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# A BETTER FUTURE TRANSFORMED BY INTELLIGENT MOBILITY

ITS America's Blueprint for a Safer, Greener, Smarter Transportation System

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**ITS AMERICA BLUEPRINT 2021** 

# INTRODUCTION

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.<sup>1</sup> Our members come to one table – ITS America – to shape the next generation of transportation and infrastructure driven by intelligent transportation technologies.

<sup>1</sup> The ITS America Board is represented by the following organizations: AAA, AECOM, Amazon Web Services, Arizona Department of Transportation, California PATH University of California Berkeley, California State Transportation Agency, Central Ohio Transit Authority, Cisco, Cubic, Econolite, Florida Department of Transportation, Ford Motor Company, General Motors, Google, PrePass Safety Alliance, HNTB, Iteris, Los Angeles Department of Transportation, MCity, Michael Baker International, Michelin, Michigan Department of Transportation, National Renewable Energy Lab, New York City Department of Transportation, Panasonic North America, Qualcomm, San Francisco Bay Area Metropolitan Transportation Commission, San Francisco County Transportation Authority, State Farm Insurance, Texas Department of Transportation, Texas Transportation Institute, Toyota, Virginia Department of Transportation, and Washington State Department of Transportation

## I. How Technology Can Accelerate the Transformation of Transportation

Over the last century, we have been improving the U.S. transportation system - but it is far from perfect. Interstates divide communities. Nearly 37,000 people die on our roads in a typical year. Our sector is responsible for 29 percent of the country's greenhouse gas emissions. Before COVID, Americans spent more than 100 hours a year on average in traffic.

Twenty years into the 21st century, technology presents us with an opportunity to reimagine our system and transform outcomes for generations – saving tens of thousands of people and reducing greenhouse gas emissions and congestion.

In some ways, COVID gave us a glimpse of what a reimagined system could look like – reduced greenhouse gas emissions, thanks primarily to less traffic. Bicycle sales, particularly for electric bikes, have soared – it has been great to see more people biking and walking, and we want to encourage using active modes of transportation. When making choices, however, people must consider the risk of getting hit by a car, which happens far too often to vulnerable road users like cyclists and pedestrians. Add to the equation that crashes have been on the rise during the pandemic, even with fewer cars on the road. If we broadly deploy V2X technologies - Vehicle to Everything, in which "X" includes all road users – we significantly reduce the chances of tragedy striking our friends and family. Whether they are driving on rural highways or walking to school in cities and suburbs, these technologies will communicate their position to approaching vehicles.

Wide-scale deployment has far-reaching implications. V2X technologies could eliminate or lessen the severity of up to 80 percent of non-impaired crashes. The National Safety Council estimates that 42,060 people died on our roadways in 2020, which is a shocking jump (eight percent) over the previous year, particularly given that traffic volumes were down because of the pandemic. The estimates saw the highest fatality rate increase (24 percent) in nearly 100 years. According to the Governors Highway Safety Association, pedestrian deaths increased 20 percent in the first six months of 2020. With the more than four million (estimated) injuries last year in addition the to the tragic loss of life, deploying V2X would equate to millions of families being spared pain and loss. We have designed safer vehicles and built safer roads, but we have lost tens of thousands of people every year for decades. The only way to move from tens of thousands toward zero is by deploying technology at scale to finally make American roadways as safe as possible – technology that connects vehicles to vulnerable road users that allows real-time communication resulting in decisions to avoid or minimize crashes.

In addition to making our roads safer, V2X technologies will also help reduce congestion – which will in turn reduce emissions. Non-recurring incidents are responsible for 55 percent of traffic congestion – whether it is a multicar pile up or a minor fender-bender, the entire system backs up. If V2X is widely deployed and these incidents are eliminated or dramatically reduced, congestion and emission levels would dramatically decrease.

