



Testimony of Deron Lovaas
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On
Legislative Issues for Transportation Reauthorization
Before the
U.S. Senate Environment and Public Works Committee
Thursday, July 21, 2011

Chairman Boxer, Ranking Member Inhofe, Members of the Committee, thank you for inviting me to testify at this hearing on improving and reforming our nation's surface transportation programs. The Natural Resources Defense Council (NRDC) as founded in 1970 by a group of law students and attorneys, we use law, science and the support of 1.3 million members and online activists to protect the planet's wildlife and natural places and to ensure a safe and healthy environment for all living things.

The Threat of the Status Quo

Our outdated national transportation policy undermines America's safety, energy and climate security, and economy. Roads and bridges, transit systems, and other critical assets across the country have not been well maintained. This disinvestment, in addition to hurting the performance of the transportation network, is increasingly posing a safety hazard as we tragically saw on I-35 in Minnesota.

At the same time, even as Presidents from both political parties as far back as Richard Nixon have called for reductions in oil dependence, we remain as dependent on oil as ever, often imported from hostile countries. Our overwhelming reliance on oil as a transportation fuel coupled with few economical and convenient alternatives to automobiles for moving people and goods have kept America shackled to a volatile and costly global oil market.

Finally, while our transportation network has fostered tremendous economic growth, investments in the system, if not done right, can be unproductive or even wasteful. Inefficiencies – in the form of traffic congestion, high transportation cost burdens for businesses and families, and negative environmental effects from air and water pollution to climate change – further undermine the economic benefits. We need a program overhaul to more effectively leverage federal dollars as a means to boost economic productivity and competitiveness.

While state and local transportation officials have a shared role in fixing our transportation system, reforming and improving federal transportation policy is critical to our success in changing any of these trends. Now is the time to create a safer, smarter, and cleaner transportation network for the future, by:

- **Ensuring that transportation dollars are invested in projects that bring the highest returns by requiring performance-based planning and accountability for outcomes;**

- **Prioritizing the rehabilitation of aging roads, rail lines and bridges, and ensuring that all transportation facilities are well-maintained for optimal use and operation;**
- **Focusing improvements to the transportation system on projects that help to reduce our dependence on oil;**
- **Funding and financing maintenance, operations and growth of the system;**
- **Improving project development and delivery;**
- **Developing a national goods movement strategy; and**
- **Protecting our water quality and wildlife populations.**

By working together to develop and pass a strong, coherent national transportation policy, Congress and the Administration can enhance mobility, boost the economy, increase our security, and improve the environment.

Investing Wisely: Getting the Most Economic Bang for Transportation Bucks

We are a nation connected by transportation links. Imagining a world devoid of Interstate Highways, or intercity rail, or metropolitan public transportation systems clarifies this fact. We would be faced with gridlock and paralysis. Ranchers and farmers would be unable to get products to domestic and global markets. Manufacturers of parts for vehicles would be unable to ship to their business partners in the U.S. or overseas. Transportation is a key means to a variety of ends that yield a vibrant economy.

Thankfully, we have built a tremendous transportation system, which continues to pay productivity dividends. Overall, about one-third of the value of U.S. assets is locked up in physical infrastructure (e.g., buildings, roads, transit lines, etc.).¹ Transportation-driven GDP (a broader measure which attempts to capture all value-added generated to meet the economy's transportation demand, plus transportation services that contribute to non-transportation sector activity) was estimated at 16.5 percent of GDP in 1997.² And somewhat more specifically, the transportation services we rely on to do business represent about \$1.1 trillion (2000 dollars) in 2006, equal to 9.8 percent of GDP.³

Many studies have found evidence of large private sector productivity gains from such public investments in infrastructure, in many cases yielding higher returns than private capital investment.⁴ For example, the recent report *Economic Impact of Public Transportation Investment*, prepared for the Transit Cooperative Research Program (TCRP), presents a comprehensive methodology for calculating the broad economic impacts of public transportation investment, in a manner parallel to the advanced practices used in the United Kingdom.⁵ For every \$1 billion of annual investment, public transportation investment over time can lead to more than \$1.7 billion of net annual additional GDP due to cost savings. This is in addition to the \$1.8 billion of GDP supported by the pattern of public transportation spending. Thus, the total economic impact can be \$3.5 billion of GDP generated per year per \$1 billion of investment in public transportation. This is a substantial return on investment of 3.5 to 1, not including environmental and social benefits. However, there is evidence that economic benefits of new transportation investments have dropped. For example, according to a study by a New York University economist the return on investment of new highway projects has been in decline for years.⁶ And inefficiencies -- in the form of congestion, high costs, and environmental impacts -- exacerbate matters further.

The flaws in our transportation system also have a broader impact on our economy. Long commutes and congestion impose real economic costs. The Texas Transportation Institute estimates that we lose \$87.2 billion dollars in productivity during the 4.2 billion hours Americans spend in traffic each year.⁷ Billions

more in fuel is wasted. Moreover, economist Joseph Cortright has shown how sprawling metropolitan land use patterns make the problem worse.⁸ Cortright calculated that a typical traveler in the least-sprawling U.S. city spends 40 fewer hours per year in rush hour traffic than the average American, due to shorter travel distances.

