

**Testimony of Frederick W. Smith**  
**Chairman, President and CEO, FedEx Corporation**  
**Co-Chairman, Energy Security Leadership Council**  
**Member, Electrification Coalition**  
**Before the U.S. Senate**  
**Committee on Environment and Public Works**  
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Good morning, Chairman Boxer, Ranking Member Inhofe, and members of the Committee. I would like to thank you for giving me this opportunity to speak to you regarding U.S. transportation infrastructure policy. I think this is a tremendously important, and often overlooked, component of our nation's efforts to end the very real and pressing dangers posed by our dependence on petroleum.

I am proud to serve both as co-Chairman of the Energy Security Leadership Council and as a member of the Electrification Coalition, two organizations dedicated to facing these threats head on.

The Energy Security Leadership Council, formed in 2006, is a coalition of business executives and retired national security leaders who believe that our dependence on oil, much of it imported from unstable and hostile regimes, poses an unacceptable economic and national security threat.

The Electrification Coalition was formed in 2009, and is made up of a group of business leaders who represent the entire value chain of an electrified transportation sector and who are committed to promoting policies and actions that facilitate the deployment of electric vehicles on a mass scale.

I became involved in these organizations for a single reason: it is my belief that after terrorism and the proliferation of weapons of mass destruction, our dependence on petroleum represents the biggest single threat to our nation's economy and national security.

I can speak to this issue personally. FedEx delivers more than 8.5 million packages and shipments per day to more than 220 countries and territories. In a 24-hour period, our fleet of aircraft flies the equivalent of 500,000 miles, and our couriers travel 2.5 million miles. We accomplish this with more than 290,000 dedicated team members, 697 aircraft, and some 80,000 motorized vehicles worldwide.

FedEx's reliance on oil reflects the reliance of the wider transportation sector, and indeed the entire U.S. economy. Oil is the lifeblood of a mobile, global economy. We are all dependent upon it, and that dependence brings with it inherent and serious risks.

**The Threat of Oil Dependence**

Those risks are coming into sharp focus once more today, as oil prices are again on the march. That unrest in the Middle East and North Africa is leading to a price spike should no longer be shocking. What is shocking, to me at least, is that after this has happened so many times before,

we still have not committed as a nation to ending our vulnerability. How many more price spikes do we have to endure before we act?

In 2008, the last time prices spiked, Americans consumed nearly 20 million barrels of oil a day—over one-fifth of the world's total. We imported 58 percent of the oil we consumed, leading to a U.S. trade deficit in crude oil and petroleum products that reached \$388 billion—56 percent of the total trade deficit.

A year later, with oil prices averaging just \$62 per barrel and oil consumption down, the United States still ran a \$200 billion trade deficit in crude oil and petroleum products. In 2010, the trade deficit in crude oil and refined products returned to pre-crisis levels near \$300 billion. This year, with prices rising, that number is sure to be even higher.

At the beginning of 2001, oil prices were steady at \$30 per barrel. Over the subsequent five years, prices steadily rose, reaching \$75 per barrel in June 2006. After retreating slightly, benchmark crude prices jumped 50 percent in 2007, from \$60 per barrel in January to more than \$90 in December. In 2008, oil prices soared rapidly, eventually reaching their all-time high of more than \$147 per barrel on July 3.

When prices did fall, it was not because of any action or plan. It was because demand plunged in the wake of the recession. And needless to say, once the global economy slowly began to recover, so did demand ... and oil prices.

Since plummeting to below \$40 per barrel at the end of 2008, prices have been on a steady climb. Events in the Middle East pushed that climb into a spike. The price of oil has now risen by almost 20 percent in the time since January 1, and is once again well above \$100 per barrel.

The volatility of oil prices affects every American. At the crux of America's oil dependence is the energy demand of the transportation sector. Transportation accounts for approximately 70 percent of American oil consumption. Cars and trucks are 94 percent reliant on oil-based fuel for their energy, with no substitutes immediately available in anything approaching sufficient quantities. In short, when prices go up, we have only two choices: drive less or pay more. This is unacceptable.

