

ITE Policy Recommendations

Authorization of the U.S. Surface Transportation Program

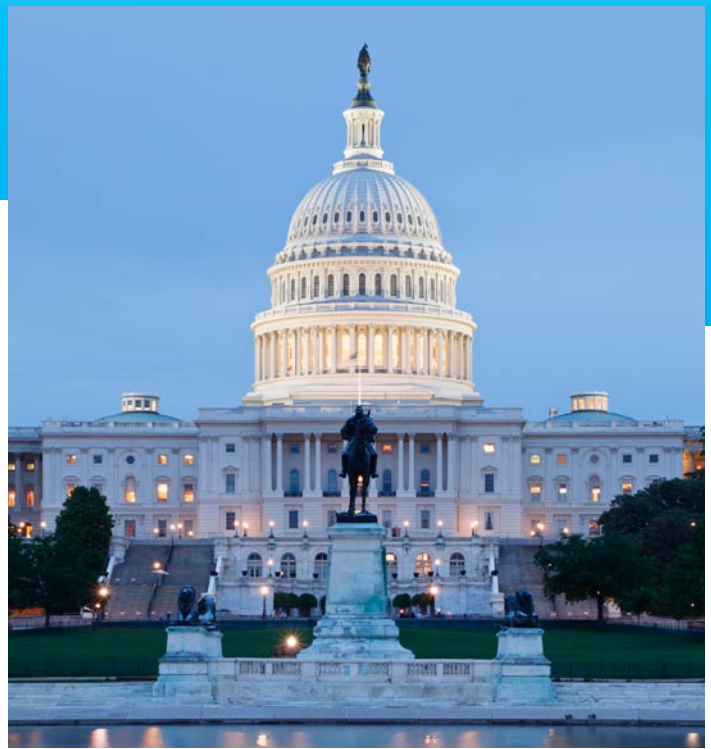


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Institute of Transportation Engineers



National Policy



“The transportation system has its setting in a dynamic economy, and hence the problem we face is and will be a constantly changing one.

No ‘final’ solution will ever be achieved. The problem, rather, is to set up machinery and to formulate guiding principles whereby continuing adjustment can be made to new situations as they develop; to changes in the technology of transport; to changes in the character of demand for transportation service; to changes in economic organization; and finally to changes in national policy.”

*Frederic Delano, Chairman, 1942
National Resources Planning Board,
Transportation and National Policy*

It has been more than 60 years since the National Resources Planning Board wrote those words to then President Franklin D. Roosevelt. Today the concept is more relevant than ever. The issues remain the same. Our surface transportation system is vital to our economy, global economic leadership and quality of life. Accordingly, the goals and objectives set forth in the next surface transportation authorization must be clear about what is to be accomplished and maximize the inherent advantages of each mode to contribute toward a safer, more effective and efficient national intermodal transportation system.

The current system faces trends and unique challenges that require a federal solution. This authorization must take into account an aging population, crumbling and operationally distressed infrastructure, growth in metropolitan congestion, the twin challenges of energy and climate change, increasing freight traffic driven by our service economy, security issues that span every mode, the continuing toll transportation-related injuries and fatalities have on our lives and a finance structure unable to respond to needs.

Our transportation networks carry the lifeblood of our nation’s economy and are at the root of our economic stability. Yet, the deficit gap between traditional transportation revenue sources and the public’s mobility needs is growing while other means of leveraging resources have grown less appealing to the American public. The credibility of the federal surface transportation program in the eyes of the public depends on an authorization that provides a vision and purpose and then delivers the programs and performance measures that are targeted to simultaneously address these issues.



ITE has chosen to focus on several recommendations related to safety, transportation operations, financing/funding, research and workforce development.

