ITS AMERICA

A BLUEPRINT FOR TRANSPORTATION TECHNOLOGY

Delivering Safe, Smart, and Connected Transportation

2025

The Intelligent Transportation Society of America
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About

The Intelligent Transportation Society of America (ITS America) is the nation's leading advocate for the technological modernization of our transportation system by focusing on advancing research and deployment of intelligent transportation technology. Founded as an official advisory board on road technology to the U.S. Department of Transportation, ITS America represents state and city departments of transportation, transit agencies, metropolitan planning organizations, automotive manufacturers, technology companies, engineering firms, automotive suppliers, insurance companies, and research and academic universities. Our members come to one table – ITS America – to shape the next generation of transportation and infrastructure driven by intelligent transportation technologies; one that is safe, smart, and connected.

Introduction

Over the last century, great strides have been made to improve our national transportation system. From the creation and expansion of our Interstate Highway System to the freight and logistics revolution and the development and advent of ubiquitous commercial aviation – the United States of America has established an abiding global legacy of transportation innovation, vision, and leadership. While there is much about this legacy to celebrate, we must simultaneously ensure that our transportation system is prepared to deliver a similar legacy over this century – a century that will be defined by what we are able to accomplish through the integration of transportation technologies and innovations, both to solve longstanding transportation challenges and to capitalize on emerging opportunities to provide for the safe and efficient movement of people and goods. Encouragingly, such solutions are within reach – intelligent transportation systems (ITS) developed by American industry and academia are eagerly sought-after by our international partners and competitors, and technology solutions promise to dramatically improve transportation safety, drive economic growth and development, enhance our global competitiveness, and improve the resiliency and return on investment of our hard infrastructure assets.

Building and sustaining high quality infrastructure requires significant investment in the best tools available today – especially technology. Other industries such as healthcare, financial services, and telecommunications have embraced technology – and transportation should be no different. Still, the deployment and integration of these solutions will not happen automatically. It will take the dedicated support of public and private sector partners to successfully secure widespread implementation of ITS technologies, just as it will require reimagining our understanding of transportation infrastructure to one which reaches beyond concrete or steel. If we can accomplish that, however, we will substantively address our enduring transportation challenges in a way which exceeds current efforts using traditional solutions; a way which leverages new technological innovations to deliver new and improved outcomes.

Safety - Foremost among our transportation challenges is safety. Far too many people are injured or die on our nation's roads each year. In 2023, the National Highway Traffic Safety Administration (NHTSA) estimated that there were 40,990 deaths on American roads.[1] Despite investment and policy efforts, we continue to see the same outcomes: even with reductions in roadway fatalities in the past few years, the numbers are still too high. Furthermore, these numbers do not capture the millions of Americans that are injured on our roads every year, nor the estimated $800 billion in financial costs that such crashes cost our country annually.[2] These numbers demonstrate that the status quo approach to addressing transportation safety is insufficient, and innovative solutions are required. In any other industry, we would not accept the sheer number of injuries and deaths that we see in the transportation sector, particularly caused by vehicle crashes. It is clear that the U.S. needs a mindset shift on how we address transportation fatalities, and we need to embrace a proactive, comprehensive, all-of-the-above approach to improving safety on our roadways. Technology is a key tool to solving our traffic safety crisis, and it is more apparent than ever that we need to prioritize investments in technology solutions, such as digital infrastructure, artificial intelligence, Vehicle-to-Everything (V2X) communications, and automation, that will improve safety outcomes for all road users.

We must be proactive rather than reactive when it comes to safety, creating a layered approach that combines physical and digital infrastructure to protect all users and meet the needs of future mobility while delivering better safety outcomes. This means reimagining Federal transportation policy to include transportation technology at every step of the process and updating procurement methods to reflect 21st century needs. By leveraging technology in a more holistic way as we plan for, build, and operate infrastructure, we can make zero injuries and deaths on our roads a reality.