We are all aware of the sharp financial burden on U.S. households that faced—and still face—resets in their adjustable rate mortgages in the wake of the 2007-2008 financial crisis and the resulting recession. But it is important to understand that increases in energy costs have been on an equivalent, or even greater, order of magnitude for the entire American economy. A typical subprime borrower with a poor credit history who bought a \$200,000 house in 2006 with a 2 year/28 year adjustable-rate mortgage with a 4 percent teaser interest rate for the first two years would have seen monthly mortgage payments increase from about \$950 a month before the reset to about \$1,330 after the reset—an increase of about \$4,500 a year. In the meantime, between 2001 and 2008, the average retail price of gasoline increased from \$1.46 to \$3.27, costing typical households \$1,990 a year in increased fuel expenses. And that increase in energy costs affected all U.S. households—not just the one household in 20 that held a subprime mortgage.

This burden, multiplied across millions of households, was a major contributor to the ensuing economic slowdown. We saw an explosion in home ownership, with many purchases being made by people who had heretofore not qualified for mortgages. When the price of oil and the price of gasoline began to rise, and inflation on commodities began to take hold, and interest rates began to increase, you had a tremendous diminution in purchasing power and cash flow, which contributed to people having to walk away from their mortgages. The rise in oil prices was the match that lit the fuse of the mortgage mess and the subsequent recession. The U.S. economy lost more than 700,000 jobs between December 2007 and the beginning of September 2008, and the unemployment rate increased from 4.5 percent to 6.1 percent—all before the financial crisis truly hit later in September.

And the steps we usually would take to help strengthen the economy and create jobs in times of weakness are just as easily overcome by oil price volatility. For example, changes in the tax code from 2001 to 2008 code resulted in tax cuts of approximately \$1,900 for the median household. But remember, a typical household's energy costs rose more than that during the same time period. So in essence, every penny that most Americans saved due to federal income and estate tax cuts over those eight years was spent on higher gasoline bills.

All told, U.S. families and businesses spent more than \$900 billion on refined oil products in 2008, representing 6.4 percent of GDP. Now, with prices at the pump once again on the rise, we must ask ourselves how many times we must repeat this damaging cycle? Many of the underlying fundamentals that pushed oil prices to record levels are pushing them up once again today. Oil demand continues to recover, both in the United States and abroad. Unrest in the Middle East is only driving prices up faster. Historically, crude oil costs of more than 4 percent of gross domestic product have occurred concurrently with recessions. At between 4 and 5 percent of GDP, oil spending is reaching dangerous levels once again. Our nascent economic recovery is at risk.

The threat to American national security is equally as urgent. The vulnerability of global oil supply lines and infrastructure has driven the United States to accept the burden of securing the world's oil supply. Much of the infrastructure that delivers oil to the world market each day is exposed and vulnerable to attack in unstable regions of the world. Each day, more than 50 percent of the world's oil supply transits fixed maritime routes, often through narrow, vulnerable chokepoints like the Strait of Hormuz between Iran and Oman. Even a failed attempt to close one of these strategic passages could cause global oil prices to skyrocket. A successful closure of even one of these chokepoints could bring economic catastrophe.

To mitigate this risk, U.S. armed forces expend enormous resources patrolling oil transit routes and protecting chronically vulnerable infrastructure in hostile corners of the globe. This engagement benefits all nations, but comes primarily at the expense of the American military and ultimately the American taxpayer. A 2009 study by the RAND Corporation placed the cost of this defense burden at between \$67.5 billion and \$83 billion annually.

Oil dependence also constrains U.S. foreign policy. Libya is only one example. Whether dealing with uranium enrichment in Iran or a hostile regime in Venezuela, American diplomacy across the globe is distorted by the need to minimize disruptions to the flow of oil. Too often, oil

dependence requires us to accommodate hostile governments that share neither our values nor our goals, putting both the United States and its allies at risk.

It would be ideal if there was a free market solution to these threats. But there is no free market for oil. Far from it: today, more than 90 percent of proved conventional global oil reserves are held by national oil companies that are either fully or partially controlled by foreign governments whose interests are often at odds with our own. As long as we remain dependent on those nations, we remain vulnerable.

We cannot continue down this path. We cannot continue to send untold billions of dollars and jobs overseas to pay for our addiction. We cannot continue to send men and women into harm's way to protect an increasingly vulnerable supply line. We cannot continue to put our future in the hands of hostile nations or fanatical terrorists who can turn off our crucial oil lifeline at the drop of a hat.