-  ■ Establish national safety standards to cut surface transportation fatalities in half from current levels by 2025.
-  ■ Support funding for low-cost operational approaches to alleviate congestion, improve safety and reduce energy consumption and greenhouse gas emissions.
-  ■ Require performance measurement to document benefits of investment
-  ■ Include funding support for the strategies identified in the National Unified Goal for Traffic Incident Management.
-  ■ Develop a federal freight policy that includes a dedicated source of funds to address critical freight infrastructure and mobility needs, including critical commerce corridors and improvements related to ports of entry and intermodal supply chains.
-  ■ Support mechanisms that will better diversify revenue generation. Taxes on vehicle miles traveled, tolling, congestion pricing, public-private partnerships, bonds, infrastructure banks, carbon-based taxes and use of general fund resources are all viable options.
-  ■ Support the National Surface Transportation Policy and Revenue Study Commission recommendation that transportation funding investments must be performance based and focused on cost-beneficial outcomes and accounting for economic, environmental and social costs.
-  ■ Develop performance standards, metrics and reporting processes to enable performance-based monitoring and funding for all projects.
-  ■ Increase federally funded research to determine the most effective combination of measures to mitigate the effect of transportation on climate change and to adapt transportation facilities and systems to the impacts of climate change.
-  ■ Continue support for federally funded fellowships and grants and state education and training programs.
-  ■ Continue flexibility of federal surface transportation program funds to be eligible for use by state and local transportation agencies for education and training activities.
-  ■ Authorize and fund a 2nd National Transportation Workforce Summit.
-  ■ Provide funding for National Transportation Week and direct the program to be spearheaded by the Office of the Secretary.



MAKE A DIFFERENCE IN TRANSPORTATION SAFETY

There is no greater responsibility in the transportation profession than to provide the safest possible system for moving people and goods. With more than 42,000 people killed and 2.5 million injured each year and the societal costs at \$230 billion per year in the United States,¹ transportation safety has a profound impact on our quality of life and the economy.

Accordingly, Congress must support research and implementation of technologies, designs and practices that can lead to significant and measurable safety improvements. Together we must change the culture of safety to one that will not accept the devastating extent

to which death and serious injuries currently affect our families and communities.

RECOMMENDATION

■ Establish national safety standards to cut surface transportation fatalities in half from current levels by 2025. The strategies to reach this goal include an emphasis on the following activities that were outlined by the National Policy and Revenue Commission:

- ◆ highway improvements to reduce roadway departures, create a safer environment for pedestrians and bicyclists and reduce intersection crashes;
- ◆ stronger enforcement of safety laws including speed limits, seat belt, red-light running and impaired driving—making the maximum use of technology to do so;
- ◆ enhanced adjudication of highway safety laws to impose penalties commensurate with the seriousness of the offenses;
- ◆ enhanced motor carrier safety programs to reduce crashes caused by driver fatigue, unsafe operators and automobile drivers who do not understand how to share the road with large trucks;
- ◆ stronger licensing requirements that take into account age and experience;
- ◆ highly visible public education campaigns to make everyone aware of the severity of highway safety problems;
- ◆ low-cost safety enhancements such as guardrails and striping;
- ◆ enhanced efforts to deploy technology, equipment and grade-separated rights-of-way to reduce rail-highway grade crossing accidents and reduce trespass incidents; and
- ◆ research and deployment of new technologies that hold the promise of substantially reducing highway fatalities, such as improvements in vehicle safety featuring IntellidriveSM (formerly vehicle infrastructure integration or VII) that could help avoid unsafe movements in traffic while improving traffic flow.²

¹ *Optimizing the System, Saving Lives, Saving Time*, American Association of State Highway and Transportation Officials. Publ. No.: OTS-1, 2004.

² *Transportation for Tomorrow: Report of the National Surface Transportation Policy and Revenue Study Commission*, December 2007.

KEEP AMERICA MOVING



According to the Texas Transportation Institute's *2007 Urban Mobility Report*, in the United States' 437 urban areas, "congestion caused urban Americans to travel 4.2 billion hours more and to purchase an extra 2.9 billion gallons of fuel for a congestion cost of \$78 billion...an increase of 220 million hours, 140 million gallons and \$5 billion from 2004."³

³2007 *Urban Mobility Report*, Texas Transportation Institute.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) significantly changed the way safety issues were addressed. The Highway Safety Improvement Program and its emphasis on state development of strategic highway safety plans was a significant step toward achieving reductions in traffic fatalities and serious injuries, particularly with its emphasis on severe safety needs and high-risk rural roads. ITE supports this federal mechanism that encourages states to identify, analyze and prioritize highway safety problems. States had until October 1, 2007 to develop a state strategic highway safety plan. Congress and the U.S. Department of Transportation must ensure that states fully implement those plans.