Electrification and alternative fuel vehicles are also critical to reducing emissions and making our climate more resilient. Traffic is choking neighborhood air with harmful particulate matter and other toxic emissions, which lead to ground level ozone and results in higher rates of childhood asthma and early mortality. We see this across the country, disproportionally in minority and low-income communities. Zero-emission vehicles will alleviate the negative health outcomes associated with congestion emissions. Advancements in technology have made electric vehicles more affordable, allowed installation of high-capacity charging stations along and even in our roadways, and provided the opportunity to fuel these vehicles with clean renewable energy.

Micromobility was not in our vocabulary five years ago. Now, however, it has become an important part of our transportation system, particularly in urban environments. Incentivizing behavior to encourage more people to use micromobility options like walking, cycling, and scooters will free up valuable streetscapes and allow localities to create more spaces for people instead of cars. In addition, micromobility plays a key role in connecting people and neighborhoods long disconnected from fixed route transit and provides mobility options previously not available to those communities.

Using smart technology to improve our transportation system has come a long way from signalized traffic lights and variable message boards. Today, technologies such as AI (Artificial Intelligence), predictive analytics, edge computing, digital twinning, and machine learning are being developed and deployed, and some are already having a major impact. The Regional Transportation Commission of Southern Nevada (RTC) has worked with INRIX to digitize traffic rules on two stretches of roadway in Nevada, one in downtown Las Vegas. This technology allows public agencies to input roadway features, including pedestrian crosswalks, traffic signs, and intersection control into a platform that connected and autonomous vehicles can use to help navigate. It is not only safety critical – it is the tip of the iceberg in terms of operating the system more efficiently.

These types of technologies can tell us where and how traffic is moving at what time of day, which allows us to optimize use. The Central Ohio Transit Authority (COTA) and Waycare Tech launched a cloud-based AI system that will increase traffic safety and reduce travel time for area residents. It is the first AI implementation involving transit agencies and allows them, along with counties and public safety organizations - for the first time - to share, view, prepare, and react to real-time traffic information from 13 counties on a single platform.

All these technologies will help transform transportation and have a positive impact on our lives – but we cannot allow technology to create another digital divide. While many see highly autonomous vehicles (HAVs), for example, as just the newest toys for the wealthy, these vehicles can help us work toward racial equity and economic inclusion. They can provide needed transportation for those who do not have easy access to public transit, food for those who do not have access to it, and the freedom that comes with mobility for people with disabilities and the aging.

Just as we must invest in both our physical and digital infrastructure to achieve the benefits of technology, we must also invest in our transportation workforce. New technologies require us to prepare and retrain our workforce. We have an opportunity to keep workers safe, keep the systems resilient, and provide the resources and support necessary to train and develop a workforce that will support our 21st century transportation system.

## II. Transportation Technology Policy - A Safer, Greener, Smarter Future

**ITS** America's mission is to advance the research, development, and deployment of intelligent transportation technologies and solutions to save lives, improve mobility, promote sustainability, improve equity, and increase efficiency and productivity. Our focus is policy that accelerates the deployment of seamless mobility technology, connected and automated vehicle technologies, and smart infrastructure; policy that breathes new life into our transportation system by expanding investments in technologies that support smart communities; policy that encourages new models and modes of transportation, including micro-transit, ridesourcing, carshare, bikeshare, micro-mobility, and unmanned systems; and policy that does all of this while making our transportation system safer, greener, and smarter. Investments in these technologies should also address issues of transportation equity, so everyone gains access to mobility and opportunity, and the valid concerns of the transportation workforce. However, our first and foremost priority has always been, and continues to be, safety.

America's transportation system is used by hundreds of millions of U.S. residents to commute to work, obtain goods and services, and travel for leisure and work. The transportation system provides Americans with access to education, jobs, and healthcare and is vital to our nation's economy. The nation's transportation system accounted for 9.4 percent of gross domestic product in 2018, while transportation and related industries employed over 14.8 million people.