Stubbornly high household transportation costs also show this inefficiency. Analysis by the transportation and land-use think tank Reconnecting America shows that transportation costs have been growing for years, and are now often the second highest expense for American families. The average household spends more on transportation than on food or health care.⁹ In highly automobile-dependent suburbs, transportation can consume as much as 25 percent of a household budget, compared to just 9 percent in neighborhoods with access to public transportation.¹⁰ To make things worse, the roller-coaster-style volatility in oil prices since 2006 – when NRDC began publishing analyses of consumer spending on gasoline – means that consumers get whipsawed. 2008 alone included a record runup past the \$4-per-gallon mark and then a plunge back down below \$2, and the first quarter of 2011 saw prices rival those of the highs of 2008.

Studies also show, however, that smart, strategic transportation investments can save consumers money. In fact, the American Public Transportation Association claims that a household that takes public transportation can save \$10,000 annually, and in fact they have a calculator available for consumers curious about how much they could save.¹¹ Greater investment in public transportation would yield other benefits as well. Annual investments of \$30 billion in America's public transit systems and \$10 billion in intercity and high-speed rail would create 3.7 million jobs overall and more than 600,000 jobs in manufacturing over six years.¹² In addition, these investments will generate \$60 billion in net annual gross domestic product, nearly \$45 billion in additional worker income, and \$14 billion in annual tax revenue, spurring additional growth throughout the economy.¹³ Such investments also have a ripple effect, benefitting, for example, small towns where buses are manufactured, or farms that rely on port cities for access to the global marketplace. At the same time, investing in public transportation would save consumers money.

In this fiscally constrained era we must collect and make good use of information regarding potential costs and benefits during the transportation planning and project selection and design processes. Resources should be focused on the projects that will yield the greatest return in terms of mobility, social, and economic benefits.

To get from here to there, government must learn to do what Fortune 500 companies engage in routinely: Strategic planning, including informative scenario-building. Thankfully, this practice is spreading at the state and metropolitan level, and a new federal policy should help accelerate this trend given demonstrable economic benefits. For example, the Metropolitan Planning Center at the University of Utah recently compiled a series of case studies demonstrating the substantial reductions in congestion as well as cost savings that result from strategic planning. These scenario plans were originally developed by the metropolitan planning organizations (MPOs) with the assistance, in a few cases, of a local nonprofit organization specializing in urban planning. The table below shows the cost savings and reductions in congestion in each region. The estimates result from comparing a base case scenario (Base), which assumes continued growth without strategic planning, and the strategic planning scenario (Strategic).

City/Region	Capital Costs (Billions)			Congestion		
	Base	Strategic	Percent Change	Base	Strategic	Percent Change
Redding, CA	\$7.7*	\$7.06*	-8%	NA	NA	NA
Albuquerque, NM	\$.62	\$.47	-24%	739,520 (Daily Vehicle Hours Traveled)	738,370	0%
Austin, TX	\$16.7	\$13.6	-19%	412,760 (Vehicle Hours of Delay)	278,082	-33%
Nashville, TN	\$7.0	\$3.4	-51%	NA	NA	NA
Salt Lake City, UT	\$31.5**	\$18.6**	-41%	450,000 (Avg. Daily Hours of Delay)	350,000	-22%
Martin & St. Lucie Counties, FL	\$1.5	\$.61	-59%	60,640 (Vehicle Hours of Delay)	57,721	-5%
Champaign- Urbana, IL	\$.15	\$.08	-44%	4.9% (Percentage of Roads with Congestion)	2.0%	-60%
Albany, NY	\$1.70***	\$1.62***	-5%	9,065 (Daily Total Hours of Delay)	6,531	-28%
Chicago, IL	NA	NA	NA	2,800,000 (Daily Hours of Congested Travel)	2,100,000	-25%
Sacramento, CA	\$14.7	\$13.0	-12%	41 (Percent Time in Congestion)	29	-30%
Philadelphia, PA	\$68.7**	\$55**	-20%	\$4.3 (Annual Congestion Costs in Billions – 2008 Dollars)	\$3.7	-16%
Atlanta, GA	\$7.4	\$11.5 ⁺	56%	54 (Minutes Of Vehicle Delay Per Household)	50	-7%

Strategic planning would help states and regions identify cost effective solutions to improve performance of the transportation system. Today, states and regions develop 20-year long range transportation plans to guide transportation investments and meet future development needs. Point-in-time predictions are made about how and where development will occur, yet despite changes in the location and type of development throughout a community, plans remain largely unchanged.

When a business develops a plan to expand they do not just look at where to add more stores – they do strategic planning that considers other factors like the actions of competitors, future supply chain demands, and potential economic and market trends.

Strategic transportation planning looks at several scenarios for future travel demand and transportation investments, measuring factors like congestion, and pollution. States and regions can then evaluate

different scenarios for cost, congestion, etc and select a scenario based on what best meets the needs of the community, proactively guiding investments to achieve this vision and its benefits.

This is just one tool that states and regions can use to define their preferred future, and then design investment portfolios to get there. Federal policy should set clear objectives that can be aligned at different levels of governance, and provide incentive and tools for better planning and achievement of objectives.

