies<sup>26</sup>



**Agencies must continue to focus on providing riders with reliable service and not let the electric transition detract from the quality of service.**

Many agencies, cities, and states have made lofty promises about the rate at which they will fully transition to a zero-emissions fleet. While laudable, agencies risk biting off more than they can chew. The transition requires so much more than simply acquiring a new fleet. Agencies must upgrade facilities, alter routes, and, perhaps most important, train their workforce to operate and maintain new vehicles.

Agencies must update facilities and install new infrastructure to charge electric buses and keep them ready for service. Existing garages and depots do not have the necessary electrical capacity to charge many buses simultaneously and will need significant upgrades. Agencies must work with their electric utilities to undertake these infrastructure investments. The ongoing maintenance of new charging stations will require staff time and training.

Agencies will have to adjust bus schedules to account for battery life. Electric buses do not yet have the range of internal combustion engine buses and won't be able to run all day. Agencies must modify schedules to allow longer layovers and charging time. Until electric models achieve the range of the current fleet, it may be necessary to acquire more of them to handle the same level of service.

Today's electric buses are less reliable than diesel, compressed natural gas, or hybrid buses, and can present operational challenges. There will be a learning curve as agencies get up to speed. Maintenance teams will need to learn the ins and outs of these buses.

Agencies have decades of experience with diesel, but they are just getting acquainted with electric buses. While agencies must learn and prepare for their zero-emission future, that must not come at the expense of today's operations. Most of any agency's fleet still relies on fossil fuels and will last many years. Agencies cannot neglect that fleet. Agencies must continue to focus on providing riders with reliable service and not let the electric transition detract from the quality of service.

While much of the work will be the same, bus maintenance teams will need new skills and equipment to care for battery-electric vehicles properly. Battery electric buses have high-voltage propulsion systems that bring new hazards and concerns for maintainers. Many workers will be cautious about working on the new fleet, and agencies must give proper training to ensure that the workforce feels





secure to keep accidents to a minimum.<sup>27</sup> Diagnosing problems with electric buses requires using a computer more often than with fossil fuel vehicles.

Agencies must ensure that their workers understand how these new systems work and that they hold vehicle manufacturers accountable for providing continuous support for their software packages. One worker we interviewed complained that their agency's BYD buses used software that hadn't been fully translated into English. They often found themselves trying to translate software prompts from Mandarin.

Many agencies rely on warranties from bus manufacturers to maintain their vehicle fleet. While manufacturers provide some training for in-house staff, agencies often have to call the manufacturer to come and service vehicles for many issues. As a result, electric battery buses sit longer before being serviced and returned to the road than other types of buses, as agencies wait for the manufacturer to respond. With fossil fuel buses, agencies can usually fully service their fleet in-house.

"A lot of agencies are buying these vehicles, and it seems, at least from my perspective, that they're not thinking at all about their workforce considerations as they purchase them," Eliseo Acosta

of San Jose’s Valley Transit Authority told TransitCenter. “They’re making these lofty promises, but they’re not also making like equal outlays, as they were, to spend this much money on training to ensure people can maintain them and that it’s being done in a way that’s supportive of labor practices we really have in place and are not just calling in contractors to do it.” To remedy this, agencies will need to give more time and attention to their training programs and require that manufacturers pass on knowledge to the in-house workforce during the warranty period so that agencies need their support only for short periods after first purchasing battery electric buses. Agencies can and should require vehicle manufacturers to provide this training in their bus procurement language.<sup>28</sup>

Electrification will require more than just mechanics for electric vehicles. Depots and charging facilities will also need electricians to install and maintain new hardware. As many industries seek to “electrify everything” and reduce their reliance on fossil fuels, the demand for electricians will grow, and competition to hire them will increase. The Bureau of Labor and Statistics estimates that 73,500 new electricians will be needed annually through 2032 to meet the country’s current and future needs. As of 2022, there were approximately 762,600 electrician jobs in the United States.<sup>29</sup> At the moment, many employers are struggling to meet that demand. In California, which has high ambitions for electrifying its economy, help-wanted ads for electricians rose by 72% from 2019 to 2021.<sup>30</sup>

Transit agencies will find high competition as they seek to transition their workforce to service battery electric vehicles. They must take steps to build attractive workplaces and talent pipelines that bring a steady flow of recruits.