Efficiency **-** Additionally, transportation technologies will modernize our infrastructure to improve the transportation experience for all Americans. According to the Texas A&M Transportation Institute, congestion costs the U.S. economy over $224 billion annually in lost productivity, wasted fuel, and delayed goods. Similarly, Americans individually lose nearly 54 hours to traffic congestion annually, spending time in traffic that could be spent at work or at home with their families. ITS technologies, such as adaptive traffic signal control and real-time traffic monitoring, reduce congestion by dynamically adjusting to real-time traffic conditions. These solutions can additionally be paired with AI to optimize traffic signals across a network or a region. Route optimization tools, powered by GPS and predictive analytics, help drivers avoid congestion and identify the fastest routes. Freight operators benefit from similar tools, reducing delivery times and fuel consumption, thereby getting goods onto shelves and doorsteps more quickly and efficiently, and at a reduced cost.

Efficient traffic management minimizes idling and stop-and-go conditions, leading to lower fuel consumption and emissions. For example, University of Michigan researchers demonstrated that connected vehicle data insights can be used to decrease the number of stops at signalized intersections by 20% to 30%, utilizing GPS data from as little as 6% of vehicles on the road. Further, ITS technologies can dramatically improve crash detection, response, and management, allowing first responders to clear incidents faster and restore traffic flow with minimal delays.

[1] National Highway Traffic Safety Administration. https://www.nhtsa.gov/press-releases/2022-traffic-deaths-2023-early-estimates
[2] Secretary Elaine Chao, 2019. https://www.highways.org/wp-content/uploads/2019/12/sec-chao-letter-5.9-11-20-19.pdf

These are just a few of ways in which innovative transportation solutions are already helping people reduce their time stuck in traffic behind the wheel – and coordinated support for ITS deployment can expand these innovative solutions and bring them to even more communities across the country.

Fiscal Responsibility **-** Investments in ITS technologies represent sound fiscal policy – transportation technologies significantly improve returns on investment for infrastructure projects while simultaneously bolstering domestic economic growth and global competitiveness. Digital infrastructure and artificial intelligence solutions harness relevant transportation data to create actionable planning insights, allowing transportation practitioners to address safety concerns before crashes occur while pinpointing infrastructure most in need of improvement, expansion, or repair.

Specifically, ITS technologies can extend the lifespan of existing transportation infrastructure and reduce the need for costly road expansion and repairs. By using sensors and data analytics, ITS technologies provide real-time monitoring of road conditions, helping transportation agencies identify areas that require maintenance before problems become more expensive to remedy. Proactive infrastructure management ensures that limited transportation funds are being spent efficiently, maximizing the return on transportation expenditures. With greater return on investment with ITS, funds can be freed up for other critical hard infrastructure projects. Similarly, ITS technologies can optimize the use of existing infrastructure by increasing throughput without requiring significant physical expansions, achieving desired transportation outcomes at a fraction of the cost.

Economic Growth **-** Finally, investing in ITS technologies also presents a significant opportunity for economic growth and job creation, particularly in the fields of engineering, data analysis, and technology development. As the demand for smarter, more efficient transportation systems increases, the U.S. will need a skilled workforce to design, implement, and maintain these systems. The world is becoming more technologically advanced, and an investment in ITS is an investment in the future workforce, fostering innovation and creating jobs across various sectors. Further, by supporting the growth of ITS technologies, we can solidify the U.S. as a global leader in transportation innovation. As nations around the world seek to modernize their transportation systems, companies that develop and deploy ITS technologies will have an opportunity to lead the global market. This not only boosts the U.S. economy but also enhances our nation's technological standing on the world stage.

Transportation Technology Areas

ITS America has adopted policies which will advance the research, development, and deployment of transportation technologies to achieve the numerous safety, efficiency, and economic benefits associated with a transportation system fully empowered by technology solutions.

These policies are designed to provide a blueprint for how ITS adoption can be successfully implemented, with a particular focus on how Federal policy can support transportation technology deployment efforts by state, local, and private sector stakeholders.

A summary of these policies is articulated below, grouped into six categories:

- **Digital Infrastructure**
- **Automated Vehicles**
- **Artificial Intelligence**
- **Emerging Technologies**
- **V2X & Connected Infrastructure**
- **Workforce & Job Creation**

More information on the entirety of ITS Ameria's policy proposals can be found on itsa.org. To learn more about our regulatory and legislative priorities, please contact ITS America's Vice President of Policy and Advocacy, Bobby McCurdy, at bmccurdy@itsa.org.

