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Transit Workforce Development Challenges and Mitigation Practices

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CSUTC California State University Transportation Consortium

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Jodi Godfrey

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16. Abstract

The objective of this research is to summarize previously conducted research related to workforce development challenges in the transit industry, detailing major findings and subsequent recommendations based on the annotated bibliography of the current atmosphere and most successful ways to mitigate those challenges to attract and retain talent in the transit industry. According to the U.S. Chamber of Commerce, the U.S. had over 10 million job openings and only 5.7 million unemployed workers in March 2023. In 2017, the Washington Post posited that there were not enough workers to fill the vacancies, as the U.S. Census Bureau announced a 17-year low in unemployment while the Bureau of Labor Statistics hit record streaks for numbers of job openings. The COVID-19 pandemic exacerbated the employment challenges that the U.S. already faced. To top it all, the pandemic also led to increased retirement rates among those close to retirement age.

This provides transit industry executives and transportation professionals, with ideas of tools that are available to help attract more qualified candidates to the transit industry and ways to advance the development of the transit workforce. This research highlights some of the social media recruiting; online hiring platform improvements; and partnerships with career centers, universities, and recruitment centers to attract new employees to the transit workforce. In addition, increases in pay, benefits, bonuses, providing flexible schedule options and some other atypical ideas have successfully been used to retain workers in the transit workforce. This research focuses on ways in which all transit stakeholders can invest in all aspects of industry workforce development to ensure qualified employees choose the transit industry and that they are subsequently trained to be the most beneficial assets to the organization and remain there via effective retention strategies.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

According to the U.S. Chamber of Commerce, the U.S. had over 10 million job openings and only 5.7 million unemployed workers in March 2023. In 2017, the U.S. Chamber of Commerce and the U.S. Census Bureau identified that if every unemployed worker in the U.S. was matched with employment, there would still be 4.3 million jobs to be filled. That was before the global pandemic. While not all industries felt the challenges of the COVID-19 pandemic the same, the transit industry certainly was hard hit.

This research summarizes existing studies on workforce development challenges within the transit industry. It provides a comprehensive overview of major findings and recommendations derived from an annotated bibliography, focusing on current trends and effective strategies to address talent retention and attraction in transit. One of the objectives of this research is to provide a guide for attracting candidates to the transit workforce.

The goal of this research is to provide transit industry executives and transportation professionals with awareness of the many tools that are available to help attract more qualified candidates to the transit industry, as well as ways to advance the development of the transit workforce. This research highlights some of the social media recruiting; online hiring platform improvements; and partnerships with career centers, universities, and recruitment centers to attract new employees to the transit workforce. In addition, increases in pay, benefits, bonuses, providing flexible schedule options, and some other atypical ideas have successfully been used to retain workers in the transit workforce. This research focuses on ways in which all transit stakeholders can invest in all aspects of industry workforce development to ensure qualified employees choose the transit industry and that they are subsequently trained to be the most beneficial assets to the organization and remain there via effective retention strategies.

Key takeaways from the report focus on strategies to attract and develop the workforce skillset for long-term retention. Strategies to attract the incoming workforce are focused from four perspectives: 1) individuals, 2) accountable employees, 3) transportation associations, and 4) schools and universities. Individuals can increase awareness of industry benefits and make opportunities to enthusiastically share stories about the communal goal orientation of the transit industry. Accountable employees may benefit from developing well-defined methodical apprenticeship programs and internship opportunities. There is also benefit to incentivizing employee participation on school boards and in activities. Transportation associations should invest in actionable research and collaborate to maximize their impacts. Schools and universities can help by inviting transportation professionals to talk to students and by including transportation professionals on advisory boards.

There are opportunities to advance transit workforce development through improved onboarding, focused training and mentoring, organized communication loops, and continuous measuring of important metrics. Onboarding can be improved through streamlined approval processes and providing training while background checks are underway. Agencies will benefit from defining training with specific steps that will lead employees to progress along their career path. Communication through surveys, hazard reporting, and performance reviews provide agencies with continuous opportunities to

express expectations and appreciation. Finally, defining what is important and then measuring those metrics provides an opportunity for agencies to determine if their efforts are worthwhile.

I. INTRODUCTION

According to the U.S. Chamber of Commerce, the U.S. had over 10 million job openings and only 5.7 million unemployed workers in March 2023. In 2017, the U.S. Chamber of Commerce and the U.S. Census Bureau identified that if every unemployed worker in the U.S. was matched with employment, there would still be 4.3 million jobs to be filled. That was before the global pandemic. In 2020, following nine consecutive years of employment improvements, nonfarm payroll employment in the U.S. declined by 9.4 million employees. Employment faced staggering declines that equaled employment levels from a decade prior. This decline in employment levels was not ubiquitous, and industries that were able to thrive in socially distant environments were able to excel, while industries that relied on the movement of people in masses suffered tremendously. Furthermore, the pandemic accelerated retirement for many individuals nearing the end of their careers, creating an unforeseen surge in retirements colloquially termed the "silver tsunami." The silver tsunami phenomenon is not a transit specific metaphor, rather it refers to the large aging population that is reaching retirement age. Due to the unplanned and forceful nature of the pandemic, many of the early retirements were not accompanied by the appropriate succession planning and long-term personal guidance that often come with high-level promotions within the transit industry. Instead, promotions began to occur because of simple seniority, and many that found themselves leading felt ill-prepared for the challenges they suddenly faced.

While no specific workforce development definition is emphasized, the Federal Transit Administration (FTA) National Transit Workforce Development Strategic Plan has a mission of helping transit agencies attract, develop, and retain a skilled, diverse, and engaged workforce that is equipped to meet the evolving needs of the public transit industry.[1] The National Transit Workforce Development Strategic Plan emphasizes the importance of attracting, and investing in, the workforce that nearly every industry is desperately struggling to entice.