ITE membership is largely composed of public and private sector transportation professionals responsible for the day-to-day management and operation of the transportation system. A primary goal of these practitioners is to maintain the system and improve the safety and mobility of the traveling public. With constraints on funding, ITE believes that investments in safety and operational improvements, which are lower in cost than major projects, can maximize the efficiency and effectiveness of local road facilities and support efforts to reduce environmental impacts.

The rapid fluctuation in the price of fuel over the past few years and the urgent need to adopt transportation measures to help mitigate and adapt to climate change have created a national debate on the need to reduce fuel consumption and seek alternatives to U.S. dependency on fossil fuels. The application of transportation operations engineering techniques to all transportation operations, including roadway, transit, walking and bicycling, can provide a significant contribution to the reduction of congestion and fuel usage. Because of their relatively small scale, these projects could be designed and constructed in a relatively short period of time and provide jobs, congestion relief and/or safety benefits that are immediately noticeable to the traveling public.

SIGNAL TIMING

According to the National Transportation Operations Coalition's (NTOC) 2007 *Traffic Signal Report Card*, investment in a traffic signal timing program would leverage an investment with a 40:1 benefit-cost ratio and would result in benefits of as much as \$45 billion per year.⁵ NTOC's report card further states that a few small changes in local management and operations of traffic signals could result in national fuel savings of up to 10 percent or 17 billion gallons per year and a national reduction of up to 22 percent in harmful emissions. In addition, to be in conformity with the Environmental Protection Agency's Energy Star Program, as enforced by the Energy Policy Act of 2005 (PL 109-58), traffic signal maintenance and relamping across the United States requires installation of new and/or replacement of incandescent signals with LED signals. LED units meeting the Energy Star requirements use 75 percent less energy and last 35 to 50 times longer than incandescent bulbs.

RECOMMENDATIONS

- Support funding for low-cost operational approaches to alleviate congestion, improve safety and reduce energy consumption and greenhouse gas emissions. These approaches may include funding priority for local traffic signal operations, relamping, traffic smoothing, incident management and traveler information programs.

- Require performance measurement to document benefits of investment.



It is estimated that improper traffic signal timing accounts for 5 to 10 percent of all traffic delay, or 295 million vehicle hours of annual delay on major roadways alone.⁴

⁴ "Temporary Losses of Highway Capacity and Impacts on Performance: Phase 2." Report No. ORNL/TM-2004/209. Oak Ridge, TN, USA: U.S. Department of Transportation, Oak Ridge National Laboratory, November 2004.

⁵ 2007 National Traffic Signal Report Card Technical Report, Appendix D.



INCIDENT MANAGEMENT

As travel on U.S. highways reflects the fluctuation of fuel prices and vehicle miles traveled, so do incidents, which are a major cause of congestion, especially on urban roadways. Forty to 50 percent of all nonrecurring congestion is associated with traffic incidents.⁶ Effective traffic incident management requires a partnership of transportation professionals and the emergency responder community. The practices and procedures associated with traffic incident management serve to reduce incident duration, thereby minimizing congestion. Quick clearance of traffic incidents also reduces the risk of secondary crashes and reduces the time that emergency responders are exposed to the dangers of working in traffic. One of the leading causes of death and injury for emergency responders is being struck by vehicles while working alongside the roadway.

ITE has endorsed the National Unified Goal (NUG) for traffic incident management. The goal identifies 18 strategies to achieve three primary objectives: responder safety; safe, quick clearance; and prompt, reliable, interoperable communications. The strategies include multidisciplinary training, recommended practices and procedures, goals for performance and progress, beneficial technologies and partnerships to promote driver awareness.

RECOMMENDATION

■ Include funding support for the strategies identified in NUG and ensure activities associated with incident management incorporate the necessary stakeholders to improve safety and reduce congestion.

FREIGHT MOBILITY

ITE policy encourages the use of planning, operational, administrative and technological measures to facilitate the safe, efficient and environmentally favorable movement of goods and to improve productivity of the intermodal transportation system. The federal freight system should include highways, rail, ports, marine and air as critical interrelated components contributing to our nation's role in the global economy. Shippers and providers need more options on highways and barge and rail lines to avoid costly time delays, including smoother interfaces between trucks and trains so that the growing reliance on intermodal supply chains becomes the norm rather than the exception.

