

**Building
America's**

→ *Future*

**Falling Apart
and Falling**

***Behind* ←**

About Building America's Future Educational Fund

Building America's Future Educational Fund (BAF Ed Fund) is a bipartisan coalition of elected officials dedicated to bringing about a new era of U.S. investment in infrastructure that enhances our nation's prosperity and quality of life. Founded by former Governor Edward Rendell of Pennsylvania, former Governor Arnold Schwarzenegger of California, and Mayor Michael Bloomberg of New York, BAF Ed Fund boasts a politically diverse membership of state and local elected officials from across the nation. BAF Ed Fund seeks to advance a new national vision for infrastructure investment that strengthens our cities and rural communities, and focuses on economic growth, global competitiveness, job creation, and environmental sustainability. In addition, we embrace a wide definition of infrastructure—from roads and bridges to water and sewer systems, energy systems, buses, trains, ports, airports, levees, dams, schools, and housing.



Michael R. Bloomberg

A handwritten signature of Michael R. Bloomberg in blue ink, written in a cursive style.



Edward G. Rendell

A handwritten signature of Edward G. Rendell in blue ink, written in a cursive style.



Arnold Schwarzenegger

A handwritten signature of Arnold Schwarzenegger in blue ink, written in a cursive style.

Building America's Future

Falling Apart and Falling Behind

Transportation Infrastructure Report 2012

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Introduction

Rebuilding America's economic foundation is one of the most important missions we face in the 21st century. Our parents and grandparents built America into the world's leading economic superpower. We have a responsibility to our own children and grandchildren to strengthen—not squander—that inheritance, and to pass on to them a country whose best days are still ahead.

Our citizens live in a turbulent, complicated, and competitive world. The worst recession in eighty years cost us trillions in wealth and drove millions of Americans out of their jobs and homes. Even more, it called into question their belief in our system and faith in the way forward.

Our infrastructure—and the good policy making that built it—is a key reason America became an economic superpower. But many of the great decisions which put us on that trajectory are now a half-century old. In the last decade, our global economic competitors have led the way in planning and building the transportation networks of the 21st century. Countries around the world have not only started spending more than the United States does today, but they made those financial commitments—of both public and private dollars—on the basis of 21st-century strategies that will equip them to make commanding strides in economic growth over the next 20–25 years.

Unless we make significant changes in our course and direction, the foreign competition will pass us by, and a real opportunity to restore America's economic strength will be lost. The American people deserve better. Since we first released this report in August 2011, Congress has enacted a new transportation funding law called Moving Ahead for Progress in the 21st Century or MAP-21. While it begins the process of reforming and modernizing the nation's transportation policy, there remains much more to be done.

A Mounting Crisis

Falling Apart and Falling Behind lays out the economic challenges posed by our ailing infrastructure, provides a comparative look at the smart investments being made by our international competitors, and suggests a series of recommendations for Congress to begin to build on MAP-21 and craft new innovative transportation policies in the U.S.

This report frames the state of our infrastructure in terms of the new economic realities of the 21st-century economy and presents the challenges we currently face. The surge in global trade has realigned America's business transport needs, complicating supply chains and increasing the need for sophisticated intermodal transportation. Our economically vital gateways and corridors now operate over capacity, imposing costs of \$200 billion a year. Our passenger transport system, especially in our major metropolitan regions, is also burdened with costly congestion as passenger travel increases. Largely run on gasoline, our transportation system is environmentally, politically, and economically unsustainable. We have the world's worst air traffic congestion, in part because we are still using the radar-based air traffic control system developed in the 1950s.

The first section of the report, **A Mounting Crisis**, makes the case why U.S. infrastructure has fallen from first place in the World Economic Forum's 2005 economic competitiveness ranking to number 14 today. We have let more than a half-century go by without devising a strategic plan on a national scale to update our freight and passenger transport systems. The size of our federal investment in transportation infrastructure as a share of GDP has been dwindling for decades, and most federal funds are dispersed to projects without imposing accountability and performance measures. This lack of vision, lack of funding, and lack of accountability has left every mode of transportation in the United States—highways and railroads, airports and sea ports—stuck in the last century and ill-equipped for the demands of a churning global economy.

Losing Ground to Our Global Competitors

The second section of the report, **Losing Ground to Our Global Competitors**, takes an international look at transportation infrastructure and highlights certain themes that unify our competitors' plans while setting our transportation policies apart. Governments around the world—from the EU to China, Canada to Australia—are making unprecedented national investments in transportation infrastructure on the basis of new plans to promote economic growth through infrastructure.

Guided by principles of improving economic efficiency and sustainability, other countries are devoting most of their attention and resources to building the high-tech and low-carbon networks for the 21st century. In particular, they are investing in intermodal freight facilities and strategic corridors, and they are building high-speed rail. A comparative look at high-speed rail networks around the world offers lessons about how to successfully build high-speed rail in strategic corridors—namely between Boston and Washington, between LA and San Francisco, and in a hub-and-spoke around Chicago—that will ease air travel congestion around the country and unlock potential economic growth in those regions.