Digital Infrastructure

Although it may not be evident to the casual observer, there is technology all around us enabling safer, more efficient travel – on our highways, transit lines, railroads, and even sidewalks. Today, our transportation system includes sensors, software, data, and algorithms that enable our traffic signals, fleet movement, trip planning, emergency services, and agency operations. Our transportation system is no longer just concrete, asphalt, or steel – it is a combination of the physical and digital, creating better outcomes for all transportation modes. With current technology, transportation agencies and providers historically rely on older systems and outdated analog processes. Therefore, it is imperative that our infrastructure is connected and able to share key data with other agencies and that the traveling public uses the best digital tools available. The world around us is getting more technologically advanced and it is time that transportation modernizes as well.

In this new era of infrastructure, we will link the physical transportation system with a digital layer, allowing us to gather, transmit, store, analyze, communicate, and share information in real time, and to use that information to increase safety, reduce congestion, unlock economic growth, and enhance mobility for every transportation user. Digital infrastructure helps us gather information about our transportation system and infrastructure, providing agencies with crucial tools to make planning decisions, enact safety countermeasures, and monitor the status of their system. By investing in digital infrastructure solutions, transportation agencies can get more out of their physical assets, making smarter investments and maximizing limited resources.

Through data sharing, agencies can understand where high-crash areas exist and deploy different policies and technology solutions. By understanding where rideshare and other transportation services are being deployed, cities like Phoenix and Jacksonville can ensure that their residents have affordable and accessible transportation options. Tools such as Variable Speed Limits (VSL) can be used to manage speed dynamically on highways in urban and rural areas alike, adjusting to real-time conditions and stabilizing traffic flow, especially when crashes or work zones are present. Digital infrastructure can enable greater availability and reliability of truck parking, giving freight drivers and companies real-time information on parking availability along America's highways.

While this is already happening on a smaller scale in various states, we can build a future where this is ubiquitous across the National Highway System.

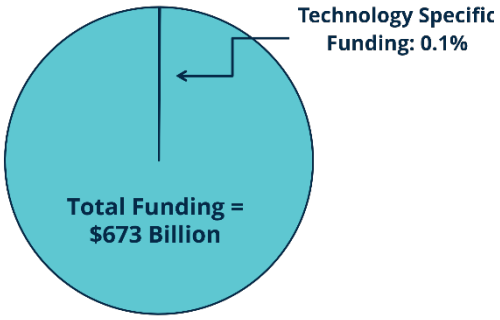
Rural communities in Washington state are installing AI-powered roadside units at intersections equipped with cameras, sensors, and communication capabilities so that agencies can monitor traffic, detect dangerous events, and provide real-time warning messages to road users. Small infrastructure upgrades such as this can have tremendous impacts for rural communities.

Digital infrastructure will impact every facet of global transportation, and it is vital that the U.S. remain competitive globally by creating the conditions for the successful nationally scaled deployment of these technologies. Decisionmakers at the Federal, state, regional, and local levels should include digital infrastructure and broader technology solutions in planning and agency-wide initiatives. Unfortunately, in the Infrastructure Investment and Jobs Act of 2021, dedicated technology programs account for only one-tenth of one percent of all surface transportation funds (in the ATTAIN and SMART programs).

So, where do we go from here?

Technology should be incorporated throughout Federal surface transportation programs under Title 23 and Title 49, prioritizing the inclusion of technology in USDOT initiatives, including in the Office of the Secretary and in all Modal Administrations. USDOT should, along with states, metropolitan planning organizations, and local agencies, include digital infrastructure and transportation technology deployment as a priority in their strategic planning documents.

Congress should affirm and broaden eligibility for technology through existing USDOT funding programs, incorporate technology into planning and asset management processes, strengthen the research and development of digital technologies, and advance technology workforce development programs fit for a new digital age.



The amount of funding currently directed toward transportation technology is inadequate relative to the outside impact such funding can create. ITS America calls for sustained and certain funding for transportation technology and digital infrastructure.