Policy Recommendation: A new transportation program should include a set of national policy objectives related to mobility and access, safety, economic impact, energy use and environmental quality. Congress should:

- Reform and reorient federal programs to direct funding to help states and localities make progress toward these objectives.
- Require commensurate state and regional objectives, explicitly written into long-range plans and transportation improvement programs.
- Hold states and regions accountable for objective-setting and achievement by offering incentives in the form of preferential matching and special funding for programs, projects and initiatives that contribute to these goals.
- Enact large merit-based, competitive programs to leverage federal investments by spurring virtuous competition and driving innovation and reform among a large pool of applicants. Two programs are especially worthy as models: The Urban Partnership Agreement competition in the Bush Administration and the TIGER program in the Obama Administration.

Fixing It First: Addressing Failing Infrastructure

Chronic underinvestment in repair and maintenance of our transportation system is a national crisis. Five hundred bridges in America failed between 1989 and 2003.¹⁴ Today, nearly 70,000 bridges across the country are in disrepair.¹⁵

Deferred maintenance is crippling our road and transit networks as well. The American Society of Civil Engineers estimates that \$1.2 trillion is needed over the next 5 years to improve the condition of the system.¹⁶ One recent report found that the annual cost of deferred maintenance is \$200 billion.¹⁷ Failing to invest now may seem pennywise, but it is pound-foolish – projections find the maintenance tally could climb to a staggering \$5 trillion by 2035.¹⁸ As former White House economic adviser Larry Summers put it, “You run a deficit both when you borrow money and when you defer maintenance that needs to be done. Either way, you’re imposing a cost on future generations.”¹⁹

Proper routine maintenance could have prevented tragedies like the I-35W bridge collapse in Minnesota. Unfortunately, state authorities often direct money into headline-grabbing new projects rather than critically needed maintenance. In fact, in a 2011 poll, 86 percent of respondents supported a “fix it first” policy that focuses on maintaining existing transportation systems before building new ones.²⁰ The era of wasteful earmarks for flashy but foolish projects, must give way to a focus on fixing our creaky, decaying, and essential existing transportation infrastructure.

Such an approach reduces ongoing maintenance costs, supports business and residential investment in areas already served by transportation infrastructure, and creates more jobs per dollar than construction of

new capacity.²¹ A new transportation law should include a clearer, more aggressive “fix-it-first” policy for all modes of transportation to reap these benefits.

Policy Recommendation: A new transportation law must adopt a “fix-it-first” approach to infrastructure. Congress should:

- Enact Senator Cardin’s Preservation and Renewal of Federal-Aid Highways Act (S. 1193) to prioritize repair of roads and bridges, specifically requiring the Secretary of Transportation to establish “state of good repair standards” for the various classes of federal-aid highways to serve as benchmarks of achievement for states to reach, and requiring that states use an “Asset Management Process” to develop “State System Preservation and Renewal Plans” and “State System Preservation and Renewal Performance Targets” to ensure that their federal-aid roads achieve a state of good repair.
- Allocate substantial investment exclusively to repairs.
- Mandate that US DOT develop a set of performance criteria related to state of good repair for transportation facilities.
- Require that states and regions show how they will achieve progress toward state of good repair goals in their Long-Range Plans and Transportation Improvement Programs.

Breaking the Oil Habit: Delivering Mobility Choice

Transportation drives America’s dependence on foreign oil. While we have weaned the electricity sector almost completely off oil, transportation remains 96-percent dependent on petroleum products, mostly gasoline and diesel.²² And nearly 70 percent of oil used in the U.S. goes to transportation. The biggest sub-sectoral oil consuming category is cars and light trucks, which account for about 60 percent of the total.²³ Heavy-duty vehicles comprise about one-third that percentage, and aviation about half of that. The remainder is rail, marine and other uses.

Taken together, our oil consumption adds up to a 19 million-barrel-per-day habit. This tremendous thirst for oil is a concern because the vast majority of oil resources are held by other nations. In fact, oil production in the United States peaked circa 1970, despite tremendous investments in exploration and production. The U.S. has 526,000 producing oil wells, or more than the rest of the world combined, as well as thorough subsurface mapping.²⁴ To meet our gargantuan demand oil imports have risen steadily from 35 percent in 1973 to more than 50 percent now, a situation unlikely to change except via demand moderation since other countries have vaster reserves and therefore longevity of production capacity.²⁵

The good news is that overall oil intensity of the U.S. economy – the amount of oil used per unit of GDP – has declined substantially since the 1970s due mostly to greater vehicle fuel-efficiency and electricity fuel-switching. However, the transportation sector remains shackled to global oil marketplace trends.

And there’s international evidence that we can’t drill our way out, as President Obama claims. For example, Canada offers a real contrast. While we have 19.12 billion barrels as of January 2010, Canada has a staggering 175.2 billion barrels in proved reserves.²⁶ Canada and the U.S. are similar, on the other hand, in that we are both on the top-ten list of producers.²⁷ More than a half-million wells are producing about 9 million barrels a day in the U.S. to keep us on the list. But we have to import more than half of what we consume. Canada produces, meanwhile, produces about 3.3 million barrels a day, and consumes almost 2.2 million barrels daily.²⁸ Canada is a big net-exporter, yet prices at Canadian pumps have

tracked ours (setting aside a regular gap due mostly to higher Canadian fuel taxes) since 2007.²⁹ The same applies to the United Kingdom, which thanks to North Sea oil produces almost as much as it consumes.