Unfortunately, traffic crashes on our nation's roadways cause 37,000 fatalities and more than 2.7 million injuries each year at an annual economic cost of \$800 billion. Congestion on our roadways wastes 8.8 billion hours and 3.3 billion gallons of fuel, at a cost of over \$140 billion each year. The transportation system is also the largest greenhouse gas (GHG) emitter in the United States, accounting for 29 percent of our nation's GHG emissions.

Despite the transportation system's importance to the country, our infrastructure is also in dire need of repair, rehabilitation, and modernization. In 2021, the American Society of Civil Engineers (ASCE) found that despite recent increases in infrastructure investment, our nation continued to face a daunting gap between investment levels and funding needs over the coming decades. Surface transportation alone faced a \$1.215 trillion funding gap between investment and needs from 2020 to 2029, including \$786 billion for roads and bridges and \$270 billion for transit. This surface transportation investment gap is in addition to the hundreds of billions of dollars of unmet funding needs for other critical infrastructure such as airports, waterways, and electricity.

ITS America believes that developing and deploying transportation technologies provides the opportunity to alleviate many of the negative impacts of our transportation system while providing more equitable and accessible mobility without leaving behind the transportation workers who allow our transportation system to function.

Intelligent mobility driven by the deployment of transportation technologies has the potential to significantly reduce deaths on U.S. roadways, reduce congestion and emissions, and provide equal access to mobility for all U.S. residents while growing the economy, providing better health outcomes, and increasing access to education and economic opportunity.

To fully access these benefits and realize a safer, greener, and smarter transportation system, federal transportation policy needs to be revised, expanded, and/or replaced to advance the development and deployment of transportation technology. Additionally, sufficient funding and certainty must be provided to build, maintain, and improve the transportation network needed to serve the mobility needs of the future. While funding stability and certainty are necessary, our nation's transportation policy must also be adaptable and regularly updated. Transportation technologies of today were not even contemplated when much of our country's infrastructure was constructed, and the nation's economy and the mobility needs of our residents have changed considerably in recent decades and will continue to change rapidly in the coming years. Fortunately, America's transportation innovators are hard at work solving the mobility challenges we face today, and the ones we will face tomorrow.

In the years since the Fixing America's Surface Transportation (FAST) Act was signed into law, automated and connected vehicle technologies have advanced significantly, the collection and use of big data has become an increasingly valuable tool for decision makers, the development and deployment of zero-emission vehicles of every type has advanced considerably, and Mobility on Demand services are transforming how we get around.

Just as transportation infrastructure was critical to the development of our economy in the 20th century, the maintenance of existing infrastructure, the development and deployment of transportation technology, and the advancement of intelligent mobility and smart infrastructure will be critical to our global competitiveness in this century. Advances in robotics, artificial intelligence, and wireless communications will define the way people, goods, services, and information move in the 21st century.

New forms of mobility are being deployed even as others are being developed. When cars were invented a century ago, Departments of Roads were created to build infrastructure for this new form of transportation. Those agencies are now Departments of Transportation, having grown to include many modes of transportation. Now those same agencies are evolving again to provide seamless multimodal mobility and build smart infrastructure that will support the technology-driven 21st-century economy, which is all about moving, people, data, and freight.

For these reasons, ITS America supports transportation policy that recognizes the added value of integrating technology into transportation infrastructure and services and provides funding for the rapid deployment of intelligent transportation technologies quickly and uniformly to transportation agencies and providers across the entire country.

## **Transportation Technology Areas**

Our nation is on the cusp of great opportunity in how we define our 21st century transportation system, one that can ensure greener communities, increased opportunity and equity, and safer streets for all Americans. The integration of technology is key as we build for the future. Technologies including automated, connected, shared, and electrified transportation and infrastructure will define the way people, goods, services, and information move; reduce greenhouse gas emissions from the transportation sector; and ensure that the United States continues its leadership in the technology-driven global economy.