RECOMMENDATION

■ Develop a federal freight policy that includes a dedicated source of funds to address critical freight infrastructure and mobility needs, including critical commerce corridors and improvements related to ports of entry and intermodal supply chains.

⁶The AAA Crashes vs. Congestion Report: What's the Cost to Society?, AAA, Cambridge Systematics Inc., March 2008.

DIVERSITY IN FINANCING AND FUNDING SUSTAINABILITY

Financing

As our transportation system ages, there is increasing demand for transportation services and system improvements. Revenue streams and traditional funding mechanisms, such as the Highway Trust Fund, are unable to keep pace. Federal highway user fees have not been increased in nearly 15 years. In addition, public sentiment, national energy and environmental policies are pushing to reduce gasoline usage by improving fuel efficiency of vehicles and encouraging the use of alternative fuel resources. It is clear that the ability to rely solely on the current funding source is no longer viable. Raising user fees on motor fuels will provide a short-term jump in Highway Trust Fund revenue, but it is not a long-term solution. Any future financing mechanisms must be sustainable and must include adequate provisions to protect the public interest.

RECOMMENDATION

■ Support mechanisms that will better diversify revenue generation. Taxes on vehicle miles traveled, tolling, congestion pricing, public-private partnerships, bonds, infrastructure banks, carbon-based taxes and use of general fund resources are all viable options.

Funding

ITE supports a predictable, dependable and adequate source of transportation funding for all modes, which achieves a proper balance between capital and operations/maintenance programs for transportation facilities. The increase in earmark-funded projects over the past two decades has exploded, from a mere handful in 1981 to thousands in SAFETEA-LU. The Alaskan “bridge to nowhere” was just one example. With this explosion came a plethora of projects that stretched relationships to transportation, weakening the systems that Congress put in place to identify and prioritize programs. This trend has reduced the effectiveness of the limited resources available and eroded the strength of the transportation system and its ability to support safer and more efficient movement of people and goods.

RECOMMENDATIONS

■ Support initiatives to vet congressionally directed funding to ensure it meets documented and prioritized needs.

■ Support the National Surface Transportation Policy and Revenue Study Commission recommendation that transportation funding investments must be performance based and focused on cost-beneficial outcomes and accounting for economic, environmental and social costs.

■ Develop performance standards, metrics and reporting processes to enable performance-based monitoring and funding for all projects.



INVEST IN RESPONSIBLE RESEARCH

Transportation research is critical to advancing technology and improving safety. It is an essential tool for transportation providers in developing practical solutions to problems encountered in the design and daily operation of the national transportation system. Furthermore, research often identifies ways to plan, design, construct and operate our transportation systems more economically. This allows us to stretch scarce transportation funding and use it more effectively in solving transportation problems.

ITE supports ongoing research and technology transfer, with an emphasis on practical applications and operational improvements, as well as the provision of adequate funding for such research by governmental agencies, academic institutions and the private sector. Funding should be based on programs focused on real solutions to problems of safety, congestion relief, transportation finance, transportation energy and climate change, with a finite timeframe, defined scope and deliverables.

RECOMMENDATIONS

- Continue funding for the State Planning and Research Program and the cooperative research programs (transit, freight and hazardous materials).
- Continue funding for ITS research programs focusing on traffic management center operations, traffic incident management, traffic signal system management, public transit management, advanced traveler information systems and Intellidrive.SM
- Focus research to identify the next generation of transportation modeling. Project sponsors are increasingly requesting assessments of a project's carbon footprint. This tool could provide consistency in evaluating national priorities and could assist states and localities in more predictably reaching environmental targets.