We have all been pulled up and down (and up and down...) by a spiky, scary global crude oil price roller coaster. And new production isn't the way off this crazy ride. As Ken Green of the American Enterprise Institute put it in a recent interview, "The world price is the world price...Even if we were producing 100 percent of our oil...[if prices increase because of a shortage in China or India]...our price would go up to the same thing...We probably couldn't produce enough to affect the world price of oil...People don't understand that."³⁰

High and volatile oil prices have an immediate impact on transportation costs for both households and businesses. As transportation costs rise, goods and services that must be transported also rise in price. Food, consumer goods, raw materials, and other fundamentals of our economy are all simultaneously affected. Our economy is therefore held hostage to a turbulent global oil market, which is influenced by diverse factors such as consumer behavior in other large growing nations such as China, supply decisions made by nationalized oil companies organized in the OPEC cartel, political unrest and instability in the Middle East as well as market speculation.

Apart from economic impacts, our oil dependence poses a national security concern for strategic military and defense reasons. Oil consumption by the transportation sector is a major source of heat-trapping pollution, accounting for approximately one-third of U.S. greenhouse gas emissions.

In addition to numerous environmental costs, climate change carries worrisome security implications. An increasing number of security experts at CNA Corporation, the Center for Strategic and International Studies as well as the Defense Department have identified climate change as a challenge to the nation. CNA describes a "threat multiplier" effect due to climate change whereby regions of the world that are already stressed due to poor social, economic and/or political conditions risk degenerating into disaster and/or civil war zones with additional stress due to the unpredictable impacts of climate change.³¹ Asian, African and Middle Eastern countries are particularly susceptible to such a scenario. As CNA sums up:

Economic and environmental conditions in already fragile areas will further erode as food production declines, diseases increase, clean water becomes increasingly scarce, and large populations move in search of resources. Weakened and failing governments, with an already thin margin for survival, foster the conditions for internal conflicts, extremism, and movement toward increased authoritarianism and radical ideologies.³²

Transportation fuel use is also a primary driver of local air pollution that has been linked closely to both public health problems such as asthma and other respiratory diseases.³³ Some – such as the elderly and children – are especially vulnerable to the effects of air pollution. My four-year-old daughter is asthmatic, so I am keenly interested in reducing pollution from transportation and other sources.

How do we reduce our oil dependence? Raising the bar on fuel economy performance of our vehicles as the Administration is doing via rulemaking – thanks to authority delivered in part by the bipartisan Energy Independence and Security Act of 2007 -- is one way. Providing consumers with more fuel choices by making cars pluggable is a second way. The third component of this three-pronged attack on oil dependence is greater mobility choice.

Studies show that strategic transportation investments can help cut oil use. In April of 2010, the Department of Transportation released a comprehensive report addressing strategies to reduce energy use and emissions in the transportation sector.³⁴ The report found that significant progress can be made

through increasing the efficiency of our transportation system through operational improvements and infrastructure investments. A separate analysis by the Environmental Protection Agency published in March of 2010 reached the similar conclusion finding that such measures could reduce on-road oil use by 14 percent annually by 2030 and on-road GHG emissions 13 percent annually.³⁵

I am currently collaborating with an unusually broad set of energy and transportation experts as part of the *Mobility Choice* project initiated by the Institute for the Analysis of Global Security (IAGS), and our blueprint for transportation reform has elements relevant to the Highway Title of the transportation bill, as described below:

Deploy “HOT” lanes and Congestion Pricing

The concept of pricing to address congestion was first proposed by Nobel Laureate William Vickrey about fifty years ago and at present the federal program has supported more than 50 projects in more than a dozen states with more than 20 projects in operation.³⁶ The use of this tool helps to address a “tragedy of the commons” issue with transportation, whereby public goods are consumed inefficiently due to a lack of accurate price signals unlike, for example, time-variable prices for daytime cell use and midday electricity use.

Facility pricing strategies have been deployed more aggressively elsewhere in the world, including Singapore, London, Stockholm and the Netherlands. Political and public acceptance has been a challenge in many cases, with lessons that could be useful in the United States. Specifically, to earn support from the public and other stakeholders – including environmental groups – proposals must address a real problem that pricing would help resolve (such as oil savings), have a credible plan for the revenues including investments in transportation alternatives such as bus rapid transit, come from a trustworthy source, and start incrementally.³⁷ The last of these is particularly important. Launching modest-sized projects can offer the public “proof of concept” and build momentum towards wider use of pricing tools.

In fact, thanks to improvements in technology – for example, electronic toll collection – road pricing is already becoming more popular, and a greater source of financing for transportation. In fact, the more than 60 members of the International Bridge, Tunnel and Turnpike Association generate \$10 billion in tolls or one-third of federal gas tax revenues.³⁸

Together, such strategies could save nearly 80 million barrels of oil in 2020, and twice that in 2030 as pricing becomes more comprehensive.

Increase Commuting Options and Telecommuting

A large share of trips -- particularly at peak hours – are to the workplace. There are many strategies that can encourage commuters to choose travel options other than driving alone. For example, parking cash-out programs reward employees who find other ways to get to work by giving them the cash-equivalent to a parking benefit. On-line ride matching, vanpool services and guaranteed ride home programs provide commuters an alternative to driving alone. Extensive outreach programs by larger employers can be used to educate employees about the commute options available. Transit agencies can offer employers “bulk discounts” on monthly transit passes, providing incentives for greater transit use.