We have an opportunity to make the U.S. the global leader in transportation and infrastructure by investing in and prioritizing digital infrastructure and transportation technology so that Americans are fully realizing the safety and efficiency benefits of these incredible innovations.

Artificial Intelligence

Artificial intelligence is a powerful tool that has tremendous potential if we harness it in a safe, responsible, and useful way. While it may seem new and unknown to many, AI has been used for decades in transportation and is increasingly being used today by transportation agencies and companies across the country, working to build a transportation system that is safer, efficient, and more resilient for future generations.

AI is not a stand-alone or a replacement for existing transportation technologies. Instead, it is a tool to be used alongside other technologies to, among other uses, process vast amounts of data and provide actionable insights to transportation practitioners to enhance travel. AI has shown it can improve all transportation modalities, provide workforce development opportunities, maintain and grow US global competitiveness, and importantly, save lives.

We do not have to simply imagine the possibilities for AI – it is already transforming transportation outcomes across the country. We must accelerate this progress through further Federal support and investment in AI technologies for transportation.

Technology can simplify and optimize the process of retiming intersections to better manage existing traffic patterns and congestion, significantly reducing the burden this costly and time-consuming process places on public agencies across the country. **There are over 350,000 traffic signals in the U.S., and data shows that it takes 70 manual hours to retime one intersection. AI can do it almost instantaneously.**[3]

AI in transportation helps agencies and people solve real problems every day. We can reduce the frequency of crashes and injuries at intersections with AI by identifying near-misses and other dangerous pre-crash scenarios.

AI can predict maintenance needs on fleets and infrastructure, giving agencies critical insight into cracked roads, dangerous bridges, and needed bus repairs – all before they present problems to road users. Some communities in Nevada and Texas have lowered Emergency Management System (EMS) response times by an average of 9-12 minutes using AI-based incident response platforms.[4] These predictive analytics platforms provide insights that help agencies address safety proactively and inform future infrastructure planning – all while making more efficient use and reducing maintenance costs of our current roads and bridges.

As we integrate more data and AI tools into our system, we must also prioritize safety and security. ITS America supports the prioritization of a secure AI ecosystem, where valuable data is secure and measures are taken to

[3] Flow Labs. https://www.flowlabs.ai/solutions/traffic-signal-operations
[4] ITS America Use Case Library. https://itsa.org/technology-use-case-library/

improve resiliency against cyberattacks. AI applications should be transparent and trustworthy, and we must ensure that consumer privacy is a top priority. That's why we released our AI Policy Principles in 2024, calling for a regulatory and legislative environment that supports the increased adoption of AI in transportation and encourages greater innovation while reinforcing the need for strong data privacy protections and the responsible use of new technologies.

Congress should prioritize the authorization and funding of the use of AI for transportation through grant and formula programs, as well as research initiatives, such as the Advanced Research Projects Agency – Infrastructure (ARPA-I).

We recommend that USDOT incorporates AI systems into its five-year strategic plan and prioritize safety as an outcome in its AI research and grant initiatives. Congress should support the development of AI deployment best practices from USDOT and encourage the use of AI to enhance infrastructure resiliency. All of our hard infrastructure investments – including materials, money, and time – can go further when agencies incorporate technologies such as AI into planning, construction, and operations processes.

Together, we must explore ways to make AI advancements accessible to human users and operators, so that those utilizing these systems may better understand and effectively leverage and incorporate AI to provide benefits to communities across the country.

V2X & Connected Infrastructure

Vehicle-to-everything (V2X) technologies enable vehicles and infrastructure to exchange messages wirelessly and quickly with other vehicles, roadside infrastructure, and vulnerable road users – like bicyclists and pedestrians. Sharing key information among road users can improve safety, prevent crashes, optimize system performance, and reduce traffic congestion.