Debbie

# 5 Recommendations for Building New Talent Pipelines



## **1. Develop apprenticeship and pre-apprenticeship programs**

to develop skills in new workers while helping entrants to the field ease their way into the transit workforce. Such programs can help agencies improve their recruitment and retention of new workers.

## **2. Increase recruitment of talent from underrepresented populations**

such as women, people of color, and the formerly incarcerated. Create cultures that are supportive of workers of all types.

## **3. Form partnerships with high schools, community colleges, and trade schools**

to educate young workers on opportunities in the transit industry. In collaboration with educational institutions, develop training programs that speak to current and future needs of the workforce.

## **4. Undertake workforce planning exercises and strengthen workforce development and training.**

Equip HR departments with the staff, resources, and respect necessary to lead these efforts effectively. Take special care in developing workforce transition and training programs when adopting policies to phase out fossil fuel buses and replace them with zero-emissions vehicles.

# 1

## **Develop apprenticeship and pre-apprenticeship programs**

Apprenticeships and pre-apprenticeship programs can help agencies develop skills in new workers while assisting entrants into the transit workforce. These programs can help set up new employees for success. Apprenticeships have long been used in the trades to teach younger workers the necessary skills while introducing them to the profession’s culture. Pre-apprenticeship programs help prepare workers to be successful in apprenticeships by familiarizing participants with the industry they are entering. Pre-apprenticeship programs should be tied to and prepare participants for specific apprenticeships.<sup>31</sup> Transit agencies can use this model to introduce young people to the field while building the skill sets needed to sustain the industry.

The Amalgamated Transit Union (ATU) has partnered with agencies to develop apprenticeship programs for many of their locals. One example is the program employed at Golden Gate Transit in partnership with ATU Local 1575. Golden Gate Transit initiated the program in an attempt to reverse the agency’s high rate of attrition among bus operators.<sup>32</sup> The program includes both pre-apprenticeship and apprenticeship programs. The pre-apprenticeship helps prepare future workers for joining Golden Gate Transit. It is a no-cost, semester-

long program run in partnership with Golden Gate, ATU Local 1575, and Santa Rosa Junior College. Participants in the pre-apprenticeship learn the basic skills needed to succeed as a bus operator, such as how to interpret the fare table and learn job terminology. The program exposes pre-apprentices to what life will be like as a bus operator and coaches them on how to apply for Golden Gate Transit’s bus operator apprenticeship program. The program aims to help people from low-income communities and other priority populations prepare for joining Golden Gate Transit.

Golden Gate Transit’s apprenticeship program, run in partnership with the College of Marin, trains new employees to become bus operators – once they complete the program, they start the job. The program goes beyond teaching the basics of bus driving and includes a mentoring program. It pairs apprentices with experienced operators who can teach them the ins and outs of the job while helping them relate with the existing workforce. “The building block of apprenticeship and pre-apprenticeship starts with mentorship over here at Golden Gate Transit,” Rich Diaz, Golden Gate Transit’s Bus Operator Mentor Lead, told TransitCenter. “The best part about having a mentor is you’ll find somebody you can relate to, who can say, ‘Hey, I’ve been there.’”

# 2

## **Increase recruitment of talent from underrepresented populations**

Agencies must do more to recruit from underrepresented communities and populations. While the transit workforce is diverse in many key positions, its demographics do not reflect those of the

cities and regions the workers serve. Too few workers of color find themselves in leadership positions, and too few female workers find employment in skilled roles such as bus operators and maintenance workers.