ITS America has adopted policy that will advance the research, development, and deployment of transportation technologies to improve our transportation system by making it safer, greener, and smarter. These policies will have specific and measurable impacts to address the challenges our transportation system currently faces, including fatalities and injuries, congestion, emissions, and inequitable access. ITS America's policies are assigned to six broad categories:

- Smart Infrastructure
- V2X and Connected Transportation
- Automated Vehicles
- Mobility on Demand
- Emerging Technology
- Sustainability and Resiliency

An overview of ITS America's transportation policy is provided in the following pages, while a more detailed version of our policy can be found online at www.itsa.org/policy



#### Smart Infrastructure

ITS America's smart infrastructure federal policy supports the rapid integration of advanced technologies into transportation infrastructure, operations, and vehicles to improve roadway efficiency, reduce accidents, and facilitate the safe introduction of automated transportation and autonomous vehicles into the transportation system and cybersecurity safeguards—all critical underpinnings of smart infrastructure and will help ensure our transportation system is safer, greener, smarter, and more equitable.

As vehicles and infrastructure become more connected, our nation's transportation system faces increasing cybersecurity risks. ITS America supports federal transportation funding to protect our nation's transportation system and infrastructure from cybersecurity threats.

ITS America encourages the U.S. Department of Transportation to consider broadband a necessary foundation of any transportation infrastructure project and to make broadband infrastructure and its ancillary systems eligible for funding. Providing national, state, and local broadband infrastructure that supports the implementation of intelligent transportation systems, including connected and automated vehicles (CAV) and cooperative automated transportation (CAT), to improve the safety, mobility, equity, and operational efficiency of our surface transportation system is critical to meet the demands of rural, urban and underserved communities. As with the installation of guard rails, broadband communications that has the capability of achieving greater than 25 Mbps download and 3 Mbps upload, which is connected to our transportation infrastructure, will bring safety benefits. It is a key tool to reducing fatalities and injuries on our roadways.

Far too many vulnerable road users—including people walking and cycling—die on U.S. roads. In a year in which Americans have turned to walking and cycling as a socially-distant way to get around, walking and cycling fatalities have soared. ITS America supports establishing funding for local and state governments, MPOs, or regional transportation planning organizations to establish and implement Vision Zero plans that include technology deployment to improve detection of vulnerable road users, leading to safer roadways for all.

ITS America supports federal transportation policies that increase funding for research, development, demonstration, and deployment of intelligent transportation systems technology to secure the United States' global leadership in the development and deployment of advanced transportation technologies, including connected and automated vehicle technology, technology that can reduce the impacts of climate change, and technology that can help address inequities in access to transportation.

Our nation's transportation systems suffer from historic and ongoing inequities embedded in infrastructure, access, and cost. As we explore and fulfill the promise of new technologies, ITS America believes that we must embrace and support the paradigm shift occurring in our nation, learn from the lessons of the past, and incorporate transportation equity principles into policy, research, and implementation strategies. ITS America supports increased federal investment in intelligent transportation technologies, including smart transit, Mobility on Demand, autonomous delivery vehicles, and V2X technologies that protect vulnerable road users in a federally designated community development zone, including, but not limited to, qualified Opportunity Zone, Empowerment Zones, Promise Zones, or Choice Neighborhoods.

ITS America supports federal policies that strengthen our nation's commitment to public transit; Mobility on Demand, so everyone gains access to mobility and opportunity. We believe a safe, efficient, and modern public transit is a critical component in any successful implementation of Mobility on Demand. ITS America supports congestion pricing strategies to improve mobility, transportation equity, the environment, and make freight movements safer and more efficient.

To lead the 21st-century technology-driven global economy, America will need to invest in our digital infrastructure and rebuild and modernize our existing physical infrastructure. Our nation, through smart infrastructure investments, is on the cusp of a great opportunity in how we define our 21st-century transportation system, one that can provide greener communities, increased opportunity and equity, and safer streets for all Americans.