### **The Three Pillars**

There are solutions. The ESLC and the EC have proposed detailed sets of policies designed to end the threats posed by our oil dependence—and ultimately, to end that dependence altogether.

Fundamentally, policies to combat oil dependence come in three categories: vehicles, fuels, and infrastructure.

We have made enormous strides in the area of vehicles—fuel efficiency, specifically—in recent years. In December 2006, the ESLC released its *Recommendations to the Nation on Reducing U.S. Oil Dependence*, a highly-detailed set of policy proposals that included calls for the first improvements in vehicle fuel economy standards in a generation. Over the next year, we worked with Republicans and Democrats alike to turn our recommendations into law. In 2007, President Bush signed into law the Energy Independence and Security Act (EISA), legislation that echoed our fuel economy recommendations. In April 2010, President Obama instituted rules to increase the national fleet-wide average standard for cars and light trucks to 35.5 miles per gallon by 2016.

We continue to work to maximize long-term oil savings through fuel efficiency. The United States will need to continue to set ambitious improvement targets for light-duty vehicles for the period after 2016. Significant annual fuel-economy improvements can and should be targeted after the attainment of the 35.5 mpg standard. Doing so could save billions of barrels of oil.

We are also making suggestions in the regulatory process as we move toward the announcement this summer of the nation's first-ever fuel-economy standards for the medium- and heavy-duty vehicle fleet.

The second pillar is fuels—both alternative fuels and domestic production. To truly end our dependence, we must sever our transportation system from oil once and for all. The lithium ion batteries that power our cell phones and laptop computers can one day form the nucleus of an electrified transportation sector that is powered by a wide variety of domestic sources: natural gas, nuclear, coal, hydroelectric, wind, solar, and geothermal. No one fuel source—or

producer—would be able to hold our transportation system and our economy hostage the way a single nation can disrupt the flow of petroleum today.

Electricity represents a diverse, domestic, stable, fundamentally scalable energy supply whose fuel inputs are almost completely free of oil. In short, high penetration rates of grid-enabled vehicles—vehicles propelled in whole or in part by electricity drawn from the grid and stored onboard in a battery—could radically minimize the importance of oil to the United States, strengthening our economy, improving national security, and providing much-needed flexibility to our foreign policy while clearing a path toward dramatically reduced economy-wide emissions of greenhouse gases.

Simply put, there is no more important step than electrifying transportation.

While we work toward electrification, however, we will continue to use liquid fuels, particularly petroleum-based ones. It is critical to protect ourselves during that period. The ESLC continues to strongly support the increased domestic production of petroleum, along with sharply increased safety standards. We cannot drill our way out of this problem, but even as we work to use less oil, producing more of what we do use at home will help safeguard our economy and our national security. Of course, no one wants to see a repeat of what happened last summer in the Gulf. We believe that with the proper policies in place, we can produce more and we can produce more safely—and we must do both.

We also see much potential in advanced biofuels, particularly those that are chemically identical to petroleum products and thus do not need their own dedicated infrastructure. For example, flex-fuel vehicles that can operate using either gasoline or E85 are available for purchase by U.S. drivers and the U.S. Department of Energy forecasts strong growth in their adoption.

### **The Third Pillar: Transportation Infrastructure**

These two pillars—vehicles and fuels—are critical components of an overall strategy. But there is a third: our surface transportation infrastructure itself.

Transportation and energy policy have historically been debated in two entirely separate spheres in American politics, and a coherent, unified strategy for the federal surface transportation system has largely been absent since the construction of the interstate highway system.

Characterized by indirect fees, misaligned incentives, overburdening regulations, and inefficient capital investments, today the system faces major funding, decision-making, and performance challenges. Road congestion in particular severely threatens the potential gains associated with more efficient vehicles and alternative fuels.

The nation's current federal surface transportation legislation—which funds more than \$50 billion a year in highway and transit programs—expired in September 2009, and is currently operating under its seventh short-term extension, which expires on September 30, 2011. A growing confluence of factors makes the next surface transportation reauthorization bill a unique opportunity to improve our country's transportation strategy and to bring it into alignment with our national strategic energy interests. Those factors include: a growing bipartisan policy

consensus that status quo solutions are incapable of producing positive results; the fiscal collapse of the federal Highway Trust Fund (HTF), which has focused policy attention on alternative funding mechanisms; growing public discontent with deteriorating transportation performance; and advances in information technology.