Recommendations for Reform

The third section of the report, **Recommendations for Reform**, contains a clear set of recommendations for moving our economy—and the case for strategic investment in infrastructure—forward. To stay competitive in a 21st-century economy, the federal government must:

Develop a national infrastructure strategy for the next decade that makes choices based on economics, not politics. The U.S. should adopt a 10-year national plan for making strategic investments in our nation's infrastructure. The plan should focus on transportation, but include other infrastructure challenges such as water and the electric grid. To keep America economically competitive, this plan must be as significant in scale as the plans adopted by our competitor nations. To do so, we believe, it must spur an investment of a least \$200 billion per year.⁴ **This national infrastructure strategy will create nearly 5 million jobs for the next decade.** Experts agree that \$1 billion in infrastructure investment creates more than 25,000 jobs at construction sites and factories producing needed raw materials. This investment would create nearly half of the 12.5 million jobs that we need to revive the American economy and keep them in place for the next decade.

Pass a multi-year transportation bill updated to compete in the 21st-century globally economy. After the last 5-year transportation bill expired in 2009, Washington passed ten short-term extensions of federal funding before enacting a new multi-year bill. In July 2012, Congress passed Moving Ahead for Progress in the 21st Century (MAP-21), a 2-year bill that started to lay the groundwork for policies that will modernize the nation's transportation infrastructure but continues many of the outdated policies and practices of the past. Washington must begin work on a new multi-year bill that moves from a system that thinly distributes funds based on archaic formulas and political expediency to a plan that sets priorities and makes hard choices based on increasing economic return and mobility while reducing congestion and

pollution. As a result, the investment strategy will focus on projects that will yield results—Next Gen aviation system; high-speed rail in key corridors; freight rail; public transit; and maintenance of our crumbling transportation network.

Be both innovative and realistic about how to pay. America needs a National Infrastructure Bank that can leverage private dollars and invest in the best big projects, including those that span state boundaries or encompass multiple modes of transportation. Once the U.S. economy improves, we should consider raising the nearly 20-year old federal gas tax and indexing it to inflation. Washington also needs to look at all long-term revenue generating options such as congestion pricing, carbon auctions, fees based on miles traveled, or reserves built into capital budgets.

Promote accountability and innovation. Under current transportation policy, Washington impedes local innovation while failing to impose accountability for money distributed across the country. Washington should set clear criteria for all funding, encourage state and local innovation through competitive grants, streamline the project delivery process to ensure projects are started quickly, and carefully audit the results to ensure projects are completed on time, on budget, and yielding promised results.

The U.S. must embark on a new American adventure—one that requires leadership and vision from our elected leaders. To achieve this we will need a bipartisan alliance of American leaders who believe we can achieve anything, can build anything, and can do anything we put our minds to—and who will in turn, convince our citizens that this course is not an option but a necessity to preserve our future strength and success—to preserve American greatness—greatness that was created by Americans over the last 235 years by their willingness to take on new challenges with the belief that our country could achieve anything.



→ **1** ***Introduction***

Rebuilding America's economic foundation is one of the most important missions we face in the 21st century. Our parents and grandparents built America into the world's leading economic superpower. We have a responsibility to our own children and grandchildren to strengthen—not squander—that inheritance, and pass on to them a country whose best days are still ahead.

Whether we succeed in our mission rests largely on whether we attempt to build a 21st-century economy on 20th-century infrastructure, or act with the same visionary boldness that led Americans to build the Erie Canal, the Transcontinental Railroad, the world's largest airports, and the Interstate Highway System.

When it comes to transportation policy, Washington has been on auto-pilot for the last half-century.

In the last decade, our global economic competitors have led the way in planning and building the transportation networks of the 21st century.

Why is infrastructure so important?

Americans see the consequences of inadequate infrastructure everyday: when we get stuck in traffic jams on our way to work; when we get stuck at the airport because our flights are delayed; when mass transit options are too few or too expensive; when our electric grid fails and leaves us in the dark; when our ports are too small to handle modern cargo ships; and when our bridges must be closed or torn down as a result of structural deficiencies. As individual cases, these deficiencies can be daily annoyances. Together, they form a national crisis.

The strength of every country's economy derives from the productivity of its human capital and natural resources. We have an abundance of both. But what these great gifts produce is meaningless unless they find their way to the marketplace. That is what infrastructure does. It increases human mobility and facilitates efficiency. It enables a healthy economy to channel the flow of goods and services around the corner and around the globe. Done right, infrastructure helps us open new markets to goods and services, drops the costs of transportation, speeds deliveries, and lowers prices for consumers. Capital and jobs flow to the most efficient markets, and the most efficient markets are dependent on modern, reliable, high-tech infrastructure.

The infrastructure past generations built for us—and the good policy making that built it—is a key reason America became an economic superpower. But many of the great decisions which put us on that trajectory are now a half-century old. In the last several decades, our political system has failed us.

Year after year, Washington kept getting three essential pieces wrong. First, it lost focus and strategic vision. Second, it stayed wedded to revenue sources that no longer meet our capital needs and to policy approaches that year after year locked us into increasingly archaic priorities. And third, it failed to ensure that federal dollars were directed to projects that would strengthen our economic competitiveness.

When it comes to transportation policy, for instance, Washington has been on auto-pilot for the last half-century. While the new two year transportation law known as Moving Ahead for Progress in the 21st Century (MAP-21) includes some important programmatic reforms, federal transportation policy still largely adheres to an agenda set by President Eisenhower. Federal transportation dollars are generally spread thin around the country, instead of targeting the economically critical points in our national network. Most transportation projects are not subject to the cost-benefit analysis or specific performance measures we've come to expect in other arenas. In essence, Washington has followed an outdated decision-making process that increasingly drove us further and further off course.