#### V2X and Connected Transportation

Vehicle-to-Everything (V2X) and connected transportation technologies provide significant opportunity to make our transportation system safer, greener, and smarter. These technologies allow vehicles to communicate real-time information directly with other vehicles, infrastructure, and vulnerable road users to prevent traffic crashes, relieve congestion, and reduce environmental impacts. These technologies can significantly reduce the nearly 37,000 fatalities and millions of injuries that occur annually on our nation's roads, improve mobility and reduce emissions by relieving congestion, and allow automated vehicles to identify objects beyond line-of-sight and operate cooperatively in the future.

ITS America's V2X and connected transportation policy addresses topic areas such as the development and deployment of connected, V2V, V2I, and V2P technologies and innovations; spectrum allocation and use; standards development; interoperability among technologies and infrastructure; cybersecurity; V2X application priority; and the future of V2X and connected technologies.

ITS America supports preserving the 5.9 GHz safety spectrum band for V2X transportation technologies, allowing newer V2X technologies such as C-V2X to operate in the band, and protecting V2X spectrum from interference related to outof-band emissions. ITS America advocates for the continued development and deployment of connected vehicle technologies so that we can realize the significant safety, environmental, and economic benefits that a robust V2X network will provide.



#### Annual Motor Vehicle Fatalities, 2015 - 2020

Preliminary estimates from the National Safety Council (NSC) on roadway fatalities and crashes show that 42,060 people died on U.S. roads last year – an eight percent increase from the previous year. The fatality rate increased by 24 percent, which is the highest increase in nearly 100 years.

Source: Estimates: NSC; Actual counts: Centers for Disease Control and Prevention, National Center for Health Statistics. Data are from the Multiple Cause of Death Files, 1999-2019, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program.



#### **Automated Vehicles**

Automated vehicles (AVs) have enormous potential to improve roadway safety and performance and contribute to more livable, vibrant, and equitable communities by providing more affordable mobility options; improving transit access by extending its reach; improving freight movement; and freeing up parking for other needs, including transit corridors, bike lanes, and walkable places, including sidewalks and plazas. AVs can provide mobility options for people with disabilities and seniors, as well as access for underserved communities. ITS America supports policies and regulatory frameworks that facilitate the safe testing, deployment, and integration of automated vehicles into the surface transportation system and address automated vehicles , self-driving trucks, automated transit, workforce impacts and mitigation strategies, and land use and transportation system integration.

Automated vehicle technology is accelerating rapidly. More than 80 companies across 36 states and Washington, DC, are testing automated vehicles. As a result, ITS America strongly believes a federal framework is needed to ensure their safe deployment. The absence of such a framework is leading to states developing their own automated vehicle requirements. ITS America urges the Administration to work with Congress on a bipartisan automated vehicle bill that maintains the federal government's traditional role over design, construction, and performance of highly automated vehicles; preserves state and local authority over their roads, including traffic laws and rules of the road; and makes clear that "performance" is consistent with the National Traffic and Motor Vehicle Safety Act related to vehicle or equipment performance and is not intended to be broadened beyond the National Highway Traffic Safety Administration (NHTSA) traditional interpretation.

ITS America supports a safe and reasonable increase in the number and duration of Federal Motor Vehicle Safety Standard exemptions because developers, working with NHTSA, cities, counties, and states, need experience operating automated vehicles in sufficient numbers to generate the broad data across a multitude of scenarios and environmental operating conditions necessary to ensure safety.

ITS America supports the flexibility of transit agencies to use federal funding to deploy automated vehicles to support public transportation services. We also support transit agencies in creating workforce development plans that outline how automated vehicles will affect transit workers. ITS America endorses the inclusion of trucks in federal framework automated vehicle legislation.

We urge federal regulators to work with states, cities, , public transit, manufacturers, and other entities on regulations that ensure the safe deployment of automated vehicles, including land use, infrastructure, and transportation system integration.





