

PHASE 1

WHY ADVANCE A VISION FOR TRANSPORTATION NOW?

Nearly 70 years after the initial segments of the Interstate Highway System were built – and nearly 140 years after the first automobile hit the streets – **it is time for us to set the vision for the next era of transportation, including individual and collection actions state departments of transportation (DOT) can take to achieve that vision.**

The United States is changing as we near our 250th anniversary. Our population is becoming older and more diverse, with significant variations in growth rates among regions. We remain the largest economy in the world – yet more than two out of five households struggle to afford basic necessities and increasing numbers of Americans have limited access to jobs, health care, education, and healthy food.

Our transportation system faces a confluence of challenges. We are emerging from the COVID-19 pandemic with significant uncertainty about how people will live, work, and travel and rolling disruptions to global supply chains. We also face the largest increases in traffic fatalities in more than 70 years and continued increases in the frequency and severity of extreme weather and other disaster events.

At the same time, we enjoy unprecedented opportunities. The accelerating pace of technological change – from automation to connectivity to energy - is transforming our lives, including how and when we travel. Shifting demographics and emerging technologies also support new ways of interacting, engaging, and collaborating. Additionally, the combination of the largest federal infrastructure act in a generation and billions of private investments in new technologies and business models provides the resources to approach longstanding challenges in a new manner.

AASHTO has initiated a multi-year visioning process

Phase 1 will culminate in AASHTO Board consideration of the vision framework and an accompanying resolution at its meeting in Orlando in October 2022 after considerable outreach with state DOT chief executive officers and partners.

Phase 2 will begin in early 2023 and include developing specific moonshots and a range of implementation actions state DOTs can take to realize the vision.



WHY THE STATE DEPARTMENTS OF TRANSPORTATION?

The state departments of transportation (DOT) can play a unique role defining and advancing a vision for the future.

State DOTs provide the perspective of each state while working closely with the federal government and local partners to achieve local, statewide, and national goals. State DOTs can address the distinct needs and preferences of every community – from urban to rural – and balance these needs with interregional and global flows of trade, travelers, and investment.

We have learned that we accomplish more working together. We operate within our political and physical contexts while recognizing transportation does not end at a city, county, or state border. We serve our states and communities more effectively when we collaborate with partners outside of transportation – such as health and human services organizations or private sector technology providers – so our decisions support the broader goals of our states and communities.

We are prepared to move toward a new vision because of the foundation we established over the past few decades.

All state highway departments have transitioned into multimodal departments of transportation. All states advanced asset and performance management capabilities and expanded their emphasis on freight and operations. In addition, after more than a decade of research and testing, we are now deploying automated, connected, electric, and shared vehicles along with other emerging technologies. Our states are demonstrating we can be laboratories for mobility with new partnerships.

We are prepared to implement a new vision because we are designed for action. We are the get-it-done/fix-it departments in our states. We pave potholes, replace traffic lights, and enable people and goods to move on a routine day and during extreme weather events and other disruptions. We have tremendous ability to deliver, coordinate, and convene – and **we believe we can do tremendous good for the people we serve.**

We are committed to work toward a new vision to deliver a brighter future for the people we serve. Growing polarization and declining trust in our civic institutions makes it difficult to seize opportunities or address the challenges facing our nation. This generational investment in infrastructure provides the opportunity not only to repair Americans' roads and bridges, but also to restore Americans' faith in the institutions that deliver this system. A collective vision maximizes the impact of taxpayer dollars and demonstrates how states large and small can work together to improve lives.

HOW DID WE DEVELOP THIS VISION?

This framework is the product of research by the National Cooperative Highway Research Program (NCHRP) 20-24 (138), including a synthesis of external trends and uncertainties shaping the future of transportation; interviews with state DOT leaders, partners, and thought leaders from other industries; and a two-day Vision Retreat involving 17 state DOT chief executive officers and 29 thought leaders from partner organizations and other industry sectors. The framework also reflects extensive engagement from the chief executive officers or leadership teams of all 52 state DOTs, as well as briefings to the Association of American State Highway Transportation Officials (AASHTO) Board of Directors and the boards for the four AASHTO regions.

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WHAT IS OUR VISION?

Our vision is for a transportation system focused on **connecting communities, moving people and goods, and meeting customer needs** at all scales – from local to global – delivered as a partnership between state DOTs and other public, private, and civic organizations.

This vision builds on our progress during the past few decades. It continues our evolution from building and maintaining state highways to managing a **comprehensive, multimodal transportation system** that supports community and economic development goals.

This vision also extends beyond serving the users of the system to more broadly serving **all customers** - the people and businesses who are impacted by transportation. It means focusing on how transportation impacts our daily lives as we commute to work, bring children to school, bring elderly parents to medical appointments, enjoy our outdoors, visit family and friends in other communities, and obtain food, clothing, and supplies. It also means eliminating disparities in affordability and service across communities and demographic groups and providing all Americans with access to opportunity.