Telecommuting and compressed workweeks also offer opportunities to eliminate some trips to the workplace entirely. The choice to take the “broadband highway” to work, shop or run errands can save oil. According to one recent study, the 2.9 million people who already telecommute save more than 25,000 barrels of oil daily with much untapped potential since 45 percent of the workforce holding jobs compatible with at least part-time telework.³⁹ As one energy expert put it, “consider the potential of

virtualization as a disruptive energy technology. If for only one day a week the herd of stop-and-go business commuters was allowed to telework from home or from a networked satellite office near their neighborhood, over 30 million gallons a day of gasoline would be saved.”⁴⁰ In fact, forty percent of IBM’s employees telecommute, saving nearly \$2.9 billion in reduced office space needs (and millions more on energy costs) since 1995.⁴¹

Improved commuting options could save 71 million barrels per year by 2020.

Deploy Smart Traffic Management

Traveling on roads and transit in other industrialized nations, one witnesses a host of technologies that could improve operating efficiency of existing transportation modes, from variable signage providing real-time information to system users to traffic management centers to keep traffic flowing freely. Upgrading our current infrastructure with 21st-century technology is one of the first, most cost-effective steps we can take to save oil and cut pollution by reducing congestion and idling. These technologies save time, money, and frustration for travelers.

Congressmen Rogers and Carnahan recently offered a bill supported by NRDC and other groups, the SMART Technologies for Communities Act, which would select six communities as part of a pilot intelligent technology deployment project. These communities would benefit from investment in smart technology, serve as testing sites with clear performance objectives and measurement and model and refine best practices that can then be replicated in across the nation.

Together, these technologies could save almost 5 million barrels of oil in 2020 and almost 10 million barrels in 2030, while simultaneously improving traffic flow on arterials and freeways in the nation’s congested urban areas.

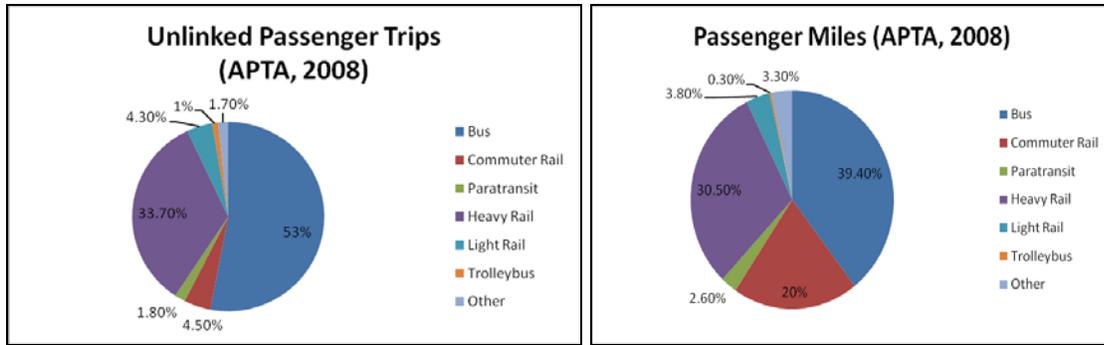
In addition to the Mobility Choice recommendations, two modes of transportation that share rights-of-way with cars and trucks deserve more priority and investment. These modes are often disregarded or discounted in the public debate, which is unjustified given their cost-effectiveness. They are the workhorses in our stable of options for addressing transportation oil dependence.

Invest in Modern, Attractive Private and Public Bus Transit

First among the workhorses is intercity bus service. Private commercial buses are the most cost-effective form of public transportation in the country, according to a new report from the American Bus Association (ABA).⁴² The ABA looked at federal subsidies for all modes of transit from 2002 to 2009. Private sector buses got less than 1 percent of the pie, just \$83 million, compared to \$11 billion for mass transit and \$5 billion for airlines. In subsidies per passenger mile traveled, buses received just one-tenth of a penny, compared to more than a quarter for Amtrak, nearly 20 cents for mass transit, and just under a penny for airlines.

All told, the motorcoach industry, which includes intercity buses, commuter buses, tourist coaches and rural transit, provides about 745 million passenger trips a year, about the same as the airlines and 25 times more than Amtrak. And it does this with practically zero federal support.

Next on the list are intracity buses. These options carry the bulk of passengers in our public transportation systems currently, as shown in the pie charts below.



And yet, as a recent report notes, we have relinquished global leadership in a key bus innovation: Bus rapid transit (BRT). BRT offers several advantages over rail, especially given the simple fact that over the course of the past century we have hard-wired our nation with a vast network of highways, roads and streets. First, it can be implemented more speedily than rail. Second, it can cost less, especially in terms of capital investment. And last, it can use an existing street network connecting locations of interest.⁴³

The U.S. built some of the first bus rapid transit, for example the still-operational South Busway in Pittsburgh (opened in 1977).⁴⁴ There are other lines that qualify as BRT based on a scorecard developed by the Institute for Transportation & Development Policy, based on key traits such as off-vehicle fare collection, physically separated right-of-way and platform-level boarding (making them more attractively train-like, in other words).⁴⁵ Unfortunately these lines in Cleveland, Eugene, Los Angeles and Las Vegas pale in comparison with model ones in Bogota, Guangshou, Johannesburg and Ahmedabad.⁴⁶

The new transportation bill, in both the Highway and Transit Titles, should leverage scarce taxpayer dollars by further building out bus transit within and between our metropolitan regions.