In February of this year, the Energy Security Leadership Council released a new report. Entitled *Transportation Policies for America's Future*, this paper proposes reforms designed to transform the nation's transportation policy, introducing a more market-oriented model and instituting oil consumption as a key metric by which decisions are made and evaluated. The recommendations in the report are specifically intended to reduce sectoral oil consumption.

### **Performance Challenges**

Transportation sector supply and demand imbalances have created widespread congestion across America's major metropolitan areas, adversely affecting business activity, negatively impacting quality of life, and substantially distorting development patterns.

The Texas Transportation Institute (TTI), the nation's largest university-affiliated transportation research agency, reports that drivers in metropolitan areas experienced 4.8 billion hours of delay in 2009, wasting 3.9 billion gallons of fuel. These figures are likely conservative as they do not account for fuel losses attributable to acceleration, deceleration, and idling—all common features of congested traffic. Even using these estimates, TTI calculates a total annual congestion cost of \$115 billion nationwide in 2009, with 58 percent of the total cost occurring in the nation's largest 15 metropolitan areas.

Congestion affects freight as well as passenger automobiles. The surface transportation freight sector—commercial light trucks, freight trucks, and rail freight—consumes approximately 20 percent of total transportation sector oil consumption. Road freight accounts for approximately 90 percent of this amount and is the second largest consuming segment in the transportation sector after light-duty vehicles. The freight sector is forecast to grow in importance in the coming decades. In fact, according to the Federal Highway Administration (FHWA), the value of goods moved is expected to increase by more than 190 percent between 2002 and 2035. This is twice the expected growth rate of tonnage. This makes efficient and uncongested movement of goods through the U.S. transportation system even more critical. The current patchwork of regulatory requirements—for example those associated with truck size and weight—exacerbates the challenges faced by the freight sector and can also negatively impact overall oil use.

Prior to the recession, congestion levels had been rising steadily higher for more than a decade. Congestion once again rose in 2009 and conditions are expected to worsen as the economy strengthens. Unlike many other industrialized countries, the United States is expected to experience population growth between 2010 and 2030, with total population increasing by 20 percent, from 310 million people to a projected 374 million. Highway vehicle miles traveled (VMT) is expected to increase more than twice as fast as population over this period. U.S. urbanization increased at an annual rate of 1.3 percent between 2005 and 2010, and is expected to continue on a gradual upward trend through 2035. Total VMT is also forecast to increase by 56 percent between 2010 and 2035. There is currently not a single major metropolitan area in the United States that is projecting a reduction in congestion in its long-range transportation plans.

Modeling commissioned for our report estimates that, in the absence of action, between 2010 and 2020, the nation is projected to waste a total of more than 1.6 billion barrels of oil in the top 90 urban areas as a result of congestion—more than 300 times the quantity of oil that spilled into the Gulf of Mexico as a result of the Deepwater Horizon disaster and almost eight times the daily rate.

### **Funding Challenges**

The current transportation funding regime relies on continually rising oil consumption to support increased spending. Federal fuel taxes are levied on a per-gallon basis and have not been increased since 1993. Since this time, their real value has decreased by approximately one-third. As the government mandates more stringent fuel economy standards and consumers continue to shift to more efficient and alternatively-fueled vehicles, the outlook for U.S. transportation system funding—90 percent of which comes from fuel taxes—is becoming increasingly unsustainable.

Yet as recently as 1998, the HTF was running such a large surplus that Congress transferred \$8 billion from it to the general fund. In 2001, the HTF reached a cash balance historical high of around \$20 billion. Since then, however, the balance has steadily declined simply because annual outlays are exceeding receipts collected. In 2009, the Highway Account ran a deficit of \$7.3 billion after outlays of almost \$38 billion. The Transit Account is smaller, but is also running deficits, with revenues of about \$4.8 billion and outlays of \$7.3 billion in 2009.

Recent actions taken by Congress have only provided a temporary solution. Over the last three years, Congress has enacted emergency legislation to support the HTF using general fund transfers of \$34.5 billion. In 2008, \$8 billion was transferred, followed by another \$7 billion in 2009, and then another \$19.5 billion in March 2010, which extended the funding for formula programs through to December 31, 2010. The Congressional Budget Office expects this transfer to support the existing contractual obligations of the highway and transit programs through 2013. More bailouts are likely to be necessary if the system is not restructured.