A lack of female maintenance workers and mechanics contributes to the need for more workers for the positions. While women comprise 39.7% of bus operator positions nationally, only 1.6% of bus and truck mechanics are women.<sup>33</sup> The transit industry needs to do more to ensure that mechanic positions feel open to workers of all types.

The lack of women in the skilled trades is not unique to transit. Only 2% of electricians across all sectors are women, for example.<sup>34</sup> Hiring for these positions is often relationship-based, with sons joining their fathers in the industry. More effort is needed from transit agencies and workforce development programs to ensure women can access these fields and feel welcome once they join.

As of 2019, only 12% of apprentices across industries were women. In the skilled trades, women have lower completion rates than men.<sup>35</sup> Apprentice programs should take care to ensure that women can succeed in them and that they feel supported as they move into the workforce. The U.S. Department of Labor found that apprenticeship programs should undertake several strategies to ensure that women succeed by providing:

- Personalized support for women during and after the completion of programs
- Role models who share their experiences and encourage participants to persist through difficulties along the way
- Financial assistance that enables women to begin and complete the program
- Strategies to increase the self-confidence of participants<sup>36</sup>

People of color have also faced barriers to entering the skilled trades. Though there have been improvements in trade positions, many shops do not reflect the diversity of the people that agencies serve. Agencies must do a better job of reaching out to underrepresented communities and introducing new populations to the opportunities at transit agencies.

LA Metro's WIN-LA program aims to provide opportunities for underrepresented Angelenos. The program is open to participants from priority populations, including individuals from economically disadvantaged areas, the homeless, people with criminal records, and adults leaving the foster care system, among several other categories.<sup>37</sup> Participants are given a career coach and connected to educational and training opportunities that will allow them to learn the skills necessary to work at LA Metro. Once participants complete the training, their career coaches help them seek out opportunities at LA Metro.

Apprenticeship programs can effectively create diverse talent pools, particularly when organized in partnership with unions. The Institute for Construction Employment Research found that “in terms of both levels and proportions...union-based apprenticeship programs feature greater gender and racial diversity than their non-union counterparts.”<sup>38</sup> The Climate Jobs Institute holds up Chicago-based HIRE360 as an example.<sup>39</sup> One of the pillars of HIRE360's work is its pre-apprenticeship programs for individuals from underserved communities seeking work in the construction industry. The program provides participants with test preparation, regular visits to union work sites, hourly stipends, and support services. HIRE 360 has successfully placed participants in apprenticeship programs and into full-time employment. The Chicago Transit Authority (CTA) has partnered with HIRE360 as it prioritizes hiring women and people of color for its construction projects.

Programs for the formerly incarcerated can offer opportunities for public transit agencies to find new workers while helping the formerly incarcerated re-enter the workforce and find gainful employment. An estimated 70 million to 100 million Americans have some type of criminal record, and communities of color are overrepresented among this group.<sup>40</sup> Transit agencies should institute programs that allow these

individuals to find a pathway into the industry while giving them the support they need to succeed.

CTA's Second Chance program provides returning Chicagoans with training to help them re-enter the workforce. The program provides participants with job training, networking, and mentorship opportunities. The program aims to equip Chicagoans with the skills needed to succeed at CTA or with other employers. Since 2011, more than 1,800 Chicagoans have participated in the program. CTA has hired more than 500 of those participants, with others finding employment in the private sector.<sup>41</sup>

The Iowa Department of Transportation has placed staff within correctional facilities to begin preparing individuals for employment before release. The program has been an essential source of new workers for the Heart of Iowa Regional Transit Agency (HIRTA). Julia Castillo, Executive Director of HIRTA, recommends agencies remove blanket bans on workers with criminal records, limit background checks to

specific occupation-related offenses, and partner with community organizations with rehabilitation programs to help identify candidates for employment.<sup>42</sup>