In the last decade, our global economic competitors have led the way in planning and building the transportation networks of the 21st century. Leading countries around the world have not only started spending more than the United States does today, but they made those financial commitments—of both public and private dollars—on the basis of 21st-century strategies that will equip them to make commanding strides in economic growth over the next 20–25 years. These decisions have put them on a cycle of investment and economic growth that will improve their standard of living and improve their citizens' quality of life.

Unless we make significant changes in our course and direction, the foreign competition will pass us by and a real opportunity to restore America's economic strength will be lost.

Our greatest leaders grasped just how vital it was to build strong infrastructure to protect national security and promote economic growth.

→ **A History of Leadership and Innovation**

This idea of building and maintaining a successful economy—with infrastructure at the center of federal policy—has been with us since the moment we first became Americans.

The visionary authors of our Constitution were also the architects of our prosperity. They designed a federal system limited enough to protect our liberties as individuals but expansive enough for a central government that could plan, invest, and build for a more productive economic future that we could enjoy in common by acting together.

Our tiny country emerged from the Revolutionary War deeply in debt with no money besides import duties to fund its operations. So, our government invested in a system of beacons, buoys, and lighthouses on the eastern seaboard and a fleet of ships to intercept smugglers, to collect what we were owed. This effort meant our nation could keep itself afloat financially at a time when more than half of the federal budget was being consumed to service our debt.¹

What started as crucial to our survival rapidly became a key to our prosperity.

At transformative moments in the 19th and 20th centuries, our greatest leaders grasped just how vital it was to build strong infrastructure to protect national security and promote economic growth, so that our wealth and well-being could grow. They built a transportation network that drove our economic development and established our leadership in innovative engineering, manufacturing, and design.

In 1808, President Thomas Jefferson's administration released the Gallatin Plan, articulating a 100-year vision for a national transportation system and proposing a \$20 million (\$324 billion in 2010 dollars) program to develop canals and roadways. This visionary blueprint by government officials and industrialists laid the groundwork for the construction of the Erie Canal and the Transcontinental Railroad. By improving waterway capacity and building canals, they created an efficient trade network and expanded our economic reach.

Even as the country was torn apart by civil war, Abraham Lincoln appreciated the critical



The ceremony commemorating the driving of the golden spike to complete the first transcontinental railroad in North America, May 10, 1869.

*Infrastructure investment,
in days of debt
and surplus,
helped our nation
build the **strongest**
and **most successful**
economy the world
has ever known.*



In 1956, Dwight Eisenhower convinced Congress to build and finance the Interstate Highway System.

importance of unifying the east and west by a coast-to-coast railroad. With the leadership of government and financiers, America built the world's best railroad system, creating a coast-to-coast network that further unified and fortified the national economy.

Half a century later, Teddy Roosevelt established the Inland Waterways Commission to develop a comprehensive plan for improving America's waterways for commercial traffic. Infrastructure building, orchestrated by his cousin Franklin, brought electricity to rural America, and an ambitious list of projects including bridges, tunnels, and airports that employed millions of Americans at the height of the Great Depression and continue to serve our country today.

Following World War II, Dwight Eisenhower had a vision to build the world's best highway system, easing mobility around the country and opening up vast new regions to

greater economic opportunity. In 1956, he convinced Congress to finance that vision, and the Interstate Highway System was born, forever changing the American landscape and creating what would become an essential element of the definitive American lifestyle for the next half-century.

This combination of American ingenuity and forward-looking policy, which catalyzed private sector innovation and private sector investment, put us on a rising trajectory. Infrastructure investment, in good times and bad, in war and peace, in days of debt and surplus, helped our nation build the strongest and most successful economy the world has ever known.

But the legacy of even our smartest decisions cannot last forever, and we are now left struggling with a transportation network that has not adjusted to 21st-century realities and cannot meet our economic needs going forward.

→ **The New Economic Realities**

In Chicago, the nation's biggest rail center, congestion is so bad that it takes a freight train longer to get through the city limits than it does to get to Los Angeles.

*Freight bottlenecks and other forms of congestion cost about **\$200 billion**, or **1.6%** of the U.S. GDP, a year.*

In the 21st century, globalization has radically changed the economy and the world's trade patterns, while shifting and intensifying the demands we place on our transportation network.

Trade between the U.S. and other countries increased by 13% a year between 2003 and 2008.² Economic growth now depends on American businesses' ability to participate in this growing global trade, and moving freight cheaply, easily, and reliably is now more directly related to the overall health of our economy than ever. As much as 60% of American-made products are now exported, and so the success of the manufacturing sector depends on our ability to export what we make here and sell it in the global marketplace.

Billions of dollars' worth of goods move around this country every day, by rail, truck, and air, to and from manufacturing plants, packaging centers, warehouses and distribution facilities, cargo airports and international shipping terminals. The supply chain now spans the globe, and a significant contributor to the American economy is the ability to transport goods cheaply, efficiently, and reliably across national corridors to and from international gateways.