While not all industries felt the challenges of the pandemic the same, the transit industry certainly was hard hit, with the transit and ground passenger transportation industry losing more than 186,400 of the 508,700 total employees between the peak employment in February 2020 and April 2020 (Table 1).[2, 3]

Table 1. **Employment change in transportation and warehousing, by component industry, seasonally adjusted, February-April and April-December 2020 (in thousands)**

Industry	February-April	April-December
Air transportation	-78.2	-40.4
Rail transportation	-5.5	-9.4
Water transportation	-5.6	-2.8
Truck transportation	-96.4	50.5
Transit and ground passenger transportation	-186.4	56.7
Pipeline transportation	0.1	-2.0
Scenic and sightseeing transportation	-22.4	11.8
Support activities for transportation	-96.6	26.6
Couriers and messengers	6.4	145.1
Warehousing and storage	-90.0	183.5

Source: U.S. Bureau of Labor Statistics, Current Employment Statistics survey.

The objective of this research is to summarize previously conducted research related to workforce development challenges in the transit industry. It details major findings and subsequent recommendations based on the annotated bibliography of the current atmosphere and most successful ways to mitigate those challenges to attracting and retaining talent in the industry. One of the objectives of this research is to provide a guide for attracting candidates to the transit workforce.

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1.1 WORKFORCE SHORTAGE DETAILS

The Bureau of Labor Statistics reports that as of May 2023, there were 9.8 million open jobs and 6.1 million unemployed civilians in the United States.[4],[5] That means that if every unemployed person were to immediately become employed, there would still be 3.7 million open jobs. This is indicative of a worker's market, meaning that employers need to work to remain attractive to their employees. Conferences hosted by the American Public Transportation Association (APTA), the American Society of Civil Engineers (ASCE), the Transportation Research Board (TRB), the Transportation Technology Center (TTC), and more continue to request abstracts and host sessions that highlight the workforce development challenges the industry faces.

A July 2022 APTA survey released in October 2022 revealed that 96% of transit agencies were facing workforce challenges, and 84% of respondents were struggling to provide service due to those workforce challenges.[6] This is not a phenomenon plaguing only the urban environment, as a national survey of 170 small urban and rural transit managers revealed similar employment struggles for small urban and rural transit environments, with 91% experiencing operator shortages, 70% are struggling to pay enough to retain operators, and more than half are struggling due to retirements[7]. These struggles to attract and retain employees have led to cutting service and turned down trip requests.[8] [9]

The transit workforce is aging and will continue to witness high retirements rates for the foreseeable future.[10] The July 2022 APTA survey of 190 transit agencies revealed that the transit workforce shortage is widespread, severe, and impacted by several internal and external factors[11]. The aging workforce with increasing retirement rates, the intense competition for workers beyond the transportation industry, complex transit work schedules, regulatory frameworks that require drug and alcohol testing, and background and driving record checks (which prolong the hiring process) all further exacerbate the hiring challenges faced by the transit industry.

This is not a new issue. In 2019, the U.S. Government Accountability Office (GAO) published a report on Transit Workforce Development: Improved Strategic Planning Practices Could Enhance FTA Efforts, which made specific recommendations to FTA to develop and document strategies to address future workforce needs, and to define performance goals and measures for transit workforce development efforts.[12] As of May 2023, FTA collaborated with the Transit Workforce Center (TWC) to obtain public comment on the five major goals and objectives that were announced as the framework for the strategic plan to support, strengthen, and help address the transit industry's workforce development needs.[13].

Establish, strengthen, and expand initiatives and training to support a safe and healthy work environment for transit workers.

Support sustainable investment in workforce development and planning, specifically focused in advancing workforce diversity, equity, inclusion and access.

Support the implementation of recruitment and retention initiatives to meet current and future workforce needs through the development of career awareness and pipeline programs, while simultaneously making the industry more attractive through initiatives that encourage flexible scheduling and increased diversity.

Support initiatives that enhance continuous training, education, and advancement opportunities for all workers, specifically through guidance and resources to support skills development for new technologies.

Improve workforce development data and performance measures to guide decision making to ensure appropriate data is gathered and evaluated, resulting in improved diversity, equity, inclusion, and access.

Figure 1.   FTA's Five Framework Goals to Strengthen Workforce Development

In response to the devastating transit workforce statistics, a six-part mini-guide series was published by APTA to help transit agencies in this time of crisis.[14] The mini-guide series was designed to be used as a collaborative set of guidance that agencies can digest more easily. This document highlights only the actionable steps that the mini-guides suggest. To learn more about the impetus behind the actions, it would be prudent to review the APTA mini-guides.
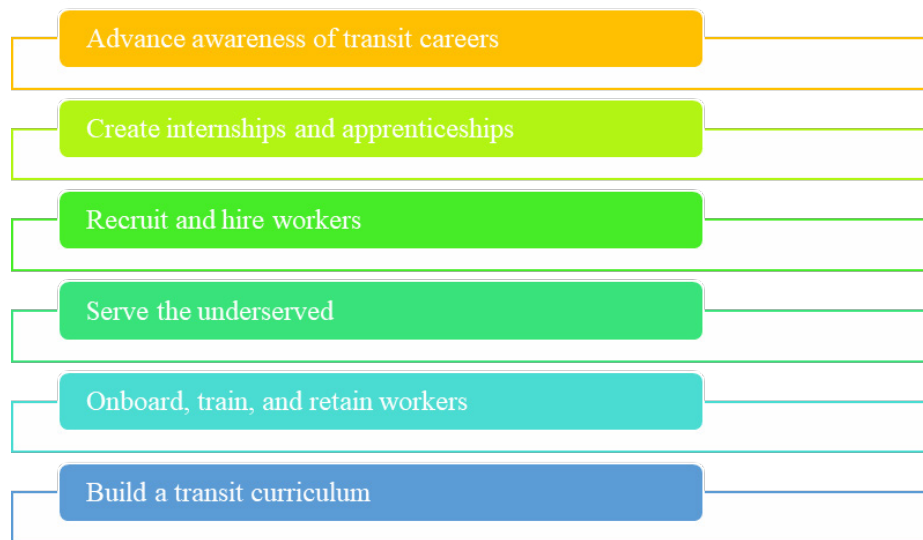
Figure 2.   APTA Workforce Development Mini-Guide Topics