Road travel is severely underpriced. While drivers pay approximately 2 cents per mile in fuel taxes, the fully-burdened cost of driving in many urban areas significantly exceeds that amount. In essence, we have created a system that is not a free market—where supply and demand are allowed to meet at the true cost—but instead, at least to the consumer, often is treated as a free good. The result: perverse incentives, costs hidden in other taxes and the time and fuel wasted through congestion, and—ultimately—an inefficient and underfunded system. The market is not allowed to work, and the results are unsurprising.

For those of us concerned with energy security, there is another aspect of this funding system that is concerning. Federal programs allocate money to state DOTs using formulas that are functions of VMT and highway lane-miles. By linking VMT and highway mileage to funding (rather than, say, a measure of congestion or need), the current system is actually designed so that increased fuel consumption generates more highway funding. Alternatives to the current fuel tax funding system must be evaluated to address these significant problems and ensure a sustainable funding mechanism for the future.

## **Decision-Making Challenges**

Surface transportation policy in the United States consists of a complicated array of federal, state, and local programs. Some flexibility exists to shift funding across modes and between institutions, but the complexity and limited overall transparency results in agencies often being judged by the amount of money they spend, the number of capital investments they make, or how much control they can manage to exert over a process. This institutional structure drives an excessive focus on specific projects at the expense of overall system performance.

The programs that different administrations oversee are funded either by formula (“apportioned”) or through discretionary processes (“allocated”). In recent years, virtually all allocated programs have been earmarked by Congress, effectively eliminating any USDOT discretion. In SAFETEA-LU (2005), more than 6,000 earmarks accounted for around \$24 billion of authorized spending. This represented approximately 12 percent of the \$199.5 billion highway construction title of the bill—a substantially higher proportion than in earlier reauthorizations.

The result is a policy process focused on two fronts: states trying to re-work formulas to benefit themselves in apportionment calculations, and specific project sponsors lobbying aggressively for earmarks. Consideration for overall system outcomes has been virtually non-existent.

Apportioned funds typically permit recipients to exercise substantial flexibility to utilize federal funds on a broad range of transportation projects. Indeed, current law concentrates the majority of decision-making authority for projects at the state level. Unfortunately, many of the same forces that undermine an emphasis on performance at the federal level do the same at the state and local level.

Within states, enormous institutional battles rage between state DOTs, transit agencies, governors, mayors, MPOs, USDOT, and city DOTs, among others. Each of these entities claims important responsibilities, but no single entity is fully accountable for the success or failure of the entire transportation system in their region. Many of the most significant transportation challenges are located in metropolitan areas, and local officials may differ from their state counterparts on how best to address them. States and metropolitan areas are each required to develop transportation plans that identify specific projects and their relative priority. While these plans must be consistent, metropolitan areas that are not direct recipients of federal capital funding have limited leverage to alter priorities.

Once federal dollars are outlaid, there is no analysis as to whether a project actually improved the system in any measurable way. Instead, as long as a project appears on a plan, regardless of its rationale, it is considered an acceptable use of federal funds, assuming the project is eligible under Title 23 (Highways) or Title 49 (Transportation) of the United States Code.

## **Select Policy Recommendations**

The policy recommendations we released in February provide a vision for the future of the U.S. transportation system that recognizes and emphasizes the importance of oil consumption as a guiding principle for reforming project selection and federal regulation. Our proposals aim to

promote smarter, more cost-effective capital investments in highways, advanced technologies, and transportation projects that encourage higher operating efficiencies and lower energy use.

### **Oil Metric**

Current performance measures, including total cost of construction, lifecycle cost and transit fare box recovery, look only at financial costs and do not factor in externalities such as delay and oil use. A national oil savings performance metric would establish an important policy link between energy use and the transportation system. Large projects, and new capacity in particular, should be required to assess oil consumption impacts. By including the costs of oil consumption—and by extension, oil dependence and its negative consequences—into cost-benefit analyses, evaluations of potential projects will more accurately embody the overall impact of oil use.