An explosion in shipping from China has fundamentally altered global shipping patterns and increased congestion at major U.S. ports. The expansion of the Panama Canal currently underway will direct more mega-ships from Asia directly to our east coast ports—but only if they are deep enough to accommodate the new supertankers.

The surge in global trade is expanding and realigning American business transportation needs. International merchandise and goods are now transported in shipping containers, which can be moved, packed full of goods, and directly transferred from a ship to a truck or a train. New trade features and patterns are straining access to and from ports, increasing the need for sophisticated logistics to oversee more complicated supply chains, and making "intermodal"—

involving one or more types of transport—the new necessity for 21st-century freight transportation.

This is how business is done in the 21st century, but the U.S. is falling behind.

Our freight transportation system was not built for the explosive growth of coast-to-coast shipping and international trade experienced over the past two decades, and our economically vital gateways and corridors—our primary port, road, and rail routes for shipping goods in and out of the country—now operate at or over capacity. Congestion plagues our freight corridors and acts as a drag on the American economy as a whole. In Chicago, the nation's biggest rail center, congestion is so bad that it takes a freight train longer to get through the city limits than it does to get to Los Angeles.³ Freight bottlenecks and other forms of congestion cost about \$200 billion, or 1.6% of the U.S. gross domestic product (GDP), a year.⁴

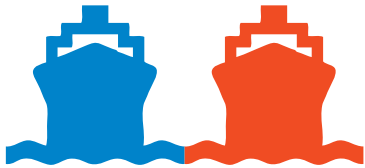
Freight moving by water is slowed by similar constraints on capacity and limitations of aging infrastructure. Our ports were built for the last century's economy, without sufficient intermodal access for increased container traffic. Our inland waterways are similarly overburdened: dozens of locks along major inland shipping routes are past their 50-year life span, and some are more than a century old and showing their age.

Congestion and capacity constraints threaten to increase the cost of trade and impede our global competitiveness. Delays in freight movement impose real costs on businesses that reduce productivity, impede our competitiveness, and increase prices for consumers. General Mills estimates that every one mile per hour reduction in average speed of its trucking shipments below posted limits adds \$2 million in higher annual costs.⁵ According to UPS, if congestion causes each UPS delivery driver to incur 5 minutes of delay, it would cost the company \$100 million.⁶

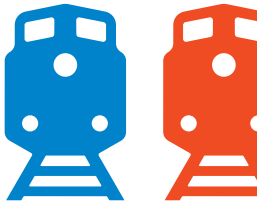
To cope with capacity constraints, businesses also devote an increasing amount of resources to logistics and supply chain management. American companies' logistics costs—the costs of moving goods,

PROJECTED INCREASE IN U.S. TRAVEL AND FREIGHT

America's transportation network is not set up to accommodate the needs of our 21st-century lives.



**PORT VOLUME TO
DOUBLE BY 2020**



**FREIGHT TONNAGE
TO INCREASE
88% BY 2035**



**PASSENGER MILES
TRAVELED TO INCREASE
80% IN 30 YEARS**

including transportation, warehouse, and distribution costs—fell through the 1980s and 90s, but over the past decade they have been rising as a percent of GDP, peaking in 2008 at 9.4%.⁷ The on-site cost of mining metallurgical coal in North America may be the same as in Australia, but the cost of shipping it to the coasts to export to Asia is up to 4 times greater due to transportation and logistical costs.⁸

The costs of an overtaxed transportation network are bound to get worse as more and more freight moves through the system. Demand for freight rail shipments is increasing at a steady clip: freight tonnage is projected to increase 88% by 2035.⁹ By 2020, every major U.S. container port is projected to at least double the volume of cargo it was designed to handle. Some East Coast ports will triple in volume, and some West Coast ports will quadruple.¹⁰ We risk debilitating consequences if we don't figure out how to accommodate this rising demand.

And it's not just business that has changed faster than our infrastructure. America's transportation network is not set up to accommodate the needs of our 21st-century lives. Passenger travel is expected to rise as the economy recovers and our population grows, with total vehicle-miles traveled likely to increase by 80% in the next 30 years.¹¹ An additional one billion commercial air passengers are expected to fly each year by 2015, a 36% increase from 2006.¹²

The vast majority of this increased traffic will occur in the urban centers and surrounding suburbs where the U.S. population—and its economic activity—is overwhelmingly concentrated. The 100 largest U.S. metropolitan regions house almost two-thirds of the population and generate nearly three-quarters of our GDP. In 47 states—even those traditionally considered 'rural,' like Nebraska, Kansas, and Iowa—the majority of GDP is generated in metropolitan areas.¹³ And over the next 20 years, 94% of the nation's economic growth will occur in metropolitan areas.¹⁴

Metropolitan areas are already home to the most congested highways, the oldest roads and bridges, and the most overburdened transit systems—and the strains on the transportation system are only bound to get worse. By 2035, an estimated 70 million more people will live in U.S. metropolitan regions. More people bring more commerce and greater transportation demands. Every American accounts for about 40 tons of freight to be hauled each year—so an additional 2.8 billion tons of freight will be moved to and from major metropolitan regions in 2035.¹⁵ Our transportation system is simply not up to the task.

