

Workforce Development: Your Questions Answered

As engineering firms and agencies anticipate talent shortages, we discuss strategies on recruitment, retention, and long-term workforce stability with Donn Digamon, PE, state bridge engineer with the Georgia Department of Transportation.

by Monica Schultes

The infrastructure industry is confronting an industrywide labor squeeze that shows no sign of easing. Donn Digamon, PE, state bridge engineer with the Georgia Department of Transportation (GDOT), discusses how to drive meaningful change in workforce development. Answers have been edited for brevity and clarity.

Q: What is your general assessment of the development of the (industry) workforce?

A: When I was a group leader at GDOT, my supervisory position provided me with insight into our staff disparity. Many entry-level engineers were entering the department while 30-year veterans were planning to retire. I could see the “perfect storm” brewing, where there would be a gap with no established conduit or structure to transfer knowledge or train new employees. It is easy to overlook trends like this, and despite the industry’s progress, there is a visible knowledge gap. Employers across the industry are searching for “unicorns” with 10 to 15 years of experience to fill the experience divide. We use the term “unicorn” because it is rare to find people with the right combination of experience and education. There is a limited number of engineers who can take on a project with little supervision and deliver on time, on scope, and with safety at the forefront. A common complaint is that we value our bright and talented young engineers, but they lack experience and exposure to all facets of the planning, design, construction, and maintenance

of a bridge. DOTs [Departments of Transportation] are developing the pipeline by establishing mentors for technical areas involving bridges, and encouraging critical thinking from new hires. Just like asset management and preservation, we need to take better care of our human resources. We need to capture that body of knowledge from those nearing retirement age and transfer it to the next generation of bridge professionals.

Q: Is the labor shortage more critical now? Is there a greater need in the concrete bridge industry for engineers or for skilled laborers, DOT inspectors, technicians, and others?

A: The labor shortage is still critical across all vocations, even more so than a decade ago. We are in dire need to fill all roles in the industry, including designers, construction inspectors, contractors, engineers, fabricators, decision-makers with technical experience, the list goes on and on. There is a need to have an established pipeline to generate a consistent workforce devoted to the entire bridge design, construction, and maintenance process. A bridge project is a team effort, and when any part of that process is lacking, that will add an actual cost to the job. We especially need folks who want to be out in the field. Construction has its challenges, but the reward is being a part of the ultimate build.

Georgia Department of Transportation engineers-in-training visit a jobsite for hands-on experience as part of ongoing efforts to attract, train, and retain strategic thinkers committed to the transportation industry. All Photos: Georgia Department of Transportation.





The Federal Highway Administration's Strategic Workforce Development Program offers tools such as the *Identify, Train, Place* playbook¹ to help state transportation agencies recruit and train a diverse workforce.

Q: The Federal Highway Administration (FHWA) summarizes the key steps in resolving the labor shortage as "identify [potential employees], train, place, and retain."¹ Which aspect requires further attention?

A: I think all areas need work. The reality is that employees have so many priorities, which detracts from a focus on workforce development and knowledge transfer. Engineers, especially those early in their careers, need practical training in essential professional skills tailored to infrastructure projects. The FHWA initiative provides an overarching effort to establish methods to identify, train, place, and avoid redundancy. The "identify, train, place" initiative signifies three legs of a stool—all are equally important.

Q: What approaches are state agencies using to attract more women, minorities, high school graduates, veterans, and second-chance candidates?

A: The industry needs to engage early and often through presentations at high schools, technical schools, universities, and internships. We can show people from all demographics how their contributions impact the community. DOTs share success stories and inspire others to create a road map to achieve comparable results. We need champions to help

spread the word. Starting early is key to introducing engineering and construction vocabulary to children. Many do not know about the range of opportunities in the concrete bridge industry. A successful recruitment effort focuses on team players and critical thinkers. We are looking for people who can function as individuals and fit as part of the team.

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Q: How do we leverage technology in attracting, training, and developing our workforce?

A: We need to challenge young staff members to find ways to improve current processes with technology but still complete the work with safety in mind. While the latest technology can attract young engineers, in my opinion a state bridge office is often a stronghold of tradition and slow to change!

So, we need to shift our corporate culture to welcome those who have different backgrounds or mindsets and be open to a better way of accomplishing tasks. Just as we need to constantly update computers and other hardware, we also need to update our expectations about our people.

Q: What resources are available to agencies and consultants for skill development?

A: Industry organizations like the American Concrete Institute, American Segmental Bridge Institute, Precast/Prestressed Concrete Institute, and others have updated their learning resources. Training opportunities include seminars, webinars, and networking. I think there needs to be a greater emphasis on bridge-focused academic curriculum and training because they are not included in a typical university learning pathway.

Q: How do we inspire more universities to teach bridge engineering and construction topics?

A: Some champions in this arena of bridge-focused learning are the civil engineering programs at Purdue University led by Dr. Robert Connor and California State University, Sacramento, led by Dr. Eric Matsumoto. These two programs expose students to opportunities in the concrete bridge industry. (For more information, read the Professor's Perspective in the Spring 2023 issue of *ASPIRE*®.)

Q: Workforce development has been a hot topic for years. What have we learned and which strategies are working?

A: We need to focus on being consistent and persistent. If we are charting the course on a different path, we cannot be distracted. Focusing on attracting potential candidates and training current employees need to be prioritized. If there is no pipeline of critical thinkers joining your staff, your

agency or firm will have a tough time completing the work. So, we need to be consistent and committed in every phase from recruitment to mentorship. An important lesson is to establish buy-in from leadership to ensure that the strategies are supported. Another lesson is to avoid sacrificing quality for quantity. I strongly believe that we should not lower the bar of professionalism and standards to increase the number of candidates and employees. We need to find individuals with sound judgment. But we also need to look further afield. For example, our asset management group found that industrial engineers bring a unique perspective and expertise despite not being trained specifically about bridges.

Q: What are some of the key factors that result in a new hire staying (or leaving)?

A: A big challenge is getting talent to stay. Key factors include providing a safe yet challenging environment for learning and advancement and making mentors available. Industry professionals look for job stability, purpose-driven work, and professional growth. It comes down

to recognizing individuals and their different strengths rather than taking a one-size-fits-all approach. We encourage mentorship moments wherever and whenever they happen. Today's workforce can span several generations, each with its own communication style. It is important to discover ways to bridge gaps and foster understanding across those divides. Newer employees need to step up, but older generations need to take them by the hand to pull them up. Be a mentor and pay it forward because at one point in our careers, someone had an impact on us and that made all the difference.

Conclusion


As investment in infrastructure grows so will the demand for the bridge industry workforce. The labor shortage finds agencies and firms competing for talent as they recruit early-career engineers and seek to maintain midlevel staff capacity. The next generation of critical thinkers and problem solvers is waiting for the industry to reach out and engage them as they identify potential career paths. The industry continues to share its success stories about recruiting diverse demographics, improving



Training programs for project managers incorporate practical applications such as drones used for quality control, and documenting construction progress. Using new technology encourages new staff to be innovative.

corporate culture, and incorporating innovative training programs. (For more information, read the Perspective article on workforce development and recruitment methods in the Summer 2024 issue of *ASPIRE*.)

Reference

1. Federal Highway Administration (FHWA). 2021. *Identify, Train, Place: A Playbook to Build Tomorrow's Highway Construction Workforce*. Washington, DC: FHWA. https://www.fhwa.dot.gov/innovativeprograms/centers/workforce_dev/hcwp/playbook_and_products/default.aspx. 

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