A community-centered transportation integrates modes and services to enable seamless end-to-end trips at all scales:

- **Within communities** – connects people to jobs, services, and recreation through local street networks, sidewalks, trails, micromobility, and other human-scaled transportation.
- **Between communities within a region** – connects people to jobs, education, health care, and other services in both urban and rural areas through options including regional roads and transit, water, and air.
- **Between regions within a megaregion and between megaregions within the United States**– connects workers, goods, and information at the scale of the economy through high-speed ground, water, and air transportation.
- **Between U.S. and global trading partners** – connects trade, visitors, and information through world-class seaports, airports, spaceports, border crossings, and other gateways integrated with the surface transportation system.

Ultimately, community-centered transportation means viewing transportation through the lens of how it can enhance and sustain what makes a community special: a sense of **security** and **stability**, a sense of **connectivity**, and a sense of **belonging**. Transportation is not the end – it is a means to creating the communities of our dreams and places where people can thrive.



Our vision includes **six aspirational goals** that describe how the transportation system should function. These are intended as shared values for all state DOTs. Each state DOT may define success and define progress on each goal in a unique way.

VISION

COMMUNITY-CENTERED TRANSPORTATION

A transportation system focused on connecting communities, moving people and goods, and meeting customer needs at all scales, from local to global – delivered as a partnership between state departments of transportation and other public, private, and civic sector partners.

ASPIRATIONAL GOAL

OUTCOME

SAFE & SECURE

No fatalities or serious injuries to people using all modes of the transportation system; the transportation system has limited vulnerability to criminal activity, terrorism, and cyberattack and is not a conduit for human trafficking, smuggling, or spread of disease

ACCESSIBLE & AFFORDABLE

Affordable and convenient transportation options to access jobs, health care, education, food, recreation, and other services for all people and families, regardless of geographic location, age, ability, or socioeconomic status

SEAMLESS & RELIABLE

Convenient, human-centered choices available on demand to move both people and goods from origin to destination, with minimal delay and quick transfers between modes and systems

HEALTHY & THRIVING

Transportation investments that help grow prosperity and improve the health of all Americans

CLEAN & SUSTAINABLE

Zero net emissions of greenhouse gases and air quality pollutants, and enhancement of the natural environment

AGILE & RESILIENT

Communities protected against and able to adapt to and recover from extreme weather and climate trends, service disruptions, and other risks; transportation agencies able to adapt to risks, disruptions, and uncertainties



PHASE 2

WHAT MOONSHOTS CAN WE ACHIEVE?

Our vision will be built upon several bold ideas – or “moonshots” - delivered through the end of this decade and beyond through collective action among a large number of state DOTs and other partners. We are committed to further refining these concepts in Phase 2 and exploring how to advance the most promising ideas. We recognize, as in the first moonshot, these bold goals will focus and mobilize the best of our energies and skills.

WHAT IF WE...	WHAT MIGHT WE DO?	GOALS SUPPORTED
<p>Make aggressive progress toward Vision Zero; reduce highway fatalities by xx percent by 2030</p>	<ul style="list-style-type: none"> • Advance systemic solutions involving engineering, technology, behavioral change, and community design to reduce fatalities to levels not seen since the post-World War II era • Advance targeted solutions for pedestrians, bicyclists, and other vulnerable road users 	<ul style="list-style-type: none"> • Safe & secure • Accessible & affordable • Seamless & reliable • Healthy & thriving
	<ul style="list-style-type: none"> • Build and strengthen non-traditional partnerships with health, human services, and workforce development organizations • Close critical gaps in access to jobs, health care, education, recreation, and other services • Provide more mobility options for households - including the option to not travel • Increase the affordability of transportation 	<ul style="list-style-type: none"> • Accessible & affordable • Seamless & reliable • Healthy & thriving
	<p>Work with partners to reduce the share of households who cannot afford basic survival costs by xx percent by 2030 through enhanced transportation accessibility and affordability</p>	



WHAT IF WE...	WHAT MIGHT WE DO?	GOALS SUPPORTED
<p>Create a mobility marketplace so transportation works for our customers</p>	<ul style="list-style-type: none"> • Enable customers to choose the travel option(s) they want and need, including aspects like safety, convenience, accessibility, affordability, efficiency, and sustainability • Make it easy for people to budget and pay for the transportation services they consume • Ensure all customers can access mobility information and options, including customers who do not have access to a smart device, bank account, or credit card 	<ul style="list-style-type: none"> • Safe & secure • Accessible & affordable • Seamless & reliable • Healthy & thriving • Clean & sustainable
		
<p>Change how we operate and manage the transportation system</p>	<ul style="list-style-type: none"> • “Light up the Interstates” - deploy and enhance a nationwide digital infrastructure to support mobility and connectivity needs, using Interstate highway right of way as a starting platform • Deploy “Transportation 4.0” - including vehicle automation, connectivity, and artificial intelligence - to enhance safety, mobility, and access through public/private collaboration • Advance human-centered, machine-enabled transportation to enhance safety, mobility, and access, as well as options to substitute communications for travel 	<ul style="list-style-type: none"> • All goals