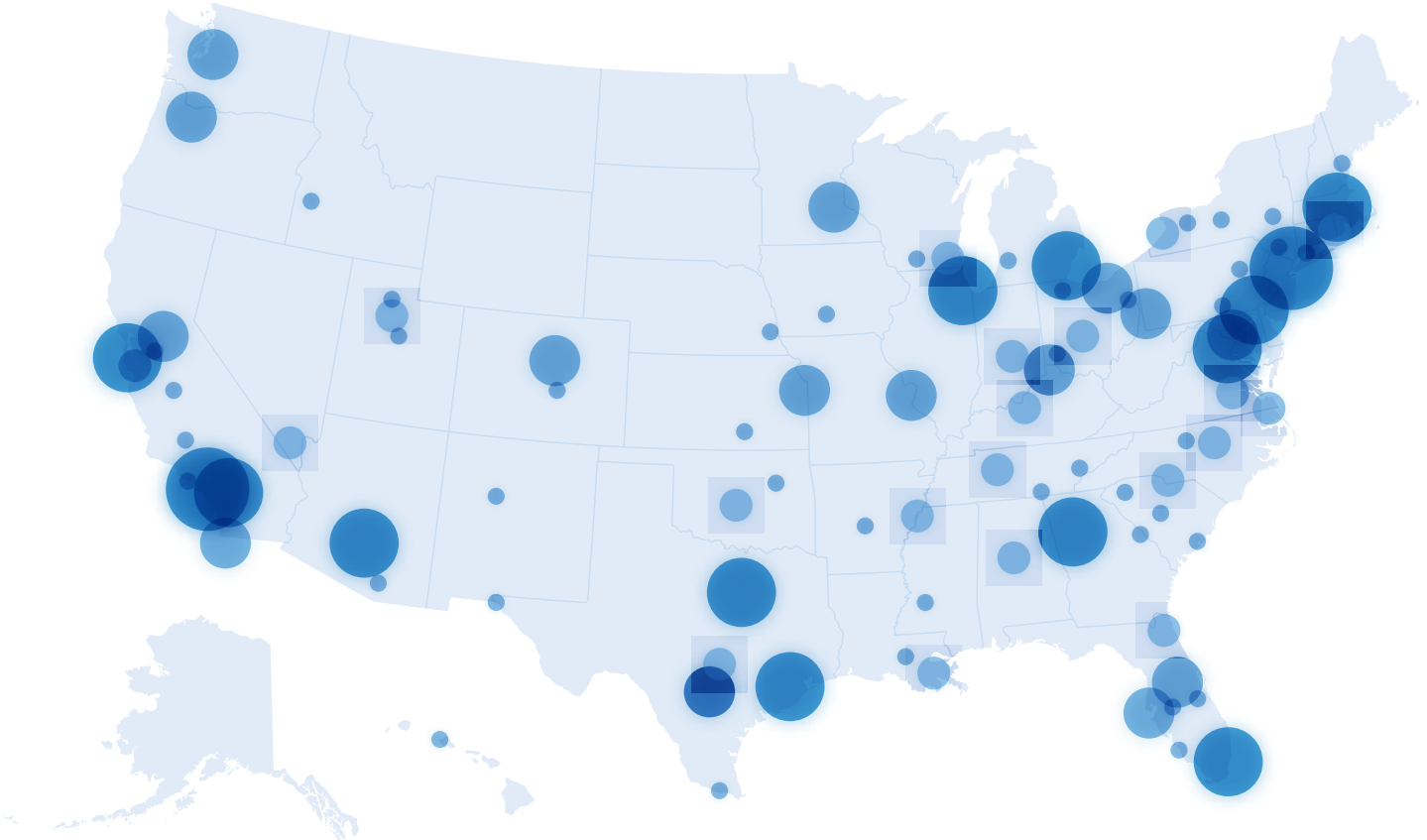
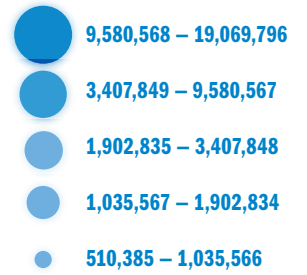
Our transportation system has also not adapted to the energy realities of the 21st century. Air pollution and carbon emissions—the majority of which in the United States are generated by transportation—threaten the environment. Reliance on foreign oil has imperiled our national security. And fluctuating gas prices are making Americans' car-dependent lifestyles simply unaffordable. We are increasingly aware that for all these reasons a transportation system largely run on gasoline is environmentally and economically unsustainable.

In a global economy, businesses need access to manufacturing plants and distribution centers, to international gateways like ports and airports, and to consumers in both metropolitan and rural regions. People need reliable and efficient ways to commute to work and go about their daily lives. We need a modern infrastructure system if we are to meet both needs. And if we don't create a transportation system that functions reliably and cost-effectively in the 21st century, companies operating in this globalized world can simply choose to do their business elsewhere—taking U.S. jobs and revenues with them.