The key takeaways of each of the six mini-guides are summarized throughout this report.

With an informed understanding that current and former transit employees will have varying perspectives, APTA surveyed over 1,300 current and former transit employees, revealing that both pay and work schedule play significant roles in an agency's ability to retain employees.[15] Beyond pay and work schedules, the agency's responsiveness to feedback and support is also seen as a key characteristic of employee retention. In other words, employees want to feel they are listened to and that their challenges matter to the agency. While benefits are viewed as competitive, the pay is not perceived as competitive for both current and former transit employees. In other words, while there may be attractive health, dental, and vision benefits, the pay is not an attractive feature of the position. Similarly, operator positions remain challenging to fill as operator pay has not increased consistently with the change in the cost of living in most U.S. cities.[16] Additionally, both former and current transit operations employees ranked assault and harassment as substantially more concerning than transit management respondents, though very few ranked assault and harassment as a reason for quitting. Finally, the APTA report focused on where operation employees went when they left transit agencies, revealing that 27 percent sought other driving positions and nine percent sought governmental positions, suggesting that the departure may have been due to an internal influence rather than a desire to escape the industry. If an operator is leaving an organization to take a similar position at another agency, the departure may be due to personal or internal conflicts rather than a desire to do something different.

Each of these findings are relevant individually, but the result of this feedback is resounding when viewed holistically, as it reveals an industry not yet quite competitive in pay, with employees facing challenges they do not feel supported to face, yet an industry that has great benefits and many employees that plan to passionately work at the same agency until they retire. The action items from this report, which focus on a few key strategies in workforce development, can help identify ways to address these challenges. These include 1) making transit pay as competitive as possible for the geographic area, 2) developing

and fostering clear communication for concerns, as well as ensuring funding is available to address said concerns, 3) finding the best ways to inform potential new employees of the benefits and advantages of working in the transit industry, as shown in Figure 3.
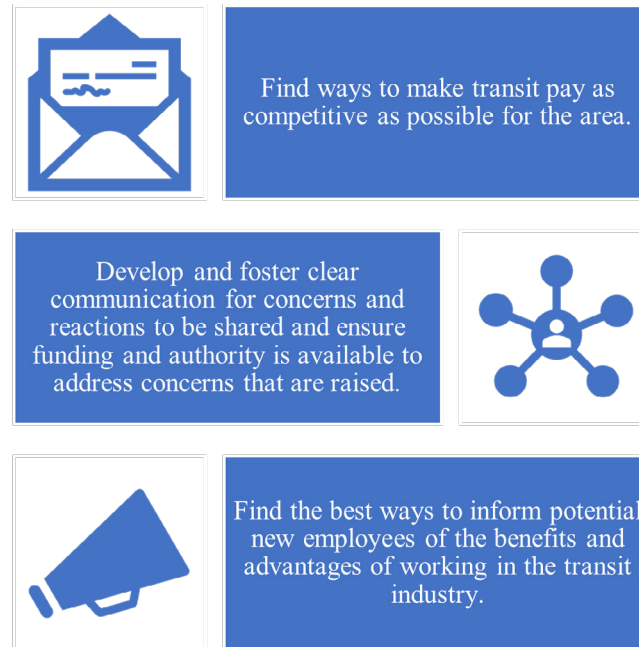

Figure 3.   Workforce Development Strategies

A successful workforce development program is dependent upon having a workforce, obviously, but more importantly, a workforce that is interested in investing in their advancement within the industry. A successful workforce development program provides clear and undeniable benefits to attract the ever-increasing new workforce, while also providing a welcoming environment that encourages advancement from within the industry and invests in training beyond what is minimally necessary to complete the current task. Succession planning and defined career advancement paths are valuable ways to display the agency's investment in workforce development, and Improve employee satisfaction which, in turn, improves retention.

II. WHAT CAN BE DONE TO ATTRACT MORE CANDIDATES TO THE TRANSIT INDUSTRY?

Aristotle described how the power of many is greater than the sum of the individual parts, emphasizing that maximum benefits are achieved with combined efforts. As such, solving the extremely complicated challenges associated with attracting and retaining the workforce needed to sustain and expand public transit service throughout the country, will take efforts from individuals in addition to efforts from accountable executives in organizations, associations, schools, and universities. All stakeholders have the opportunity to play an individual role in attracting candidates to the public , and some stakeholders also have the opportunity to bolster decision-making in the organizations they serve, and in those roles, have an opportunity to make even more of an impact on the ability for the transit industry to attract and retain qualified talent. As such, the section of this report that focuses on actions to take is divided into subsections depending on the role that fits each stakeholder type best.