WHAT IF WE...	WHAT MIGHT WE DO?	GOALS SUPPORTED
<p>Improve energy efficiency and reduce transportation emissions xx percent by 2030</p>	<ul style="list-style-type: none"> • Deploy a nationwide network to use electricity and alternative fuel sources for transportation • Improve energy efficiency and reduce emissions throughout the transportation system lifecycle, from construction to operations • Use the transportation system generate and store energy, such as solar highways and pavement sensors 	<ul style="list-style-type: none"> • Affordable & accessible • Seamless & reliable • Healthy & thriving • Clean & sustainable • Agile & resilient
		
<p>Rethink how we connect communities and regions</p>	<ul style="list-style-type: none"> • Develop more options for how we connect communities, regions, and megaregions to meet customer needs, including next-generation transit, advanced air mobility, and high-speed ground transportation • Create "Interstate 2.0": rebuild critical corridors with advanced design and materials and multiple modes and uses; close connectivity gaps on highway, rail, water, and air to support interstate commerce • Use corridor rights of way as pathways for mobility, energy, water, broadband, and other systems 	<ul style="list-style-type: none"> • All goals
<p>Prioritize strategies and investments to strengthen communities</p>	<ul style="list-style-type: none"> • Build and sustain diverse, inclusive partnerships reflecting community visions and needs at all scales • Make major transportation decisions in collaboration with community visions and customer needs • Focus planning processes, performance measures, and investment decisions on building and sustaining communities • Balance the needs and preferences of multiple scales of communities and customers impacted by transportation decisions, from local to global 	<ul style="list-style-type: none"> • All goals



HOW DO INDIVIDUAL STATE DOTs MOVE TOWARD THE VISION?

Each state DOT can take actions to advance the vision in ways that work for them today and in the future. A spectrum of actions will be developed that addresses the levers of change available to a state DOT including both external and internal actions. For each lever of change, a spectrum of actions from modest to transformative change will be identified in Phase 2, building on the examples below. For some DOTs transformative change already is happening; for others, a modest change may be a challenge. Through these levers of change, each individual state DOT will advance the vision, producing collective national impact. Beyond these specific examples, each state DOT will identify additional actions that will challenge and evolve their departments and programs.

LEVER OF CHANGE	EXAMPLE ACTIONS		
	MODEST CHANGE	SIGNIFICANT CHANGE	TRANSFORMATIVE CHANGE
EXTERNAL LEVERS			
Partnerships	Support nontraditional partnerships (for example, serving on housing coalition or public health working groups)	Establish working groups to maintain regular engagement with nontraditional partners	Share planning and delivery responsibilities with MPOs, RTPOs, and local governments; assist with transportation needs for health care or social service partners
Communications & customer service	Establish and maintain regular stakeholder and customer service engagement channels via multiple media	Deepen understanding of needs of specific customer groups, such as asset-limited, income-constrained, employed households	Establish mobility manager functions to incentivize, develop, fund, and advance customer-focused services
Land use coordination	Review transportation impacts of proposed land use changes and consider community impacts of transportation investments during the planning process	Incorporate local and regional land use planning objectives and related policies such as housing into long-range transportation planning process	Play active role in shaping land use decisions, functioning as a long-term planning arm for the state in partnership with local governments
Multi-state or megaregional coordination	Meet regularly with neighboring states to coordinate on common initiatives	Align investments and operations on multi-state corridors to meet customer needs	Develop multi-state compacts to advance solutions benefitting multiple states



INTERNAL LEVERS			
Policies & regulations	Review and modernize existing rules and processes to reflect emerging mobility	Strengthen tools and processes for benefit/cost analysis, tradeoff analyses, and risk analyses	Develop policies to leverage and share technology, data, and private investments while focusing on public good
Plans & programs	Increase emphasis on community vision/values in planning process	Enhance community engagement at all phases of planning; flag community-priority projects for incorporation into programs	Redesign the planning process with community vision at the center
Assets & right of way	Maintain assets in state of good repair; identify potential vulnerabilities to extreme weather or other risks	Incorporate resilience considerations into asset management decisions and right of way management plans	Strategically assess function of existing right of way and assets; make decisions to renew, repurpose, decommission, or relocate
Investments	Rightsize project designs to reflect customer needs	Establish an ROI framework with broad-based analysis of transportation's outcomes, including community impacts	Establish cross-sector partnerships with public and private entities to pool resources for investments that integrate transportation with other critical infrastructure
Technology & data	Continue research and testing of new technologies and data sources	Establish data sharing agreements with private sector and local governments	Create "Transportation 4.0" technology partnerships with multi-use corridors or toll authorities as testbeds
Human resources	Strengthen staff recruitment, development and retention; update core competencies with greater emphasis on customer service and innovation	Deepen skills in behavioral psychology, data analytics, and emerging technology	Adapt recruiting and retention strategies to evolve the DOT workforce to be more representative of the people we serve
Organization & governance	Strengthen cross-functional teams and break down internal silos	Create offices of strategic planning/management or innovation strike teams	Reorganize DOTs to function like private enterprises, while working for the public good