Invest in Nonmotorized transportation: Walking and biking

Tom Vanderbilt, author of the best-selling book *Traffic*, penned an article in Slate this past weekend about a humorous-yet-thought-provoking stunt by a set of bikers in Los Angeles:

In the face of this fanciful idea (*a traffic-busting flight!*) it became possible to demonstrate that cycling, often taken as a non-serious or marginal or even annoying (to some drivers) form of transportation in the United States, could seem eminently reasonable: not only the cheapest form of transportation, not merely the one with the smallest carbon footprint, not only the one most beneficial to the health of its user, but *the fastest*.⁴⁷

Many of us bike, and even more of us walk regularly. In fact, 12 percent of daily trips are made by nonmotorized means.⁴⁸ Unfortunately, pedestrians and bicyclists account for 13 percent of traffic fatalities.⁴⁹ Too many Americans must take their life into their own hands when venturing out for a walk in their neighborhood, a hard reality that warrants better design dubbed “complete streets” as prescribed in S. 1056, the “Safe and Complete Streets Act of 2011” co-sponsored by a dozen Senators including several Members of this Committee.

It also warrants dedicated investment as provided by the transportation enhancements or TE program. This program, put in place by the Intermodal Surface Transportation Efficiency Act of 1991 or ISTEA, provides a modest amount of funding per year for investments in a variety of transportation-related improvements that help make walking and biking a more viable mobility choice. While the fuel savings

from these investments are comparatively modest when examined in isolation (one recent report found a technical potential to save almost 100,000 barrels per day by 2030⁵⁰), when combined with other measures such as bus rapid transit and smart land-use planning they are invaluable. And they are extremely cost-effective: If \$80 billion were invested between 2010 and 2050, consumers would save four times that much in reduced vehicle operating costs alone.⁵¹

Pedestrian and bicycle projects are also more potent job generators than many realize. In fact, a recent study compared actual bid price and cost data for 58 projects in 11 cities and found that bike projects create 46 percent more jobs than road projects without any bike or pedestrian component (due in part to the fact that they require less heavy machinery and more labor to construct).⁵²

In order to ensure that the technologies and techniques including but not limited to those described above are deployed expeditiously, Congress must enact a new transportation law with robust policies to drive them.

Policy Recommendation: Congress should establish a national oil-savings objective for our federal transportation program and require similar objectives for states and regions. Congress should also provide financial assistance to meet these objectives by:

- doubling annual funding for public transportation;
- expanding dedicated resources for other transportation facilities and strategies that reduce oil consumption, such as bicycle lanes, pedestrian improvements, and intelligent transportation systems; and
- establishing oil savings as one focus of all new, merit-based, competitive loan and grant programs.

Funding and Financing

One of the greatest challenges that we face in upcoming years is paying for the upkeep and expansion of our transportation system. As receipts from the federal motor fuel excise tax continue to fall, and the Highway Trust Fund grows increasingly insolvent, we must consider new mechanisms to fund transportation.

Policy Recommendation: To finance a transition to a more robust, efficient, and cleaner transportation system, a variety of tools could be used such as methods to generate new revenue, including:

- *An oil security fee:* To better reflect the hidden costs of oil, primarily those associated with its national security impact, an oil security fee could be levied either per barrel or at the pump. This fee would send a more accurate signal to consumers about the real cost of their gallon of gasoline or diesel. Reflecting the hidden costs of oil at the pump would enable consumers (assuming modal choices exist and vehicles are platforms on which fuels can compete) to make more economically informed transportation choices. Proceeds from the fee could either be offset entirely or partly by tax relief and/or debt reduction while a portion could go to the transportation program. *Mobility Choice* coalition analysis shows that implementing a fee equivalent to an additional 25 cents per gallon of gasoline in 2020 could generate annual savings of almost 240 million barrels of oil and generating \$44 billion of revenue.

The Carnegie Endowment for International Peace's Leadership Initiative on Transportation Solvency just unveiled a variant on this concept with an intriguing structure worth consideration. They propose that an ad valorem oil security fee apply at the wellhead or port-of-entry and that a gas tax rise or fall in inverse proportion to the oil price.⁵³ In other words, when oil prices are high, consumers get relief at the pump with oil companies making up the difference and when prices drop the signal to consumers kicks in.

- In the long run, it may be desirable and possible to shift to a fee tied more directly to road usage than the gasoline tax, what is often referred to as a "VMT fee." This concept should be tested and piloted first, however, and structured carefully. For example, it should continue providing an incentive for consumers to invest in fuel-efficient car and truck technology by charging on a sliding scale depending on vehicle fuel economy. Although it has been a subject of controversy, when explained and marketed to consumers it could prove popular. A five-year University of Iowa study provided 2500 drivers in 12 U.S. areas a system using GPS, data recorder and data link to the research team. Participants received regular statements regarding their tax bills with the system. While only 20 percent of participants favored the fee at the outset, by the end that number jumped to 70 percent.⁵⁴
- Congress should also make aggressive use of innovative financing mechanisms that leverage public investments. Public-private partnerships with clear public benefits agreements can take advantage of private resources to fund public infrastructure. Press reports say that one proposal this committee is considering is dramatic expansion of TIFIA, the Transportation Infrastructure Finance and Innovation Act. This program uses a variety of tools – and when it comes to financing, a variety of tools will be necessary to make ends meet – and may well be worth expanding. Research shows that partnerships have common features which provide some guidance for amending TIFIA to ensure that taxpayer funding supports important national performance goals. In addition to obvious ones, such as coinvestment, cooperation and collaboration, as well as pragmatism and flexibility, three jump out as applicable to TIFIA: Maximization (of returns on investment), competition and measurement.⁵⁵ This program – and other tools involving public-private partnerships such as infrastructure banks – should award loans, loan guarantees and standby lines of credit on a competitive basis, focused on maximizing returns and with those returned defined in terms of measurable outcomes that include fuel-efficiency or fuel savings as well as environmental pollution reductions. *It is crucial that performance measurement and accountability be a rigorous component of any expanded program.* One possible investment that would benefit from TIFIA eligibility is intercity bus projects, to help private companies purchase modern rolling stock that can attract and retain ridership.⁵⁶