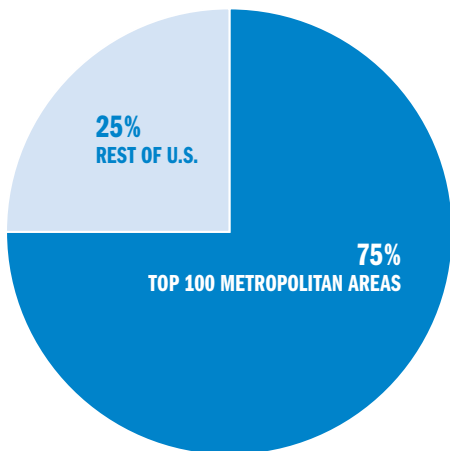
AMERICA'S CENTERS OF ECONOMIC ACTIVITY METROPOLITAN POPULATION 2010 ESTIMATE

Metropolitan regions—urban centers and surrounding suburbs—are increasingly the hubs of American economic activity. Nearly two-thirds of the population lives in the largest 100 metro areas, and an estimated 70 million more people will live in metropolitan areas by 2035—spurring an additional 2.8 billion tons of freight moved to and from major metro areas. Our major metro areas already suffer from the most congested highways, the oldest bridges, and the most overburdened transit systems.

POPULATION SCALE



Source: Brookings Institution, 2009



CONCENTRATION OF U.S. GDP

Nearly 75% of U.S. GDP is now generated in the top 100 metropolitan areas, where most of the U.S. population now lives. Because most federal transportation policy does not prioritize economically strategic points, metro regions do not get federal support commensurate with their value to the national economy.

*Over the next 20 years,
94% of the nation's economic growth
will occur in metropolitan areas.*



2 ←

A Mounting Crisis

In 2005, the World Economic Forum rated U.S. infrastructure number one for economic competitiveness. In just seven years, we slipped to number 14. How did this happen?

Stunningly, the United States has not made a significant strategic investment in the national transportation network since we finished building the Interstate Highway System decades ago. We have let more than half a century go by without devising a strategic plan on a national scale to update our freight or passenger transportation systems.

Instead, the federal government has opted to direct most funding to building highways, to the detriment of the rest of the transportation network; to disperse most funds to projects without imposing accountability and performance standards; and to allow pork-barrel spending on politically convenient rather than economically strategic projects. And the federal government has not significantly supported or catalyzed further private sector investment.

→ **Lack of National Vision**

In stark contrast to our most agile and aggressive foreign competitors, the U.S. stands increasingly alone in our failure to reorient our transportation spending according to a new forward-looking vision that could build a transportation network fit for a 21st-century economy. Without a similarly strategic plan of attack to create a state-of-the-art transportation network, the U.S. will be left far behind.

This striking lack of vision is a debilitating problem. Instead of taking a comprehensive look at the current weaknesses in our national network, we are largely following the same policy goals and guidelines announced when Eisenhower was president. As a result, federal transportation policy is skewed toward maintaining and expanding the Interstate Highway System. We've put relatively little emphasis on targeting our most economically strategic trade corridors or building new transport systems to meet our 21st-century economic needs.

Government transportation spending, at all levels of government, is overwhelmingly directed toward roads. Since 1956, the largest portion of public funding for transportation infrastructure was dedicated to building and maintaining highways.¹ Although a small portion (15%) of the federal gas tax is dedicated to a fund for mass transit, the vast majority of federal gas tax revenue is spent on highways. The same is true for state gas taxes: 30 states are actually constitutionally or statutorily required to spend 100% of their gas tax revenues on roads. The disproportionate channeling of transportation dollars toward highways has encouraged more and more construction of roads, even as the demand rises for other forms of transportation.

The last multi-year infrastructure law passed by Congress, the 2005 Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (known as SAFETEA-LU), authorized \$286.4 billion of federal spending on surface transportation projects through 2009—nearly 70% of which has been spent on highways, and only 1% of which has been directed to ports, national freight gateways, and trade corridors. After that, the American Recovery and Reinvestment Act of 2009 (ARRA) provided an additional \$48 billion in federal stimulus dollars for transportation projects, most of which also went to roads. In July 2012, President Obama signed the Moving Ahead for Progress in the 21st Century (MAP-21) bill, which authorizes \$105 billion for two years to continue federal transportation programs at existing funding levels. MAP-21 maintains SAFETEA-LU's general funding formulas, ensuring that the overwhelming majority of it will be directed to highways.

There is no question that America must continue to provide adequate funding to ensure the efficiency and safety of our highways, roads, and bridges since they will always remain an important component of our transportation network. But despite the emphasis on our road system, we are not meeting the challenge. Congestion still predominates, especially in our metro areas, and the system has serious safety challenges. For example, America currently has more than 69,000 structurally deficient bridges, more than 11% of all the bridges in our country.²

Meanwhile, underinvestment in airports, in commuter and freight rail, and in ports costs us jobs, economic growth, and access to overseas markets. Compared to the significant sums dedicated to roads, government spending on other modes of transportation is relatively meager. Under Map-21, the U.S. Department of Transportation (USDOT) will spend about \$10.5 billion a year on public transit, or less than a quarter of what it spends on highways. The federal government contributes even less to Amtrak's operation costs.