Climate Change

ITE supports measures that nationally reduce fossil fuel consumption and the emission of greenhouse gases (GHG). This reduction can be accomplished through more efficient traffic operations to reduce congestion and better manage incidents, reduced vehicle miles traveled through pricing and other means, changes in land use patterns, investment in public transit and application of new power and lighting technologies. Transportation professionals recognize the causal relationship of GHG, human activities and transportation and their roles in global climate change. However, the community needs additional information to more proactively affect this relationship. Additional research and modifications to current practice will need to be made to improve infrastructure resilience and sustainability, emergency planning and evacuation and to recommend modifications to design and planning standards. According to a Transportation Research Board report, TRB Special Report 290: *Potential Impacts of Climate Change on U.S. Transportation*

- ◆ Climate change will affect every mode of transportation and every region in the United States, and the challenges to infrastructure providers will be new and often unfamiliar.

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- ◆ Climate change will affect transportation primarily through increases in several types of weather and climate extremes, including intense precipitation events, intense hurricanes and higher temperatures.
 - ◆ State and local governments and private infrastructure providers will need to incorporate adjustments for climate change into long-term capital improvement plans, facility designs, maintenance practices, operations and emergency response plans.
 - ◆ Transportation providers will need to work more closely with weather forecasters and emergency planners and assume a greater role in evacuation planning and emergency response.
 - ◆ Design standards will need to be reevaluated and new standards developed as progress is made in understanding future climate conditions and the options for addressing these conditions.
 - ◆ Transportation planners will need to consider climate change and its effects on infrastructure investments. Planning timeframes may need to extend beyond the next 20 or 30 years.
 - ◆ The institutional arrangements for transportation planning and operations will need to be changed to incorporate needed cross-jurisdictional and regional cooperation.⁷

RECOMMENDATION

- Increase federally funded research to determine the most effective combination of measures to mitigate the effect of transportation on climate change and to adapt transportation facilities and systems to the impacts of climate change.

⁷TRB Special Report 290: *Potential Impacts of Climate Change on U.S. Transportation*. Washington, DC, USA: Transportation Research Board, March 2008.



MEET THE TRANSPORTATION WORKFORCE CHALLENGE

According to the Federal Highway Administration (FHWA), 50 percent of the workforce responsible for planning, developing and managing the transportation system will be eligible for retirement in the next five years. Nearly five percent of state transportation professionals are retiring each year. Public agencies, universities and the private sector are competing for the same small qualified pool, making recruitment and retention of professionals and technicians a significant challenge.

In 2002, FHWA and Federal Transit Administration (FTA) convened a National Transportation Workforce Summit. It brought together transportation and academic leaders to discuss workforce challenges, specify the extent of the issue, identify stakeholder impact and examine how partnerships could be forged. Since that time the changes in transportation technology, emphasis on measurable safety improvements, new concepts of context-sensitive design and land use considerations require new skills sets and a multidisciplinary workforce to meet these demands and efficiently use limited resources.

Professional societies, associations and community colleges can leverage resources to raise such awareness by engaging the public in understanding the impact of transportation investment, the role of transportation in our economic growth and the promotion of transportation as a multifaceted career option. National Transportation Week, held annually in the month of May, is a vehicle for such an effort, yet receives tepid support from U.S. DOT.

RECOMMENDATIONS

- Authorize and fund a 2nd National Transportation Workforce Summit to be convened by FHWA, FTA and Research and Innovative Technology Administration to discuss progress, changing challenges and opportunities, options for future collaboration and actions needed to sustain a high-quality transportation workforce in the United States.
- Provide funding for National Transportation Week activities and direct the program to be spearheaded by the Office of the Secretary.
- Continue support for federally funded fellowships and grants and state education and training programs.
- Continue flexibility of federal surface transportation program funds to be eligible for use by state and local transportation agencies for education and training activities.

TRANSPORTATION IS A NATIONAL ISSUE

With the implementation of the American Reinvestment and Recovery Act and heightened discussions regarding federal government priorities, sustainability, livability and the environment, transportation is in the forefront of national policy. ITE encourages Congress to strongly consider the recommendations included in this document, which provide guiding principles for making tangible contributions toward a more sustainable, safe and efficient national intermodal transportation system.

INSTITUTE OF TRANSPORTATION ENGINEERS

ITE is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs. ITE facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development and management for any mode of transportation.

Through its products and services, ITE promotes professional development of its members, supports and encourages education, stimulates research, develops public awareness programs and serves as a conduit for the exchange of professional information.



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