One of the most important aspects of workforce development is the ability to attract new talent to the industry, which can only be done by building awareness of transit. Building awareness in transit provides mutual benefits for transit organizations and new employees. Promoting the benefits of transit careers to parents and teachers to help them understand and promote the opportunities to the young people they influence can help to improve the success of workforce development programs. Likewise, the effectiveness of the actions and programs outlined in this report hinges on their adequate promotion to ensure widespread awareness among individuals who may be interested in or contemplating a career in the transit industry[17]

2.1 ACCOUNTABLE EMPLOYEES WITHIN TRANSIT AGENCIES/ ORGANIZATIONS

There are a variety of actions agencies can take to address the workforce shortage and attract and retain qualified talent that is proud to work for the transit agency for their entire career. There are specific policies, motivations, and incentives that can align to help reduce the workforce shortages plaguing the transit industry. An agency showcases its priorities through resource allocation, and there is no greater indication of valuing its workforce than investing in ongoing workforce development.

Workforce development begins long before hiring by focusing on potential future employees. When transit employees volunteer their time to speak at events like school functions, where they can describe the work they do, the benefits of that work, and the way it makes them feel, they can potentially inspire young minds to aspire toward a career in transit.[18] Building awareness of opportunities in transit provides benefits not only for transit organizations and those who are seeking employment, but also the communities served, because a healthy transit system benefits the entire community.[19] The transit industry will benefit from employee excitement surrounding cutting-edge work, such as trespasser intrusion detection using AI, or automated emergency braking testing on buses. When employees are excited about the work, they are doing they are more likely to show up and engage.[20] Ridership programs that provide free or reduced transit rides to youth and students are

What Can be Done to Attract More Candidates to the Transit Industry?

10

a natural way to introduce these populations to transit in a way that will emphasize the benefits and opportunities associated with the industry and what it does for the community. Implementing service-learning projects are another way to motivate students to pursue transportation careers.[21] Service-learning projects empower students to apply knowledge to real-world problems, interact with the public all while remaining within the constraints of the agency, and discovering the impacts of their work in the community, proving the communal value of careers in the transit industry.[22]

Recruitment is not a skill that is inherent, nor should it be left to unstructured approaches. Rather, recruitment efforts should be deliberate and performed by employees that are trained to be effective recruiters. Additionally, when recruitment efforts are performed through an inclusive lens—with, for example, special attention placed on events at historically Black colleges and universities and organizations that serve the traditionally underserved populations—the opportunities to attract a diverse workforce increases.[23] Increased diversity leads to better utilization of talents, better understanding of markets, enhanced creativity, and better problem-solving, thus making a more desirable environment to work.[24]

Implementing various types of bonus programs including referral bonuses, sign-on bonuses, and retention bonuses, has led to reduced workforce shortage challenges for some transit agencies.[25] TCRP Report 162: Building a Sustainable Workforce in the Public Transportation Industry – A Systems Approach found that employee referral programs with associated bonuses were successful in increasing the number of applicants.[26] To establish the most appropriate program, transit agencies should set goals and develop which metrics will be measured to validate goal success.[27] Once goals are set, the incentive and necessary performance should be established and integrated into the agency protocol. Once integrated, continued incentive program success relies on promotion and evaluation.[28]

Providing the opportunity for the development of affinity groups within the agency are another way to display a commitment to improving the transit employee experience. Affinity groups are non-technical groups that provide mutual support and a sense of community to those with similar interests with the purpose of connecting mentors and promoting friendships and feelings of inclusivity. A common strategy to improve work culture includes implementing affinity groups, task forces, and employee resource groups.[29]

Accountable executives can work with their governing boards to develop promotion schedules, career progression opportunities, and enrich training opportunities to prepare the current workforce for successful promotion. Increasing training and career development at all levels of the organization is key to improved workforce development.[30] As with any goal development, first the present situation should be described, and the goals should be identified. As the goals or incremental steps are defined, they should accompany an associated defined compensation increment as well. To effectively define a compensation increment, there should also be some consideration to the source of the funding that will be necessary not only for the increased compensation but also for the inevitably necessary training. Once goals are established, define the skillsets that are necessary to meet each step of goals, and develop and provide the training necessary for the workforce to move along the career ladder. Measure the progress of the program and revisit the definitions as appropriate.[31]

What Can be Done to Attract More Candidates to the Transit Industry?

11

Accountable executives also have the authority to establish mentor programs or other support groups that can help new employees feel like they belong. Mentors who are formally assigned to new employees can provide guidance and answer questions about specific goals defined for the new employee to meet to progress within the organization. Enabling a seasoned employee to help a new hire feel welcome also provides the opportunity for friendships to develop quickly, ultimately making the workplace a more desirable environment.

2.2 TRANSPORTATION ASSOCIATIONS AND OTHER ORGANIZATIONS

Professional organizations can play a crucial role in not only identifying and articulating the workforce shortage challenges faced by transit agencies but also in highlighting successes and effective strategies to mitigate these issues. By taking specific actions, organizations can actively reduce and mitigate the impact of these shortages. Public transportation associations have the resources and partnerships with the appropriate programs and community organizations to foster beneficial relationships between transit agencies and the next generation of the transit workforce. One beneficial action a public transportation association can make is to invest in research that provides actionable guidance in digestible steps for transit agencies to follow. Actionable research provides a greater understanding of the key factors that produce change, collaboration, and systemic processes.[32] This investment in research, and implementing the suggested actions, may lead to substantial measurable change.