Improving Project Development and Delivery

Both the current federal transportation planning process and the project review process can improve the quality of a transportation project in important ways to better achieve mobility improvements, as well as economic development, environmental, health, and energy goals. These processes ensure that all members of the public, including individuals and businesses, have the opportunity to have a say in the development of their communities. They ensure that scarce resources are directed toward the projects that the community needs the most. And they help planners and engineers identify and avoid or mitigate negative impacts to the community and its natural environment.

Unnecessary delay during the planning, design, and delivery of a sound transportation project can cost taxpayers, the economy, and the environment, in addition to local mobility and access. Some of the largest causes of delays in federally supported transportation project delivery are:

- project redesign or design additions;
- the need to relocate businesses;
- project complexity;
- lack of funding for the project;
- local objections to the project; and
- interagency communications problems.⁵⁷

On the other hand, delays related to environmental and preservation laws account for only a small share of total transportation project delays. In most cases delays from environmental review occur in the most complex and/or controversial projects, where thorough review is most warranted. Very few projects are actually required to complete an Environmental Impact Statement (EIS), and even fewer are subject to litigation or controversy. In 2001, of all highway projects that received federal funds, only three percent accounting for 9 percent of funds, required an EIS.⁵⁸ Nearly all federally funded transportation projects have been eligible for Categorical Exclusions (CEs) or Findings of No Significant Impact (FONSIs), both of which shrink review requirements substantially.⁵⁹

We must therefore be cautious about focusing too heavily on the environmental process when seeking to speed project delivery. In doing so, we would merely address outliers, and fail to address the most widespread sources of project delay as well as potentially undermining key environmental protections that have served the nation well for more than 40 years.

A new transportation authorization bill should include targeted, thoughtful reforms focused on 1) improving the transportation planning and project development process, and 2) simplifying the project review process and while retaining safeguards that are designed to protect the environment and ensure that the public has an adequate opportunity for involvement in their local transportation plans and decisions. In particular, reforms can be made to reduce duplicate processes, increase the effectiveness of initial planning and transportation project reviews, create incentives for timely project delivery, and focus resources on the most effective transportation investments and solutions.

However, even without policy changes, many transportation agencies are finding that they can adjust their internal agency structures to better prioritize limited funds and staff time to focus on the projects that are most likely to move forward in the near term. Additional innovations that can and should be adopted more widely without changes to current law include new internal operating strategies such as development of templates for project categories, bundling of similar project analysis, and aggregating mitigation strategies for projects in relatively close proximity.

Policy Recommendation: The federal transportation bill should improve the transportation planning and review process to improve project delivery without compromising bedrock environmental review laws. Congress should:

- Create new incentives for closer linkage between the transportation planning process and the project review process
- Increase the use of Mitigated CEs and FONSIs
- Encourage greater design flexibility for transportation projects to avoid environmental impacts that would need mitigation

Congress should also consider further steps to integrate transportation planning with project reviews, building on initial steps taken in SAFETEA-LU.

- By focusing on more comprehensive planning initiatives, such have been undertaken in Sacramento and Salt Lake City, environmental impacts *and benefits* can be identified early in the process
- Projects and suites of projects could then be designed from the outset to avoid or mitigate environmental impacts and maximize benefits, reducing delays later during the project review process
- The data collected and used during these planning efforts could then be incorporated into the project review phase, further cutting down on the time needed to certify compliance for several projects at once
- Contingent upon completion of such a comprehensive planning process, identified benefits might also be used as documentation for CEs or FONSI.

Orange County Transportation Authority Executive Director (and former Caltrans director) Will Kempton has developed a package of proposals for reducing barriers to timely project delivery. Many of his ideas are worthy of consideration by this Committee. Of course, it should be noted that Will is perspicacious enough to include proposals for state transportation departments, whose bureaucratic houses are not necessarily in order when it comes to efficient, effective project delivery.

Moving Goods Faster, Cleaner, and Cheaper

Surface freight transportation – from rail to trucks to ships and barges – is the backbone of America’s economy. The system allows for the affordable movement of goods and services and creates a significant number of jobs. However, goods movement is a rising source of road and rail congestion, as well as environmental and public health impacts.