#### **Mobility on Demand**

The transportation sector in communities across the nation is undergoing historic transformations with the promise of greatly boosting the safety, access, equity, and sustainability of our transportation system. Mobility is less about moving vehicles and more about moving people, data, and freight. If COVID-19 has demonstrated anything, it is how dynamic, flexible mobility is necessary to keep America moving. From calling a Lyft or Uber that is providing nighttime service so transit agencies can surge drivers to daytime, to providing free scooter or bike rides for essential workers, to standing up a new microtransit route to provide better coverage, to accelerating the installation of infrastructure that support better public health or workforce outcomes, these mobility services and the partnerships with cities and transit agencies show how on-demand mobility services are embedded into our transportation ecosystem.

ITS America, through the MOD Alliance, supports a MOD program with funding that encourages flexibility with federal transportation funding to meet changing mobility needs including partnerships with companies offering shared use trips (car, bicycle, new mobility modes), data management, and other technology companies for first mile/last mile services and improved freight delivery, the integration of mobility services and technologies, and new fare and integrated payment technologies. This includes making it clear MOD should leverage public transportation investment while adding new terms in Title 49 and 23 U.S. Code that define MOD services such as micromobility, ridesourcing, ridesharing, microtransit as eligible partnerships and included in new programs.



#### Congestion Costs Each American Nearly 100 hours, \$1,400 A Year



Hours lost to congestion per year in the top five most congested urban areas in America

Source: 2019 INRIX Global Traffic Scorecard; analyzing congestion and the severity of top 66 urban areas.



#### **Emerging Technologies**

There is significant recent development of emerging technology in transportation, including technology related to rapid speed travel hyperloop, urban air mobility and cargo delivery, automated cargo delivery, and blockchain and integrated technology platforms.

ITS America encourages the use of a "complete streets" design approach to integrating unmanned ground delivery systems. ITS America supports addressing constraints to unmanned-aerial-vehicle (UAV) development and deployment in the next Federal Aviation Administration (FAA) reauthorization, to encourage additional testing and develop safety management models through partnerships at the state and local levels to promote the integration of UAVs. ITS America supports further exploration of emerging technologies such as hyperloop that could provide high-speed transportation and a thoughtful regulatory approach to ensure the safety of, and provide permitting opportunities for, such technologies.

ITS America's Emerging Technologies Standing Committee has prioritized advancing forthcoming policy related to personal delivery devices (PDDs) and digital twinning. PDDs (robotic delivery) are allowed to operate under specific regulations in roughly 36 percent of states and the District of Columbia. These robotic ground deliveries directly interface with the traveling public and the existing transportation infrastructure.

Digital twinning is the creation of a digital replica of a design or system. The replica is then used to test various scenarios to find "edge" situations where the system breaks down and to provide feedback into the system to enhance design or operations. In transportation, digital twinning can provide better management of assets and maximize the efficiency of the system. Transportation digital twinning can be used to enhance fleet operations, optimize infrastructure network operation, improve demand management for the power grid, and adjust construction staging.

The Emerging Technologies Standing Committee will examine how these systems operate in tandem with our existing systems and transportation users. As these new technologies grow, they will provide new considerations and opportunities for planning, design, safety, sustainability, operations, and partnerships.





### Sustainability and Resiliency

It is important to act now to enhance the sustainability and resiliency of our transportation system to reduce transportation's outsized impact on the environment and to protect infrastructure from severe weather events and other effects of climate change. There are numerous opportunities to increase the sustainability and resiliency of the transportation system, including through the advancement of electric vehicles and alternative fuel technologies, charging infrastructure, clean power generation, power grid capability and resiliency, infrastructure resiliency, roadside management, and advanced materials technologies. Investments in the deployment of technology and workforce development in these areas will also provide significant economic and employment benefits as the U.S. becomes a global leader in sustainable and resilient transportation. A more sustainable transportation system will also improve equity by helping to mitigate the negative environmental impacts of transportation, which are often most acutely felt in low-income and minority communities.