Partnerships with Boy Scouts and Girl Scouts that focus specifically on transportation have been successful. For instance, The National Summer Transportation Institute Program was designed by the U.S. Department of Transportation Federal Highway Administration (FHWA) to promote science, technology, engineering, and math disciplines in transportation-educations and career opportunities for at-risk middle and high school aged students.[33] The program strategically uses the FHWA regions to facilitate workforce centers that facilitate partnerships with key public and private organizations throughout the transportation, education, labor ,and workforce investment communities to promote improved workforce development. Another example, the Transportation Day in San Bernadino, CA—made possible through partnerships with WTS and HDR—has had great success.[34] Through this partnership, Omnitrans hosts about 60 local junior high school girls annually for a classroom to career day that exposes the girls to career opportunities in transit and encourages them to think like engineers.[35]

2.3 SCHOOLS AND UNIVERSITIES

The industry must take the steps required now to ensure that we are training the upcoming workforce to be prepared for the challenges of managing and improving the nation's transportation infrastructure. Even better, future transportation professionals can come to transportation careers not only prepared, but also excited. It is up to the current industry to highlight the most appealing aspects of working in transit, and work to reduce the factors that create issues with attracting and retaining diverse talent. There are also specific steps that educational institutions can take to help reduce the transit industry workforce shortages.

What Can be Done to Attract More Candidates to the Transit Industry?

12

Transit agencies should leverage activities that occur at schools and universities such as job fairs, local sporting events, and other school sponsored events that allow the community to showcase the benefits of and opportunities in the transit industry. Advertising a full range of job openings at a transit agency provides a scope of opportunities to help more people envision themselves fitting in at a transit agency. This concept should be applied to all types of career fairs, not just those at colleges or universities, as many transit careers do not require college degrees. Transit agencies will benefit most from broadening their reach in the types of future employees they invest in attracting. To best invest efforts, agencies should take a strategic approach in their career fair involvement.[36] APTA suggests focusing on six strategies:

- Talk about job options

- Describe hiring practices and expectations

- Bring young employees

- Show students where to apply

- Provide applications on site

- Talk about benefits and opportunities to advance in transit careers

Beyond simply cultivating excitement about the industry, transportation professionals also will find mutually beneficial relationships form quickly when time is volunteered to improve young minds. Many transit professionals from across the country—from King County Metro in Washington State all the way to Miami-Dade County Transit in Florida—have served on their local college and university advisory boards, and touted benefits of doing so, including an understanding of the programs and benefits that are offered to students and the ways in which their transit agency can benefit those programs. Many agency representatives have mentioned the personal benefits they also feel as they devote their time to the betterment of the young members of their community. Additionally, when transit agency representatives enter an educational Board conversation with the perspective of looking for ways in which to help, they are welcomed and they gain trust from the education board members and students alike, making the transit agency a known name throughout the educational community. When an approach is focused on ways in which a transit agency can benefit the education of the student body, then the education board response is less apprehensive to the input that come from the transit agency, given the beneficial history of the established relationship. As an example, Pinellas Suncoast Transit Authority (PSTA) has an accountable employee that serves on the Pinellas County School Board English as a Second Language Community and Parent Advisory Board where they share information about transit benefits available for eligible participants and continuously provide community outreach focused on teaching groups how to use the bus, bus navigation, and how to apply for the transportation disadvantage program for reduced fee bus pass.[37]

What Can be Done to Attract More Candidates to the Transit Industry?

13

The Association for Career and Technical Education (ACTE) identifies middle school as the time when students benefit most from career exploration, and provides recommendations for teachers, counselors, and administrators:

- Incorporate career-related project-based learning in the classroom

- Design projects and activities to develop employability skills

- Be flexible when offering exploratory courses

- Facilitate academic and career planning with scalable online tools

- Enable short-term interactions with business and community leaders

- Provide opportunities for career and technical student organization participation[38]

Beyond direct approaches, the transit industry would benefit from collaborations with vocational programs to create dedicated transit classes and programs or to add transit education into existing curriculum. These opportunities provide transferable skills that are cross-cutting to be most appealing to teachers and parents. Hands-on activities are most attractive and most memorable to students.[39]

One example of a high school summer workforce development program is the Mineta Summer Transportation Institute, which hosted 32 Bay Area high school students in July 2023, for a free 3-week hands-on program that immerses participants in STEM activities that highlight the innovative solutions that are currently being proposed to combat some of the most difficult transit challenges.[40] This program is an annual workforce development program for students who are in the stages of determining what they want to be in life has the potential to attract young passionate leaders to the transportation industry. The best programs will provide clear and specific benefits, such as the three college credits offered to graduates of the Mineta Summer Transportation Institute. The most successful programs will be formally structured to provide specific activities and training that leave students with an understanding of career opportunities in the transportation industry. The outcome of a workforce development program is favorable when the experience is individualized to interests and structured for optimal training.[41] One successful approach to providing a valuable workforce development resource at little to no cost to the students and the university is through soliciting partnerships and sponsorships with local organization that benefit from attracting the new generation of leaders to the transportation industry, such as engineering firms, airlines, transit authorities, and more. Programs like the Mineta Summer Transportation Institute provide an opportunity to spur excitement and energy into the next generation, and address workforce shortage to benefit the industry and, ultimately, communities.

Another strategy to improve workforce development is to provide valuable training before employment, for instance by providing internships and apprenticeships, is mutually beneficial. Internships and apprenticeships create awareness that might not otherwise exist in addition to offering relevant training to build confidence and excitement about the

What Can be Done to Attract More Candidates to the Transit Industry?

14

industry, accompanied by earning a valuable certification.[42] Apprenticeships can easily be designed following frameworks that have already been developed such as:

- The American Transit Training and Apprenticeship Innovators Network (ATTAIN) peer network to explore apprenticeship programs[43]

- The U.S. Department of Labor's Apprenticeship USA website, which provides information and tools to start an apprenticeship program[44]

- The GCRTA apprenticeship program with Cuyahoga Community College[45]

One approach to reduce the amount of effort required to develop student-focused resources is to capitalize on the resources that are already available for free or low costs such as the Passenger Rail Engineering Education Symposium (p-REES), which is a biennial event that provides hands-on information and curriculum materials to educators in hopes they will teach that curriculum to their students.[46] The benefits and ease of registration for this event are a prime example of ways that professional associations can support the workforce development of the future generation. Many professionals have echoed the importance of having a well-structured and methodical approach to apprenticeship and internship programs to ensure the candidates that attend the programs are enriched and encouraged through an improved understanding of the industry, the benefits of the industry, and the opportunities transportation professionals have to improve the quality of life for the members of the communities they serve.