With nearly 40,000 deaths on American roads each year, the status quo approach to transportation safety is not working. We need innovative, technological solutions that will make a meaningful impact on safety outcomes. V2X, when deployed throughout vehicles and infrastructure, can save lives. Specifically, NHTSA has estimated that V2X technologies have the potential to eliminate or mitigate up to 80% of non-impaired crashes.[5] Connected transportation has been shown to help prevent crashes, protect vulnerable road users (VRUs), and protect emergency responders and roadside workers. Additionally, digital alerting helps mitigate hazardous weather and dangerous driving conditions for passengers, emergency response, and heavy-duty freight vehicles alike, allowing for safer and more efficient movement of people and freight.

Wyoming is using hazardous weather notifications and digital signs through connected V2X infrastructure to alert truck drivers of blow over conditions, icy roads, and road closures to keep drivers safe and America's goods moving efficiently and safely. Agencies across the country are also utilizing V2X applications for curve warnings, providing warnings to vehicles approaching curves at unsafe speeds and with no line-of-sight around the curve – an application which is particularly useful in rural areas. The National Transportation Safety Board (NTSB) has been a steadfast advocate for the inclusion of V2X devices in new vehicles, including through issuing ten separate formal recommendations to USDOT related to V2X deployment. While safety is the top priority in V2X deployment, connectivity can provide additional benefits that go beyond safety alone – transportation communications can improve traffic efficiency, make transit more reliable, and provide a smoother transition to a mixed fleet of automated and human-driven vehicles.

[5] National Highway Traffic Safety Administration. https://www.transportation.gov/briefing-room/us-dot-advances-deployment-connected-vehicle-technology-prevent-hundreds-thousands

In 2023, ITS America released our own V2X Deployment Plan. Following this, in 2024, the U.S. Department of Transportation released *Saving Lives with Connectivity: A Plan to Accelerate V2X* Deployment, an official national deployment plan from the Federal government for V2X. This plan for scaling V2X is a major milestone which sets short-, medium-, and long-term goals for deployments nationwide and signals strong support for this technology. The industry has an even greater opportunity to deploy in 2025 and beyond after the FCC recently solidified spectrum rules. Many states, including Arizona, Georgia, Michigan, Texas, and Utah have led through significant deployments of V2X technologies – but a national connected transportation ecosystem will require nationwide deployment, and the U.S. is currently behind pace in that metric.

The U.S. should join nations around the globe in recognizing the importance of including V2X in the New Car Assessment Program (NCAP) and implement it in new vehicles.

Other countries, including China, are poised to outpace the U.S. in the deployment of connected transportation, including V2X. China's head start in connectivity is laying the groundwork for broader deployment of automated vehicles through connected infrastructure, which will only accelerate their advantage in transportation technology adoption and utilization.

NHTSA is uniquely positioned to provide leadership in the deployment of these technologies in vehicles, and it is time that NCAP is updated to include V2X.

ITS America advocates for the continued development and deployment of connected transportation technologies such as V2X in Federal grant and formula funding programs. In addition to investment, Congress should provide USDOT with resources necessary to continue robust research and testing into advanced technologies that enhance road user and infrastructure connectivity so that the U.S. can reap the benefits of a connected transportation ecosystem that prioritizes safety and seamless travel.

Automated Vehicles

Automation is another proactive solution in our technology toolkit for enhancing safety. Both Advanced Driver Assistance Systems (ADAS) and Highly Automated Vehicles (HAV) have the potential to significantly reduce crashes on our roadways and open up access to opportunity for many Americans.

Over the years, automakers have made significant investments in ADAS. These automation technologies are already responding to driver action or inaction and likely represent what people are most familiar with in their vehicle today. ADAS includes Lane Assist, Automatic Emergency Braking, Adaptive Cruise Control, Blind Spot Monitoring, Collision Avoidance alerts, and more. For example, in Iowa, about 49% of all crash-related fatalities over the last five years involved lane departure, and ADAS can help mitigate these crashes. ADAS remains a core part of vehicle safety, and ITS America looks forward to even greater safety innovations in this space.

Similarly, from automated robotaxi services in San Francisco and Austin to fixed-route AV shuttle programs in Central Ohio and Starkville, Mississippi, passenger AV operations have grown significantly in the past few years. AVs can provide mobility options for people with disabilities and seniors, as well as access for underserved communities. There are many AV deployments and companies now operating on U.S. soil, testing and deploying advanced technology that will make our roads safer, more efficient, and accessible to those who need it most.