In contrast to its highway funding programs, USDOT encourages greater state contributions to transit projects. Since the majority of states are constitutionally or statutorily

WORLD INFRASTRUCTURE RANKING

2012 Global Competitiveness Index

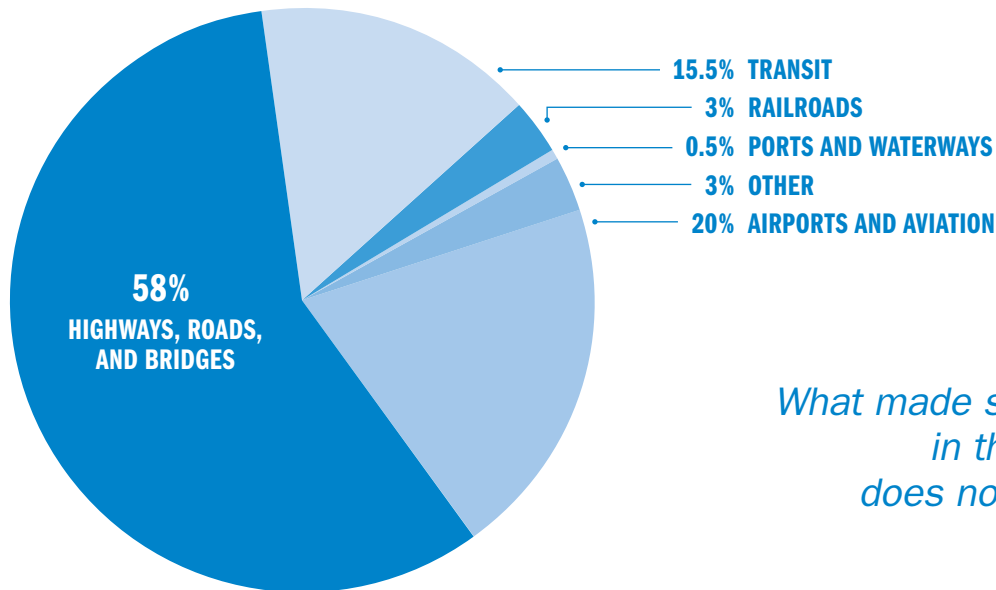
1	HONG KONG
2	SINGAPORE
3	GERMANY
4	FRANCE
5	SWITZERLAND
6	UNITED KINGDOM
7	NETHERLANDS
8	UNITED ARAB EMIRATES
9	KOREA
10	SPAIN
11	JAPAN
12	LUXEMBOURG
13	CANADA
14	UNITED STATES

Source: World Economic Forum, "The Global Competitiveness Report 2012-13," Table 5.

USDOT OUTLAYS 2011

Source: U.S. Department of Transportation, 2011.

Total Spending=\$77.5 billion



*What made sense
in the **Eisenhower Era**
does not seem sustainable today.*

*A study by the U.S. Chamber of Commerce recently found that our transportation system is underperforming to a degree that we are effectively leaving **\$1 trillion of GDP on the table.***

prohibited from using state gas taxes for public transit projects, USDOT's funding requirements are a tough imposition on states. Unwilling or unable to match federal contributions with general revenue funds, states may be more inclined to seek funding for more road projects than for new transit projects.

The problem is that we cannot build enough roads to meet our growing transportation needs. We've built enough new roads between 1988 and 2008—an additional 131,723 miles of roads—to circle the globe more than five times.³ But despite all of the resources expended on new highways, we haven't fixed the roads and bridges that are falling apart, and we haven't solved our congestion problems.

Merely expanding our already extensive highway system is not a plan for the future. We need a new national vision for building and maintaining an efficient transportation that meets the needs of a 21st-century economy.

→ **Limited Size and Scale**

In addition to lacking vision, the size and scale of our infrastructure investment is far below adequate. The American transportation network has been under-funded for decades. Only about 1.7% of U.S. GDP is spent on transportation infrastructure. American infrastructure spending in real inflation-adjusted dollars is about the same level now as it was in 1968—when the economy was far smaller.⁴

Transportation spending is a complicated patchwork of dollars distributed by federal, state, and local governments, financed by a mix of gas taxes, other motor vehicle and commercial truck taxes, and general revenue funds. About a quarter of transportation dollars are provided by the federal government, with the rest covered by state and local governments.⁵

Federal dollars for transportation infrastructure are largely generated by the federal gasoline tax, which has stood at 18.4 cents a gallon since 1993. Federal gas taxes are deposited in the Highway Trust Fund, which was established in 1956 to provide ongoing revenue for federal highway construction. Because the federal gas tax is not tied to inflation, its purchasing power has dwindled substantially over the years. And because American cars have become so much more fuel efficient in recent decades, federal gas taxes have raised fewer and fewer funds, even as Americans drive more and more.

As a result, the Highway Trust Fund, which is almost entirely comprised of gas tax receipts, no longer covers the costs of operating and maintaining our highway system. Since the Fall of 2008, Congress has bailed it out with \$52 billion of general revenue funds to cover its outlays.⁶

Our government commitment to infrastructure as a share of GDP has shrunk over the years, and now our primary funding stream is drying up. What made sense in the Eisenhower Era does not seem sustainable today.

→ **Insufficient Accountability**

Since the establishment of the federal highway system, Congress has passed multi-year transportation legislation, authorizing the use of federal funds for surface transportation projects. The overwhelming amount of that money is directed to state and local governments for road and bridge construction, repair, and maintenance. The Highway Trust Fund distributes those funds according to a set formula, and as a result, dollars are automatically spread thinly around the 50 states with little regard to national priorities. Certain new grant and loan programs require state and local governments to submit applications and compete for federal dollars, but the majority of federal dollars are not necessarily targeted at those projects that will create the most jobs and generate the most economic activity.

But a national network, funded nationally, requires national benchmarks to realize national outcomes. Awards of federal funds should come with requirements that state officials conduct cost-benefit analyses or otherwise be held against specific performance standards for the use of the funds.