A critical step towards this kind of performance-driven metric is data collection that is much broader, timelier, and more detailed than the current system employs. Implementing an oil metric—or other performance metrics—by which to choose and evaluate projects will require considerably upgrading USDOT’s data and analytical capacity. It is vitally important that the federal government begin to research and collect much more detailed and textured data on traffic, energy, freight movement, household travel, and infrastructure conditions. The expanded use of advanced technologies in the transportation system, as well as available analysis software, could greatly aid in the collection of useful data.

Common approaches should be developed to address the range of costs at a programmatic level as well as at a project level. At a programmatic level, this analysis would assist policymakers in determining how transportation funds are allocated by program and by region. At the project level, they could assist planners in making better project selection decisions.

### **Metropolitan Programs**

Despite covering just 20 percent of U.S. land, metropolitan areas contain more than 80 percent of the nation’s population, and account for the majority of both vehicle miles traveled and gross domestic product.

Direct road pricing is a highly underutilized though proven near-term tool to reduce congestion. Compared to fuel taxes, road prices are much more visible signals regarding the costs drivers are imposing on roads and other users, and are therefore more powerful in influencing driver behavior. Critically, dynamic road prices can capture the different costs imposed at different times of day. Prices can be varied to incorporate the costs of providing, maintaining, and operating the infrastructure as well as roadway damage associated with vehicle weight, congestion impacts, and vehicle emissions. This, in turn, can better inform individuals about the true costs of their travel choices. Travelers will then be able to make more efficient decisions about how and when they use existing transportation infrastructure.

Pricing travel directly, as opposed to indirectly, has been demonstrated to positively influence driver decisions in a number of ways. Effective pricing will make off-peak travel cheaper and will encourage drivers to reschedule some discretionary trips or even change their commute times. Drivers have also shown a willingness to combine trips (running several errands per trip rather than taking several trips) or plan their trips more carefully (considering closer

destinations). Even pricing part of the network through a traditional turnpike or a high occupancy toll (HOT) lane network can create a congestion-free route or network that allows buses, freight and emergency vehicles to avoid traffic and provide higher-quality service, and generally reduces journey times for remaining drivers.

Some travel, such as commutes for people with rigid work schedules, is inelastic. However, as USDOT's National Household Travel Survey confirms, a large and growing percentage of drivers during rush hour are non-commuters. In fact, the majority of rush hour trips in the morning (56 percent) and evening (69 percent) are now made by non-commuters. And because traffic functions nonlinearly, reductions in peak period highway traffic levels of as little as 10 percent could all but eliminate recurring system congestion.

It is important to emphasize here that our goal is *not* to stop people driving. Our mobility is an enormous asset to the economy and an integral part of American life and freedom. What we want to do is create a more efficient system where ultimately people travel smarter (whether by personal vehicle or other means), consume less energy, and save money.

To make these kinds of systems work effectively, Electronic Toll Collection (ETC) technologies will have to replace manual toll booths, enabling electronic payment as vehicles pass tolling stations at near-highway cruising speeds. ETC uses recently-developed vehicle-to-roadside communication technologies, and requires onboard units. Vehicle detection and classification, and enforcement technologies are also used. ETC offers advantages in terms of lowered toll collection costs, fuel savings, faster services, reduced mobile emissions, and expanded data and revenue collection capacity without requiring more infrastructure.

Driver use of these systems is already widespread. On the four toll routes operated by the Illinois State Toll Highway Authority, 82 percent of tolls are paid electronically every day (using the I-Pass system), and almost 4 million transponders are currently being used by drivers. I-Pass, along with other electronic toll collection systems like Fast Lane in Massachusetts, M-Tag in Maryland, Smart Tag in Virginia, and i-Zoom in Indiana, have been integrated into the E-ZPass system, allowing interoperability across 24 agencies and 14 states. This technology quickly identifies vehicle classes and assigns them differentiated tolls according to several criteria, which also gives policymakers flexibility to minimize any specific impacts on low-income drivers or any other target population. It is also important to note that a transparent commitment to privacy protection would be critical as more vehicles become part of any such network.

In addition, travel demand management (TDM) practices, which promote alternatives such as carpooling and telecommuting, represent potential low-cost measures to achieve fuel savings. Carpooling, for example, is utilized by around 15 million drivers in the United States each year.

This initial focus on metropolitan-area congestion is addressed in the paper's recommendations through two specific programs.