2.4 ATTRACTING MORE CANDIDATES TAKES CONCERTED EFFORTS

The labor statistics data undeniably describes the workforce challenges that are impacting countless industries, including the transportation industry, and more specifically, the public transit industry. In order to combat some of the associated challenges beyond the control of industry stakeholders, a concerted and multi-faceted approach is required.

When considering stakeholders, individuals, accountable employees, transportation associations and educational institutions will be best suited to execute the actions necessary to combat our workforce woes (Figure 4). Stakeholders should consider the importance of the timeliness of providing awareness and opportunity to youth. Research has shown that many students have an idea of what they want to be by middle school, meaning if transit professionals can impact a young impressionable mind, there will be a better the chance of attracting professionals who chose the transit industry .[47]

What Can be Done to Attract More Candidates to the Transit Industry?

15

Individuals	• Increase awareness of industry benefits • Make opportunities to enthusiastically share stories about the transportation industry
Accountable Employees	• Develop well-defined/methodical apprenticeship/internship opportunities • Incentivize employee participation on school boards and in activities
Transportation Associations & Organizations	• Invest in actionable research • Collaborate to maximize impacts (Boy Scouts, Girl Scouts, Boys and Girls Club, community centers, etc.)
Schools and Universities	• Invite transportation professionals to talk to students • Include transportation professionals on advisory boards

Figure 4. Strategies to Attract the Incoming Workforce

III. WHAT CAN BE DONE TO RETAIN EMPLOYEES IN THE TRANSIT INDUSTRY? – WORKFORCE DEVELOPMENT

Workforce development rests on the premise that employees are the most beneficial asset of any organization, and that asset should be valued and prioritized to ensure optimal operation. Investment in workforce development builds confidence and pride within an organization when employees feel like they are worth an organization's investment. Training, mentoring, opportunities for promotion, and other investments in labor force help employees feel proud and confident. When humans are proud of the work they accomplish, they are motivated to continue.[48] Building confidence and pride within an organization requires a strategic and concerted approach that begins with onboarding processes, invests in employees through continuous training and mentoring, defines promotion paths, emphasizes intentional succession planning, promotes open communication, and clearly shares the metrics that management tracks.
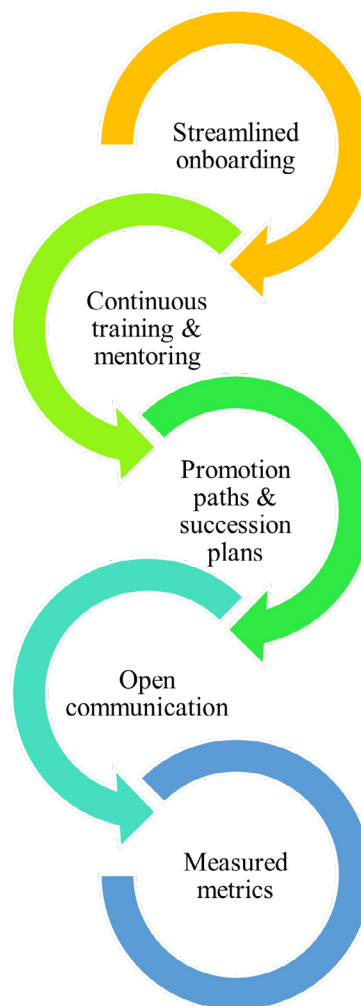
Figure 5. Path to Attract the Incoming Workforce

3.1 ONBOARDING

Intentionality is crucial when getting new employees familiarized with the organization and their responsibilities. Onboarding should be an ongoing process that connects new employees with the workplace culture and gets them excited to be part of the organization.[49] Whenever possible, agencies should streamline the paperwork and legal processes that are in place to reduce the time and potential frustrations associated with starting employment. Ensuring the application process is easy-to-use, mobile-friendly, and prominently displayed on the agency's website are a few recommendations to improve the application process.

Delays in onboarding processes have led to declined job offers, shedding light on some of the workforce development challenges that transit agencies face.[50] One of the main reasons transit agency applicants deny their job offer, in a survey of a representative sample of Florida transit agencies, is the amount of time that lapses between the application and start date.[51] This is a theme that has been echoed at professional association meetings around the country, indicating that the time delay from the time that an agency is interested in offering an individual a position to the time that the individual is actually onboarded is a critical challenge the industry must work to minimize. A strategy to increase hiring practice effectiveness, and reduce this loss of initially interested individuals, is to hire employees on a conditional basis so that training can begin immediately throughout the background check and approval process. Conditional employment may reduce the number of unaccepted job offers, and ultimately result in better hiring and retention statistics.[52] This type of opportunity often provides just enough incentive to reduce the number of applicants that decline offers prior to their offered start date. There are recognized risks associated with investing in applicants who have not yet passed their background checks, as training is a recognized costly investment, especially if the candidate is revealed not to be qualified. While there are risks associated with the potential mitigation measure of introducing training opportunities while awaiting background checks, there are also risks associated with continuing detrimental processes if those processes are impacting the agency's ability to hire the applicants that are interested in pursuing careers in the public transit industry.