AVs across the country can help people reach critical social services, grocery stores, recreation, medical care, and their families.

ITS America calls for a Federal Safety Framework for AV operations that provides regulatory certainty and creates Federal safety guidelines. The absence of a Federal safety framework is leading states and localities to develop their own requirements when many do not want, and are not equipped, to handle such matters. We must have the guardrails in place to support the safe testing and deployment of these innovative technologies on our roads, while ensuring the safety of all road users and the maturity of the technology involved.

Automation has reached freight as well, with companies testing autonomous trucking operations big and small across corridors in Texas and other states. The autonomous trucking industry is poised to transform the way we move goods across the country, helping our freight industry move faster and smarter. With more goods being moved than ever before with the growth of e-commerce, we need technology solutions that make our freight

more efficient. ITS America supports heavy-duty trucking being included in a Federal AV safety framework and the Federal Motor Carrier Safety Administration (FMCSA) should help lead on this issue.

In any Federal AV safety framework, it is imperative that we consider the needs of first responders and give them the tools necessary to support AV operations and passengers of robotaxis. First responders should be able to have reliable and secure communication with AVs, and they should have access to proper training to deal with a variety of vehicle interactions.

We urge federal regulators to work with states, cities, localities, public transit, manufacturers, technology developers, and all other stakeholders on regulations that ensure the safe development of automated vehicles, including the surrounding infrastructure and integration into the broader transportation system.

Emerging Technologies

As we look to increase transportation safety, make travel more efficient, and bolster access to opportunity for Americans, emerging technologies will play a key role in helping us get there. Innovations such as digital twinning, drones, advanced air mobility and cargo delivery, and personal mobility wallets are key to unlocking economic potential and the future of our transportation ecosystem.

States and cities across the U.S. are currently using unmanned aerial systems (UAS), or drones, to speed up physical infrastructure assessment, manage disaster relief efforts, and plan for safer intersections and highways.

States like Florida and North Carolina are at the forefront of drone usage to assist with natural disaster operations, and it is critical that Congress continue to incentivize and encourage the use of drones. USDOT SMART Grants, like one in Cape Cod, Massachusetts, will facilitate the use of drones to monitor and analyze railroad infrastructure threatened by ground water variability. Another SMART grant will use drone technology to deliver and transport medical supplies in Maryland's rural Eastern Shore, giving critical care to people who need it most and reaching those in hard-to-reach places.[6]

ITS America encourages additional testing and development of safety models through partnerships at the state and local levels to promote the integration of drones. In addition, the U.S. has a critical opportunity to be leaders in homegrown drone innovation and manufacturing capabilities – helping spur economic growth while developing tools that keep communities safe.

Digital twinning can be used to enhance fleet operations, optimize infrastructure network operation, improve demand management for the power grid, and improve construction/planning for physical infrastructure assets. Digital twinning technology has helped Texas better plan for infrastructure design and construction activities. Using real-time data from traffic sensors, aerial imaging, and regular site inspections, the digital twin continuously updates to reflect changes in roadway conditions, traffic flow, and environmental impact. The digital twin allows engineers and project managers to visualize in-progress changes and adjust designs proactively, resulting in saved time and money. With such innovative tools at our fingertips, we should ensure that their use is encouraged and available to state and local agencies nationwide.

[6] State of Maryland. https://governor.maryland.gov/news/press/pages/governor-moore-announces-dollar17-million-in-federal-funding-for-eastern-shore-drone-pilot-program-to-improve-access-to-hea.aspx

Additionally, ITS America encourages the adoption of a multimodal transportation network in the United States, providing people and their communities with a range of safe and affordable transportation options that fit their unique needs. Communities across the country, like Columbus, Ohio and the Lake Traverse Reservation in South Dakota, are investing in transit improvements to encourage multimodal transportation and provide even more options to residents. Technology innovation is making multimodal transportation options more easily accessible and affordable for all Americans. As we look to build a safer and more efficient system that benefits our communities, we must use all of our tools – including different modes of travel – to reach our goals.