ITS America supports additional investments in sustainable transportation, including for light-duty vehicles, medium- and heavy-duty vehicles, vehicle charging and fueling infrastructure, workforce development, electric grid sustainability and resiliency, and research and development. ITS America supports: (1) continuing and expanding existing tax credits for the purchase or lease of light-duty zero-emission vehicles (ZEVs), making those tax credits refundable and transferable, and establishing a used ZEV tax credit; (2) providing federal incentives, either a point-of-sale rebate or tax credit, for the purchase of medium- and heavy-duty commercial ZEVs, transit vehicles, school buses, and other public-sector vehicles; (3) investing in ZEV charging and fueling infrastructure and eliminating the 23 USC Section 111 prohibition on commercialization in highway rights-of-way; (4) providing investment in public and private workforce development programs; (5) providing funding for grid infrastructure sustainability and resiliency; and (6) providing federal assistance for continued research and development for ZEVs and associated battery, charging, and fueling technologies.



## Total U.S. Greenhouse Gas Emissions by Sector (2019)



## **III. Policy Making Process**

ITS America operates six Standing Committees that develop our transportation policy: Smart Infrastructure, V2X and Connected Transportation, Automated Vehicles, Mobility on Demand, Emerging Technologies, and Sustainability and Resiliency. All our Standing Committees include representatives from a wide range of industry stakeholders from the public and private sectors, and each of the policies these Committees advance enjoy broad support from our diverse membership. Each Standing Committee supports ITS America's policy, programmatic, and strategic objectives related to advancing intelligent transportation for a safer, greener, smarter transportation future. The scope of each Standing Committee includes legislative and regulatory analysis, policy development, advocacy, and programmatic areas of focus.

Comprised of members and chaired by public and private partners, the Standing Committees help guide the engagement and knowledge building necessary to build strong and dynamic policy that is then forwarded to and approved by the ITS America Board of Directors. This is more than simply policy discussions; it includes expanded programs that elevate the policy development by diving into trends, deployments, and technologies and facilitating discussions about tough issues where ITS America's diverse membership can come together to speak with one voice. Research, analysis, network education, and transportation experience and expertise inform ITS America's policy platform.

Standing Committees develop policy by: (1) recommending smart infrastructure, V2X and connected transportation, automated vehicles, Mobility on Demand, emerging technology, and sustainability and resiliency policy development paths including areas of emerging interest and proposed policy frameworks; (2) receiving and reviewing analysis of federal, state, and local legislation, regulations, and policy; and (3) supporting efforts such as congressional hearings, committee discussions, agency rulemakings, and other proceedings by providing expert insight and organizational experiences.

Standing Committees also monitor national trends and circumstances relevant to transportation and propose appropriate action by: (1) creating frameworks by which the private and public sectors can fully engage in providing solutions; (2) inventorying and addressing common challenges in areas like highly automated vehicles, workforce impacts and mitigation strategies, and land use and transportation system integration; V2X application priority and the future of V2X and connected technologies; electrified vehicles and power grid capability and resiliency; the future of urban air cargo delivery and automated cargo delivery; or payment integration with mobility wallets; and (3) providing a forum where all have an equal voice to tackle the challenges and opportunities to advance intelligent transportation policy.



## CONCLUSION

Transportation technologies continue to provide compelling opportunities to achieve significant gains in safety, congestion, emissions reduction, and equity – 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 increases in motorist and pedestrian fatalities, in pessimistic prognostications about the transportation sector's carbon footprint, or in analysis of underserved communities without full access to mobility, thereby limiting their access to opportunities around them. We see the costs ourselves when we wait in traffic on congested streets, walk through areas suffering from poor air quality, or in the worst cases lose a family member or friend to a preventable motor vehicle crash. These are problems that transportation technology has solutions for – solutions that can be deployed today.

By prioritizing investment in technologies such as V2X communications, Mobility on Demand, zero-emission vehicle networks, smart infrastructure, 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 transportation system that is Safer, Greener, and Smarter for all.



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