The first, a new federal formula program, would be funded by consolidating and eliminating existing duplicative programs. The program would focus on improving transportation system performance in metropolitan areas specifically (including urban and suburban locations). It

would deploy leading technologies, implement pricing strategies, and target new capacity investments towards acute bottlenecks and other areas of greatest need. It would also encourage economically justifiable alternatives to traditional single-occupancy travel, like the electrification of transportation, and dedicate any surplus revenues generated beyond those needed to fully cover allocated system costs for reinvestment in projects tied directly to the achievement of overall performance objectives.

The second, a competitive discretionary program, would make funds available to congested metropolitan areas for comprehensive proposals that seek to design and deploy bold project solutions. These might include dynamic tolling projects and other travel demand management (TDM) initiatives. Performance-based technology investments that target a range of including advanced traffic signals, quick clearance of accidents, and improved driver information should also be considered.

### **Freight**

In 2007, there were more than 4.6 trillion ton-miles of freight carried by air, truck, railroad, ship and pipeline in the United States—up almost 30 percent in the past 20 years. After decades of investment in the transportation system, freight transport has become a complex, multimodal network that moves more than 50 million tons of freight valued at \$36 billion each day. Pervasive just-in-time logistics and the economy’s continued shift from heavy industries towards services have changed the necessities of freight movement. The freight sector as a whole accounts for approximately 20 percent of total U.S. transportation sector energy consumption—a number forecast to rise through 2035.

While truck VMT increased more than 90 percent between 1980 and 2002, road lane-miles only increased 5 percent. The three metrics of capacity utilization—traffic density, average freight speed, and freight rates—all imply a growing long-term freight congestion problem regardless of the short-term congestion reprieve created by the recent recession.

Congestion in the nation’s privately owned freight railroad networks presents different policy issues than those on the publicly owned and operated highway system, but there is little question that the railroad sector will struggle to keep up with demand. Between 1990 and 2009, freight rail transport increased from approximately 260 billion to over 400 billion revenue ton-miles.

Freight congestion is likely to spread over the coming years from metropolitan areas and major interstate corridors to a large portion of mid-sized cities and non-interstate routes between major cities. Between 2002 and 2035, the constant dollar value of goods moved is expected to increase by more than 190 percent, twice the expected growth of tonnage, increasing the cost of congestion to shippers (and by extension, consumers). Unlike traditional freight transport for heavy industry and bulk agricultural products, these high-value goods and just-in-time systems depend on fast and reliable transportation.

Beyond congestion, freight transport often suffers from conflicting stakeholder interests at the local and regional levels. Many freight corridors pass through residential communities and areas of high-density commuter traffic. The noise, pollution, and congestion from freight have engendered some public support for “getting trucks off the road.”

USDOT has noted that as freight becomes an increasingly large share of total transport and relies on multimodal facilities, initiatives to improve passenger travel are less likely to have substantial freight co-benefits. While most passenger travel occurs locally, freight transport often occurs over long distances. In fact, two-thirds of the value of all freight crosses a state or international border.

Additionally, there is a significant regulatory mismatch between carrier networks and state DOT and EPA areas of jurisdiction. A train or truck may travel through a number of jurisdictions, each of which has different requirements and investment priorities. Yet states are often unwilling to invest in freight corridors that principally serve other states. This necessitates funding nationally-significant, freight-related initiatives that cut across state boundaries, something for which individual states rarely have a strong enough incentive to carry out under current operating constraints.

In our report, we suggest, among other things, the creation of a program to maintain and improve highway capacity outside of metropolitan areas and along major freight corridors. This program would focus on improving the efficiency of freight and goods movement, allocating funds to investments that have a substantial impact on interstate commerce and energy savings, and are consistent with overall performance objectives established in statewide transportation plans.

The current federal legislative freeze on states expanding carrier flexibility under their commercial truck size and weight laws is another instance where reform provides great potential for energy savings. This topic has been the subject of much controversy over the years, with safety, energy, industry, and other stakeholders being unable to reach any consensus on a different approach. USDOT and studies by others have shown that while the use of larger and heavier trucks reduces unit fuel economy, fewer trucks are required to transport the same total quantity of freight. This results in total VMT savings that more than offset the diminished fuel efficiency.