Creating opportunities for women, people of color, and others goes beyond getting them in for their first day. Agencies must work to keep them engaged and present day in and day out. Finding workforce acceptance can be difficult for staff who do not fit the traditional mold, and toxic dynamics exist in many transit agencies. TransitCenter's People First calls out the need for agencies to create more equitable and supportive cultures. Such cultures ensure that workers of all types feel comfortable in the workplace and primed to succeed. If agencies want to build more durable talent pipelines that bring in workers from all walks of life, they must not only focus on employee well-being and supportive supervision but also change how conflict is handled in the workplace. If agencies fail to improve in this regard, they will struggle to retain a diverse set of workers.

### 3

## **Form partnerships with high schools, community colleges, and trade schools**

Agencies should proactively establish relationships with high schools, community colleges, and trade schools. With a large cohort retiring from the transit workforce and nearly a quarter million openings for bus and truck mechanics expected over the next decade, transit agencies must engage with the next generation of workers. Young people thinking about their future should be aware of the opportunities that transit agencies offer. Agencies can also learn from young people what they want out of their careers and work to adjust their recruitment and retention efforts to match what they hear from these potential employees. Agencies should

aim to be present at school job fairs and work with teachers to ensure that program curriculums include needed skills.

The Metropolitan Transit Authority (MTA) has a long relationship with New York City's Transit Tech High School. The school is a partnership between New York City Transit and the New York City Department of Education. At Transit Tech, students can complete their high school education while taking CTE courses. Students who participate in the CTE program should leave high school with the technical skills needed for entry-level employment at the MTA, Amtrak, and other



employers.<sup>43</sup> The school also offers work-based learning opportunities to help students gain workplace experience before graduation.<sup>44</sup>

In Columbus, Ohio, the Central Ohio Transit Authority (COTA) provides internship opportunities to students at local high schools. After completing their junior year, students from career technical programs are eligible to hold paid internships in COTA's Vehicle Maintenance Department. Interns receive hands-on training and mentorship to help them prepare to enter the workforce. Since the program began in 2017, several students have successfully joined COTA's maintenance team after completing high school.<sup>45</sup>

Many apprenticeship and pre-apprenticeship programs occur through partnerships with community colleges and trade schools. Golden Gate Transit's programs partner with Santa Rosa Junior College and the College of Marin. Indianapolis's IndyGo runs its program with Ivy Tech Community College. LA Metro's WIN-LA includes a Transportation Workforce Readiness Training hosted at the Los Angeles Trade Technical College (LATTC).<sup>46</sup> Such partnerships allow agencies to engage with potential employees while they are still in school or job training and encourage them to consider a job in the industry. It also creates a relationship with local schools to help improve their training programs and build their capacity to send workers to their respective transit agencies for gainful employment.

## **4** **Undertake workforce planning exercises and strengthen workforce development and training**

Transit agencies should engage in workplace planning more actively to identify their current staff's capabilities and shortcomings, place sufficient staff in mission-critical positions, and project and prepare for future needs. To do this, transit agencies must have human resources departments capable of undertaking workforce planning and managing change effectively. TransitCenter's People First details steps agencies can take to elevate the human resources (HR) role at transit agencies and build departments capable of leading. Many agency HR departments lack sufficient staff and standing within their agencies to be effective agents for positive development. If agencies do not work to strengthen their HR departments, they will fail to address the workforce's present and future needs.

*To make transit agencies workplaces of the future, [People First] makes the case that agencies must transform HR into strategic functions that can proactively address future workforce needs, prioritize professional development*

*and succession management, and build a positive workplace culture. Agency HR departments are often siloed and under-resourced, often utilized only after a crisis. Instead, HR departments must be staffed, resourced, and considered strategic thought partners at the leadership level to participate in critical conversations about current and future organizational needs. Transit leadership will need to partner with human resources to develop short-, medium-, and long-term plans to grow individual and agency capacity.<sup>47</sup>*

As agencies acquire new rolling stock to meet zero-emissions mandates, there is a need to identify skills needed to service those vehicles and plan to train new and existing staff for those skills. Agencies must take care to ensure that time is available to provide training to existing staff without disrupting existing operations. Agencies must plan to hire enough trainers and update training to account for new skills.