Agencies may have additional success in minimizing the time between the employment offer and start date by overlapping some of the required driving record and background checks rather than completing them in a consecutive manner. Obtaining a Commercial Driver License (CDL) is another challenge identified by the industry when applicants are unable to prepare and pay for the test—a challenge that may be overcome through agency support where possible.[53]

Onboarding is the first opportunity that most organizations will have to make a first impression on the perspective of a new employee, and first impressions often influence perceptions beyond that first interaction. When an organization is deliberate and succinct in their onboarding procedures to the best of their ability, it is one way to prove that the employees are the most valued asset in the organization.

3.2 TRAINING AND MENTORING

There are many sectors of the transit industry that are changing rapidly with advancements in technologies, and many operators and technicians are not confident working with new technologies, due to a lack of understanding, which is often accompanied by a lack of, or inadequate, training; a challenge that can be overcome through intentional investment in the workforce.

Investing in workforce training is a key symbol of a commitment to workforce development, a mutually beneficial investment, providing employees with ever-expanding skillsets.[54] As employees' skillsets expand, there is an increased opportunity for the agency to benefit from the knowledge gained. It is crucial that training opportunities are offered in a variety of delivery methods to ensure that the needs are met for all learning styles. Trainings should be inclusive of eLearning and virtual learning, train the trainer programs, toolkits, job aids, webinars, printed materials, conferences, and more.[55]

As the technologies that the transit industry is embracing expand, and the required skillsets begin to morph into previously unknown territories, many stakeholders within the transit industry will need to embrace relevant training. One example includes the need for many technicians to acquire battery electric bus or other zero emission technology familiarization and repair training. However, the needed training is not just relevant to maintenance employees, as operators should be trained on the nuances of fuel efficiency using regenerative braking in addition to the different operating characteristics to keep in mind while operating the bus; schedulers should be trained on the differences in the capabilities of the buses, ensuring that the operators are not stranded along their route with no way to power their vehicle; and first responders should be trained to understand, at a minimum, how to deenergize a bus.[56] Providing this training not only improves the safety of the workforce, but it also improves the value of the workforce through increased skillset capabilities, making each employee a more valuable asset to the organization.

Giving employees the opportunity to mentor interns and supervise new young professionals offers mutual opportunities to grow and build pride and confidence for both mentors and mentees.[57] When a mentor is formally assigned to a new employee, and specifically tasked with answering questions and making the new employee feel welcomed, opportunities to build friendships are able to develop quickly, helping to create an environment that is welcoming to new employees rather than isolating.[58] A mentor may also help the new employee identify affinity or resource groups within the organization that would fit their personality best, further emphasizing a welcoming environment that is attractive to employees.

We, as an industry, must invest in building the skills of the existing workforce through training and mentoring, to ensure that employees are prepared, confident, and excited to not only apply for promotions, but excel in the promoted position once placed.[59] Each transit agency should work to create a culture of growth and learning that provides opportunities to learn, practice, and build confidence in skills beyond what is immediately required for their current position. Investing in employees through encouraging and financially

supporting leadership training, tuition reimbursement, attendance at industry conferences, and other training opportunities is proof that the agency is committed to preparing the current workforce for promotions.[60]

3.3 PROMOTION PATHS AND SUCCESSION PLANNING

Many people who are hired have ambition to move up the responsibility ladder within the organization they have joined. Young workers display lower organizational commitment than their predecessors, so it is important that transit career discussions include details of upward mobility opportunities, quality of life expectations, advanced technologies in the industry, training opportunities, benefits, and more.[61] Focusing on the higher purpose of transit, while also touting the personal benefits of transit employment, will help a myriad of perspective employees, no matter their motivations.[62] As transit agencies articulate and encourage upward mobility within their organization, they help make the entire transit industry more attractive. Providing defined steps to obtaining promotions within the agency, or documenting and sharing the appropriate trainings and certifications that will make a candidate most attractive for each position in the organization will help clarify for employees what specific steps they can take to obtain the position they desire within their organization.[63] An additional benefit of providing clear promotion paths is a reduction in turnover. A Pew Research survey in 2022 identified low pay and no opportunities for advancement as the top two reasons that respondents left their employment in 2021.[64] This is a theme that remains true for the transit industry; competitive pay and opportunities for promotion must be strategically planned and implemented to improve workplace culture and increase retention.[65]

Partnerships with educational institutions and trade schools provides mutually beneficial knowledge transfer and experience.[66] Providing tuition reimbursement programs and other benefits and partnerships encourages the investment in self-promotion that is necessary for any employee looking to work up the promotion ladder.

Increases in pay will also necessarily accompany increases in abilities, and transit agencies that have set compensation increases for specifically identified certifications, degrees, or other notable accomplishments prove that they are invested in their workforce. This notion of documenting the percentages in increases for each type of certification helps to ensure there are no unintentional biases introduced within the promotion criteria.[67]

3.4 INPUT-CENTRIC EMPLOYEES AND EMPLOYERS

When long-time employees are asked why they stay with an organization, organizational culture is a recurring theme, yet culture is one of the hardest characteristics to inherently measure. Without question, clear communication channels are one characteristic that inherently improve organizational culture and retention rates.

One strategy to retain employees includes the use of employee surveys to understand employee satisfaction and to obtain suggestions on potential improvements that can be made to improve employee satisfaction. Employee satisfaction is correlated with commitment to an organization. Employee surveys are one way to gauge employee satisfaction and the

current culture of an organization, in addition to the factors that are most important to the employees.[68] Additionally, employees should be encouraged to report hazards, as there should be pride in the safe, efficient, opportunity to improve the safety, security, and comfort of their work environment.[69] There are benefits associated with the open communication opportunities stemming from employee safety reporting systems, where feedback loops and responses to reported hazards increase the confidence in the organization.[70]

Employee performance reviews provide a unique opportunity to align the specific performance of each individual employee with their goals for upward mobility and clarify any uncertainties.[71] Ideally, performance reviews will occur on an ongoing basis and will not be limited to an annual cycle. Creating an environment that welcomes and encourages feedback on a consistent basis will boost the confidence of each employee and improve the workplace culture. The tone, environment, and constructiveness of feedback is critical to improving the workplace culture. Similarly, the reactions to the feedback, and the correspondence of the status of the reactions are vitally important to establish and emphasize confidence in communication channels and management.