Despite freight transportation’s economic and environmental impacts, until recently, the freight system—*as a system*—has not received the attention it deserves in federal transportation planning and funding. It is possible to simultaneously modernize America’s freight system, improving its efficiency, while also reducing environmental impacts. The federal transportation law reauthorization provides an important opportunity to help America’s freight system meet growing demand while saving oil as well as reducing air pollution, water pollution and noise through targeted provisions.

Policy Recommendation: Congress should develop a comprehensive freight title to guide investment in and development of our freight network to facilitate affordable goods movement while reducing environmental impacts. Such a title should:

- Create a competitive grant program to fund innovative freight transportation projects. As part of this grant program, create a public process that includes EPA and regional stakeholder groups that will develop criteria to ensure that only projects that benefit the environment and public health are selected for funding. This type of approach has been identified as a recommendation for goods movement by the National Environmental Justice Advisory Council (NEJAC). Additionally, public dollars should be tied to a performance standard so that any highway dollars distributed according to a formula-based allocation process that are devoted to reducing freight bottlenecks should deliver projects that will simultaneously improve freight flow and reduce air pollution impacts in the short and long term.

- Define project eligibility for Highway Trust Fund spending in a way that emphasizes system performance outcomes, including freight movement reliability and environmental performance.
- Establish freight reliability and environmental performance standards to help inform project eligibility for federal funding.
- Within one year, develop a national freight plan that identifies key hubs, ports, corridors and gateways whose improvement is essential to simultaneously meet pressing reliability and environmental and public health goals.
- Create an Office of Multimodal Freight within the office of the Secretary of Transportation.
- Establish a competitive grant program that recognizes innovation and encourages projects that simultaneously deliver system reliability and emissions and other environmental impacts reductions.

Protecting Water and Wildlife

Environmental impact from transportation and oil use are not limited to air quality and climate change. Transportation also has a substantial impact on water quality and wildlife.

Pollution from stormwater runoff threatens our communities' drinking water and the rivers, lakes and streams in which our children swim, fish and play. Highways and roads are a major source of stormwater runoff, which is a leading cause of water pollution in the U.S. Roads and related infrastructure, such as parking lots, comprise two-thirds of all paved surfaces, the primary source of stormwater runoff. Roads collect pollutants from tailpipe emissions and brake linings along with other contaminants that wash into rivers and streams during storms, polluting drinking water supplies and taxing downstream communities. One inch of rain that falls on one mile of road produces 55,000 gallons of polluted stormwater.⁶⁰

Smart stormwater mitigation strategies such as "green roads and highways" are a cost effective way to reduce stormwater runoff, flooding and help meet clean water requirements. Green roads and highways use innovative methods to reduce and clean runoff by protecting, restoring or mimicking the natural hydrology of an area to prevent runoff or divert it into natural areas instead of directly into local streams, rivers, and sewer systems. A single acre of wetland holding a foot of water will store up to 330,000 gallons of water and filter pollutants such as oil, sediments and other chemicals that otherwise run off our nation's roads and highways and into our streams, rivers and lakes.

Many cities are already using natural practices in stormwater mitigation to avoid more costly alternatives. In Seattle, the Street Edge Alternative project reported a 29 percent savings over traditional street retrofitting and a 49 percent reduction in paving cost by using green techniques. The California Department of Transportation found that comprehensive use of green infrastructure to control stormwater would cost \$2.8–7.4 billion compared to \$44 billion for conventional controls.

Policy Recommendation: The reauthorization of the Transportation Bill should require all new and rehabilitated federal aid highways and roads to meet a performance-based standard to reduce polluted stormwater runoff, flooding and meet clean water requirements.

The greatest cause of the destruction of critical wildlife habitat, which is the most significant threat to America's biodiversity, is sprawling development. This is oftentimes driven by poorly planned transportation investments. The rapid increase in wildlife-vehicle collisions on U.S. roadways is also a

growing concern and has significant impacts on public health and safety, incurs substantial property damage and injury costs, and reduces the health and viability of wildlife populations.

Better transportation planning can shape future growth, thereby determining the quantity and quality of habitat left for wildlife. Wildlife biologists and transportation planners and engineers have been working together for the last decade to mitigate the impacts of highways on wildlife. SAFETEA-LU included a provision requiring transportation planners to consult with natural resource and land management agencies to compare maps and consider potential conflicts early in the planning process.

Policy Recommendation: To build on progress in reducing impacts to wildlife, Congress should:

- Enact Senator Cardin’s Safe Treatment of Polluted Stormwater Runoff (STOPS Runoff) Act (S. 3602) aimed at treating and containing highway stormwater runoff at or near highways to prevent polluted stormwater from reaching nearby rivers, streams or other watersheds by requiring that the Transportation Department develop performance-based standards that protect and restore watershed areas where federally funded highways are located;
- standardize collection and analysis of wildlife-vehicle collision data collection, and facilitate sharing of this data between state transportation agencies and resource agencies;
- expand and improve section 6001 of SAFETEA-LU by supporting resource agencies’ involvement early in planning through both process requirements and funding; and
- include consideration of developing wildlife passages during bridge assessments.

Conclusion: Getting it Done - The Time to Act is Now

Thank you for the opportunity to testify on behalf of NRDC, our transportation team and our members concerning our mutual concern for how to reform the federal transportation program to deliver higher quality, safer, cleaner, more efficient, and more cost-effective transportation projects to taxpayers and communities across the country. We must press forward with wise investments in a smarter, bolder, greener transportation program. Let’s get to work.

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