Whether it is by vehicle, bicycle, public bus, rail, or by air – people in communities across the country want access to mobility options that get them from point A to point B safely and efficiently while ensuring that the U.S. is taking full advantage of technological innovation.

Workforce Development and Job Creation

Millions of Americans rely daily on the talents and hard work of our transportation workforce for their own travel, shipments, and safety. As our economy has shifted into the digital age, our transportation workforce should reflect this reality.

Given the ever-changing nature of technology, today's transportation system requires technical expertise in data analytics, artificial intelligence, cybersecurity, and more skills that were once not even in the vocabulary of the industry. Technologies like automation and AI are here to stay, and it is critical that our workforce is ready to meet its challenges and take full advantage of the opportunities these technologies can bring in the field. With greater training, education, and investment in our workers we can have the most skilled and competitive transportation workforce in the world. We've seen how technologies and digital infrastructure can make our system safer, more efficient, and more resilient, but without a skilled workforce, we will fall short of achieving our shared vision for high-quality infrastructure and safer roads.

Through the further adoption of technology in the transportation sector, new roles, such as ITS technicians, system analysts, and digital infrastructure managers, will emerge. It is a matter of when, not if, transportation jobs will require advanced technical skills.

With a traffic signal taking up to 70 manual hours to re-time, AI can simplify this task and do it almost instantaneously, freeing up time for traffic engineers to work on more safety-critical projects.[8] Technology expands what transportation practitioners can accomplish with their time and resources while still allowing for strong, safety-oriented outcomes. Advanced Driver Assistance Systems (ADAS) are being deployed today in public and private fleets to improve driver safety and route efficiency, improving safety outcomes and job performance for bus and truck drivers in much the same way that autopilot capabilities improved the experience of airplane pilots – we must continue to invest in these solutions to leverage transportation system improvements for fleet owners and operators alike.

[8] Flow Labs. https://www.flowlabs.ai/solutions/traffic-signal-operations

Congress has the opportunity to put the U.S. transportation workforce ahead of the curve on technology and ITS America encourages greater Federal investment and leadership on preparing the transportation workforce for the digital age.

ITS America recently released a report on workforce gaps in the transportation sector, which highlighted the need for skills in data analytics, machine learning, cybersecurity, edge computing, and data privacy.[9] As the world around us gets more technologically advanced, it is critical that we have Federal leadership in ensuring our transportation workforce is prepared to meet the moment.

Investing in the future of our transportation system through training and new job pathways will create new, good paying jobs in communities across the country.

A strong workforce maintains the country's global competitiveness in transportation innovation, ensuring the U.S. remains a leader in infrastructure and that we have a more prosperous future.

[9] ITS America Workforce Community of Practice. https://itsa.org/advocacy-material/workforce-gaps-the-future-of-intelligent-transportation-systems/

Conclusion

Transportation technologies continue to provide compelling opportunities to achieve significant gains in safety, efficiency, and access to opportunity – gains that can only be marginally reached through traditional transportation approaches. The opportunity cost in neglecting investment in these innovations is readily apparent in the headlines we too frequently read – in annual reports on motorist and pedestrian fatalities, in concerning warnings about the transportation sector's resiliency to natural disasters, or in analysis of inefficiencies in our nation's supply chain and inadequacy in our infrastructure readiness. We see the cost ourselves when we wait in traffic on congested streets or lose a family member or friend to a preventable motor vehicle crash. These are problems that we have solutions for – transportation technology solutions that can be deployed today.

By prioritizing investment in technologies such as digital infrastructure, artificial intelligence, V2X communications, or any number of other transportation innovations, lawmakers, regulators, and transportation stakeholders alike will maximize the safety and efficiency of our transportation system, enabling us to embrace the next generation of transportation and infrastructure driven by intelligent transportation technologies.

This is a vision shared by stakeholders across the full breadth of the transportation sector – from state and city departments of transportation, metropolitan planning organizations, transit agencies, automotive manufacturers, technology companies, engineering firms, automotive suppliers, insurance companies, and research and academic universities, all of which make up the membership of ITS America. Join with us in promoting and utilizing the many technology tools available to build a safe and efficient transportation system and infrastructure.

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