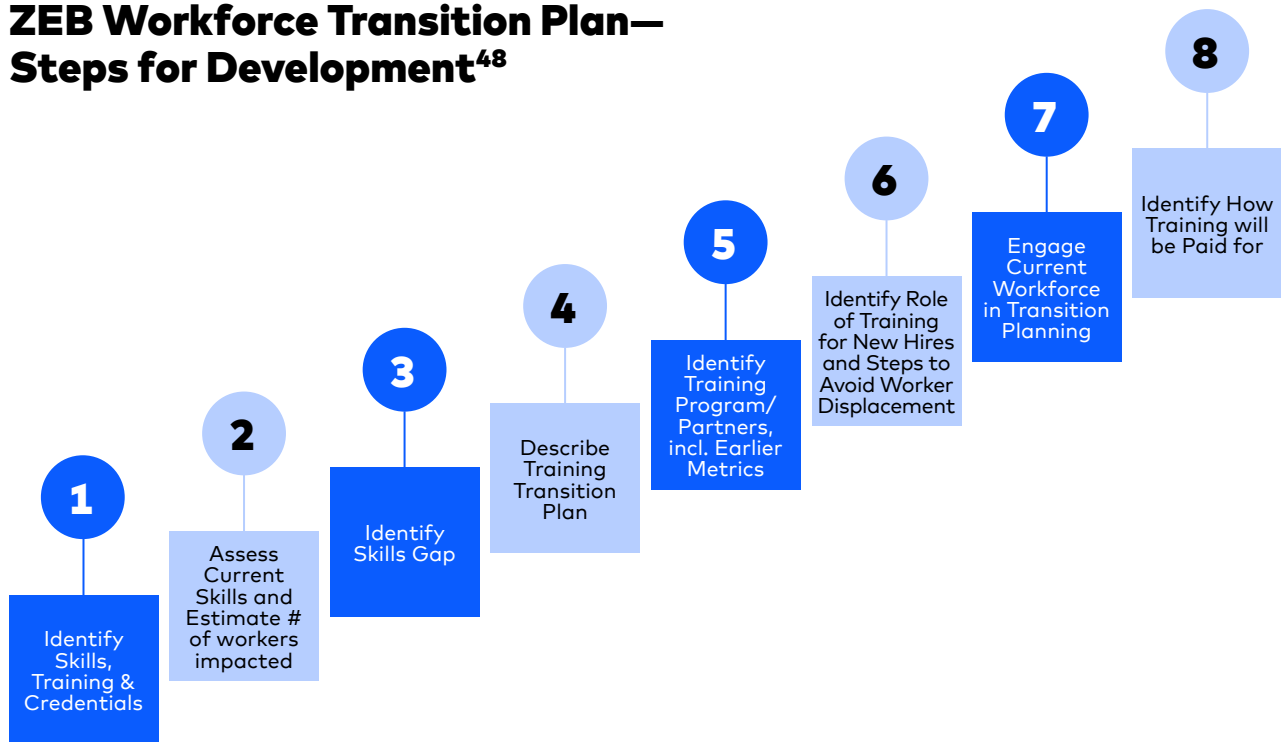
The Transit Workforce Center provides the below guidance on how agencies should manage transitions to zero-emission buses:

- Workers have the necessary skills to make the changeover from more traditional buses, which they are familiar with, to zero-emission buses (ZEBs), which feature technologies and systems that may be new to them;
- Skills developed as part of the transition plan will help keep workers safe as they shift to these new technologies;
- Newly developed skills will allow the incumbent

workforce to continue their careers and not be displaced;

- Labor and management work as a team to make the transition smooth and efficient;
- The agency has a skilled workforce that allows ZEBs to spend more time in revenue service carrying passengers and contributing to lowering greenhouse gas emissions;
- Monies are conserved through proper diagnosis, repair, and operation of the ZEB fleet; and
- Public investments in ZEBs are made wisely and without unnecessary waste.