Providing employees as many opportunities as possible to express their ideas, frustrations, concerns, excitement, and any other feedback will help to improve employee satisfaction, as long as there is some type of response to the feedback received.[72] There is a necessary feedback loop that requires those that receive the feedback to not only listen and be receptive, but to also ensure that actions are taken to show that the feedback was thoughtfully and carefully responded to. This feedback loop provides many benefits, including increased morale, employee satisfaction, and improved workplace culture, which is touted as important by many employees and employers, and yet is difficult to coherently define and measure.

3.5 TRACK IMPORTANT METRICS

Agencies should be sure to identify and track the metrics that are vital to employee retention. In order to ensure that the training, succession planning and promotion paths, and employee input opportunities are performing as intended, performance metrics should be identified and subsequently tracked long term. These metrics should identify the most important outcomes for the transit agency, and the trends in the measurements should help to identify when the approaches are successful. TCRP Report 162: Building a Sustainable Workforce in the Public Transportation Industry – A Systems Approach defines some metrics a transit agency may decide to track include:

- Time to fill position

- New hire turnover within the first year

- Offer-to-acceptance ratio

- New hire turnover during training

- Recruiting cost ratio

- Employee voluntary turnover rate

- Cost to fill open positions

- Diversity turnover

- Pre- and post-training testing

- Impact of training on system operations, safety, and customer service

- Renewal cycles for training materials

- Percent of employees who participate in employee development opportunities

- Percent of supervisor positions filled internally by frontline employees

- Percent of job descriptions with an up-to-date job description

The characteristics that are most valued, the ones that receive enough attention to measure changes, are the ones that will be managed and ultimately improved. It is important that each organization defines the metrics that are most important, and then aligns its time, energy, and funding investments in the continuous improvement and re-evaluation of those characteristics.

IV.   SUMMARY & CONCLUSIONS

Prior to the COVID-19 pandemic, there were several million more jobs to be filled than employees available to fill them, and the pandemic brought staggering declines that equaled employment levels from a decade prior.[73] This decline in employment dramatically impacted industries that relied on the movement of people in masses. While not all industries felt the challenges of the pandemic the same, the transit industry certainly was hard hit, with the transit and ground passenger transportation industry losing more than 186,400 employees between the peak employment in February 2020 and April 2020. The pandemic not only resulted in widespread job loss but also prompted many nearing retirement to opt for an earlier-than-planned retirement, leading to what was unofficially termed the "silver tsunami.".[74] Due to the unplanned and forceful nature of the pandemic, many of the early retirements were not accompanied by the appropriate succession planning and long-term personal guidance that often comes with high-level promotions within the transit industry. Instead, promotions began to occur because of simple seniority, and many who found themselves leading felt ill-prepared for the challenges they suddenly faced.

Overcoming the workforce development challenges the transportation industry faces will require both attracting more candidates to the industry and training and retaining those that join the it. These workforce development challenges require an approach that cannot be easily accomplished by one or two organizations, but rather will require concerted efforts from individuals, employees and accountable executives within transit industries, transportation associations and other organizations, and schools and universities.

Another critical part of workforce development is training and retention strategies. Starting from onboarding, which marks the initial chance for an agency to showcase its organizational culture, there are numerous approaches agencies can explore to streamline the onboarding process, thereby minimizing the time between application and start date. Providing defined training and mentoring that is consistently available for employees that are interested in advancing their careers is one way to demonstrate a commitment in employees while also improving the morale of the individuals that work for an organization. Investing in intentional succession planning is beneficial for both the employee and the organization because deliberate succession planning will increase the confidence and technical capabilities of the employee, which will ultimately make that employee a better leader within the organization. Additionally, defined succession planning reduces turnover because employees who are working towards promotions are not typically coincidentally looking for outside employment.

Transit agencies committed to providing employees with opportunities to give and receive feedback through various communication platforms can build confidence and morale through communication loops. Some great examples of communication loops include surveys with follow-up actions, employee safety reporting systems, and employee performance reviews with resulting actionable improvement steps. Transit agencies emphasizing identifying metrics that are most important to them, and then investing time, effort, and funding into tracking and improving those metrics, helps clarify what is most important to the agency. Within an industry that serves people, those that are best at displaying their commitment to their workforce and workforce development will be the best agencies to serve their communities.

Individuals

- Increase awareness of the industry benefits
- Make opportunities to enthusiastically share stories about the transportation industry

Accountable Employees

- Develop well-defined/methodical apprenticeship/ internship opportunities
- Incentivize employee participation on school boards and in activities

Transportation Associations & Organizations

- Invest in actionable research
- Collaborate to maximize impacts (Boy Scouts, Girl Scouts, Boys and Girls Club, community centers, etc.)

Schools and Universities

- Invite transportation professionals to talk to students
- Include transportation professionals on advisory boards

Onboarding

- Streamline approval processes
- Provide training as approvals are underway

Training and Mentoring

- Defined training with steps to progression of career path
- Mentoring focused on succession planning

Communication Loops

- Surveys with follow-up
- Employee hazard reporting
- Performance reviews

Measure important metrics

- Define what is most important to your agency
- Take steps to improve those metrics

Figure 6. Key Takeaways

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