There are many potential reforms of federal truck size and weight regulations that could offer significant benefits without compromising safety. I would like to highlight one such measure: federal length regulation changes that would allow for 33 foot twin trailers. The use of 33 foot twin trailers as compared to 28 foot twin trailers would allow a carrier, on any given lane, to grow shipments up to 18 percent before adding incremental miles. According to a FedEx analysis, this could reduce annual fuel consumption by as much as 214 million gallons, all without the need for updated infrastructure or even changing the current federal gross vehicle weight limit of 80,000 pounds.

### **Review Process**

Related is the regulatory review process by which projects are deemed to have met the requirements of the National Environmental Policy Act of 1969, or NEPA. In order for the set of proposals we have outlined to be truly effective in reducing oil consumption—and for performance metrics to be meaningful—project approval must be focused and streamlined. The NEPA process should not be a multi-year conduit for general assessment of project worth, but rather an efficient and timely evaluation of its environmental impact.

Typically, this review process—from the date that the Notice of Intent is signed to the signing of the Record of Decision—takes longer than five years to complete for major projects. Given the current resource constraints at the state level, many projects must either finance themselves from project-related revenues or not proceed. Analyzing an array of financially unviable alternatives to a self-financing project makes little sense and wastes resources.

Other approaches could be piloted. These might include, for example, a negotiation-based process in which key stakeholders would reach a negotiated agreement after taking into account the environmental impacts and analysis of alternative options. If stakeholders are given actual negotiating rights—as opposed to only the power to delay the process that they have today—they can negotiate better up-front mitigation packages by reducing the enormous costs associated with these delays.

### **Conclusion**

The U.S. transportation sector and U.S. energy use are, to a very significant extent, irrevocably linked. The current approach to policymaking is unsustainable for the U.S. transportation system, national energy security, and the growth of the American economy.

Our efforts must therefore be focused on developing transportation policies that transform the way projects are funded and chosen, using oil consumption as a principal metric. Reforms are also required to promote smarter, more cost-effective capital investments in highways, advanced technologies, and other transportation projects that encourage higher operating efficiency and lower energy use. Policies to promote more stable road speed conditions in particular are crucial to lowering sectoral oil consumption. Urban congestion pricing programs, an expansion of tolling projects, and alternatives to the current fuel tax regime will help address efficiency and funding challenges, in addition to ongoing performance-related concerns.

I understand that this remains a challenging time for suggesting reform and even limited government expenditures for any projects, no matter how worthwhile. And I would emphasize that the infrastructure policies we recommend today are not designed, at least in the short term, to increase the total pot of money available for transportation projects, but instead to improve how those projects are designed, chosen and evaluated. We are not arguing for more, but instead for better.

That said, when widening beyond infrastructure to a full and comprehensive solution set, I would add this: we cannot sit idle while oil dependence continues to threaten our economy and security. Inaction is, simply put, inexcusable. Each of the three pillars I have identified today—fuel efficiency, fuels (both alternatives like using electricity for transportation and domestic production), and infrastructure—represent part of a comprehensive strategy that we must—must—undertake if we are to safeguard our nation and our future.

What happens if we do nothing? In the midst of a well-supplied oil market and weak oil demand growth in developed economies, the United States spent more than \$265 billion on net petroleum imports in 2010. For the third straight year, and despite the economic difficulties this nation has faced and is still facing, that accounted for over 50 percent of the total U.S. trade deficit. At the

same time, most analysts expect the medium and long term to be characterized by rapid oil demand growth in emerging markets coupled with weak increases in global oil production capacity. The result will be a return to tight oil markets and volatile oil prices in the future. The IEA expects this scenario to play out by 2014. Other analysts expect the crunch to come this year. With supplies offline in Libya, we are receiving an early warning signal, and things could get much worse. Libya only represents about 2 percent of global oil production, and yet violence there has pushed oil up past \$100 per barrel. More unrest in an even more important oil producing nation would be catastrophic.

Here is what I know, as the leader of a company that both depends on and helps to strengthen the mobility upon which our global economy is built: we must look at this problem from every angle. We must produce more oil at home. We must use oil more efficiently. We must, eventually, transition to cars and trucks that use no oil at all. And we must have a transportation system in which assets are allocated based on needs and costs aligned with use, helping to restore the mobility upon which our dynamic economy depends. Each step is possible. Each step is realistic. And each step is critical.

Thank you for your attention.