## ZEB Workforce Transition Plan— Steps for Development<sup>48</sup>



Washington Metro’s (WMATA) zero-emission transition plan features a workforce development strategy that identifies the agency’s staffing needs and measures the impacts that training time could have on daily operations. WMATA notes how much staff time is needed to bring existing workers up to speed while training new employees. An excerpt from its analysis:

*Metro’s Bus Maintenance Department will be the most impacted due to training and education requirements that are needed prior to the daily maintenance of a battery electric bus (BEB). For context, Metro recruits approximately 30 bus mechanics every year and each mechanic requires approximately 57 days of training. In total, Bus Maintenance has approximately 800 personnel supporting the fleet transition, which will require approximately 11,000 ZEB training days. Metro will consider investing in additional trainer(s) that are dedicated to developing the ZEB curriculum.<sup>49</sup>*

Without identifying agency needs, agencies will stumble as they transition to zero-emissions buses. A clear assessment of needs and a roadmap to the future are essential for preparing the agency and the workforce for the future. Agencies should embark on ambitious plans to electrify their fleets only if they have a plan for how to train and prepare their workforce for safe and effective maintenance and operation.

The State of California has mandated that CA transit agencies transition their bus fleets to 100% zero emissions by 2040. AC Transit has developed a detailed transition plan that draws out what the agency must do to meet its deadline.<sup>50</sup> In addition to plans for facilities and vehicle acquisition costs, AC Transit has laid out how it will prepare its workforce for zero-emission buses.

For AC Transit, a critical step in the workforce transition is establishing in-house capacity to train staff to work on zero-emission buses. Like many agencies, AC Transit relies on manufacturers to supply training for new vehicles. However, their in-house staff does not plan for this to continue for the long term. The agency

will conduct more in-house training as staff better understand the vehicles and how best to apply the manufacturers’ programs to real-world conditions.

In addition to developing internal training capacity, AC Transit plans to build a new training facility that specializes in training operators and mechanics on using and maintaining zero-emission buses. They want the new facility to serve as a workforce development center for disadvantaged communities.

American Public Transportation Association’s Recommended Practices program has developed the “Zero Emission Bus Maintenance Training” standards to guide agencies and the industry.<sup>51</sup> APTA developed these standards in partnership with the ITLC, TWC, local transit agencies, transit labor unions, and zero-emission bus (ZEB) manufacturers. The training includes three levels of instruction: Level 100: ZEB familiarization; Level 200: Details of ZEB Safety, Components, Systems, and Theory of Operation; and Level 300: ZEB Maintenance, Troubleshooting, and Repairs. Agencies should consult these materials as they develop their programs. Regarding zero-emissions vehicles, every agency is still learning what they are capable of in the real world and what that means for their operations. Agencies should continue sharing lessons learned across the transit workforce.

# 6 Conclusion



**If transit agencies are to meet their current workforce challenges and prevent future shortages, they will need to be more proactive in recruiting and developing talent. They must make more significant efforts to engage with potential employees and provide them with the resources and training necessary to become successful applicants and employees. They must continuously develop new skills among the existing workforce and anticipate future needs. Agencies must put themselves in the driver's seat and meet the moment. Local, state, and federal governments and philanthropy must supplement those efforts. For transit to fulfill its potential as a key climate and equity solution, we need well-resourced agencies with happy, well-supported staff. The moment demands an all-hands-on-deck approach to connect more people to jobs in this essential industry and ensure that those jobs are attractive, relevant, and rewarding. Let's get to work.**

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