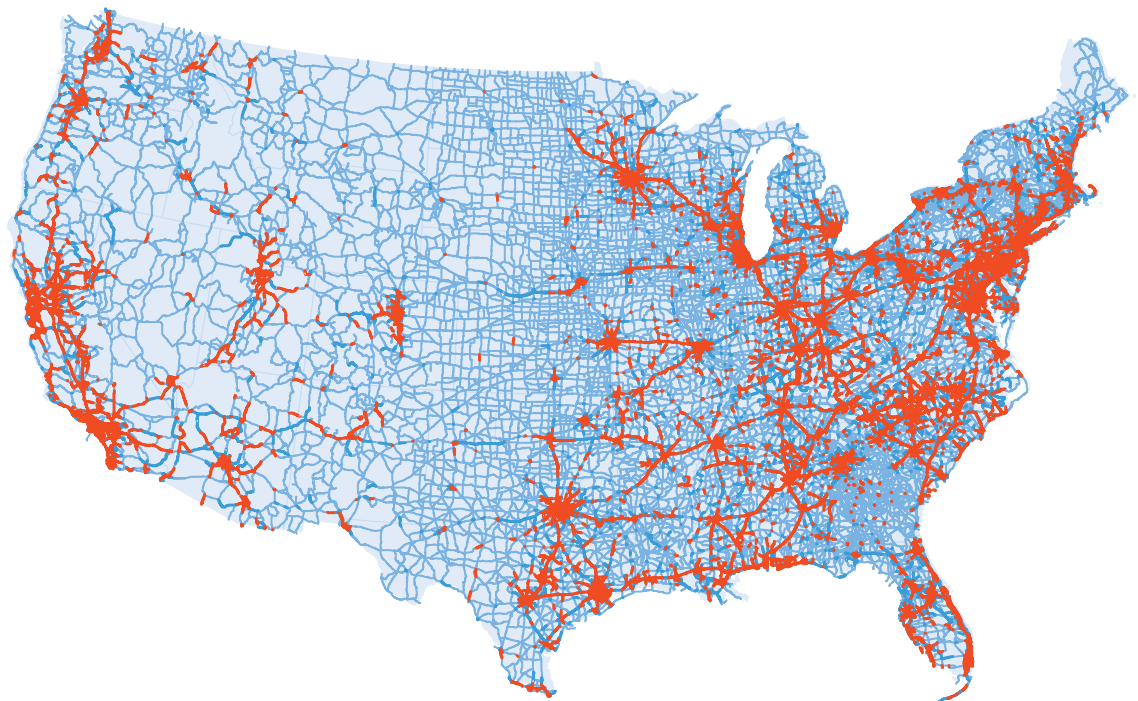
Until 2012, each time Congress passed a multi-year transportation funding bill, it was further padded with earmarks for individual pet projects—SAFETEA-LU contained a record 6,000 earmarks at a cost of \$24 billion. Although they amounted to only 8% of SAFETEA-LU funds, earmarks may have diverted funds from strategic investments to less nationally significant projects.

Only half of the total funding from those earmarks was directed to the 100 largest metropolitan areas, where the overwhelming majority of our GDP is generated.⁷

Increased pork-barrel spending also breeds cynicism, undermining public trust in Washington's use of taxpayer dollars. Billions and billions of earmarked dollars—almost 1 in 3 dollars earmarked for highway projects since 1991—remain unspent, because Congress directed funds to projects that later got shelved, were mired in red tape, or didn't even need the earmarked funds.⁸ Congress recouped \$630 million in unspent earmarks in the 2011 budget, an important step in recovering, and hopefully redirecting to more productive purposes, taxpayer dollars. And in a positive turn, MAP-21 broke precedent with previous funding bills and contained no earmarks.

FUTURE STRAINS ON OUR NATIONAL FREIGHT SYSTEM

Our major highway and freight rail corridors are already operating over capacity, and the strains on the system are projected to worsen as the population grows and trade increases. As seen on the map, by 2035, congestion will predominate in crucial points in our national network. To alleviate this growing crisis, a national transportation plan should target the chokepoints in our most economically vital corridors.



Source: Brookings Institution, 2008

→ The Consequences of Failure

The lack of vision, lack of funding, and lack of accountability have left every mode of transportation in the United States—highways and railroads, airports and seaports—stuck in the last century and ill-equipped for the demands of a fast-paced global economy. Only 30 of the largest 100 metropolitan areas have light rail or subway systems.⁹ Only half of Americans have access to public transit.¹⁰ With few mobility options around cities and metropolitan regions, the costs of traffic seem unavoidable.

All this driving is costing Americans a fortune in time and money. American households now spend an average of 17.6% of their budgets on transportation, the second largest expense after housing and one-third more than what they spend on food. These costs are particularly acute for lower-income Americans: the country's poorest households spend more than 40% of their take-home pay on transportation.¹¹

As gas prices continue to rise as they have in recent months, the costs of driving are more acutely squeezing Americans' checkbooks.

Our continued dependence on imported fuel is one of the leading culprits of our trade imbalance: More than half of the U.S. trade deficit can be attributed to petroleum imports.¹² In 2010, Americans wasted 4.8 billion hours sitting in traffic, at a cost of \$101 billion and 1.9 billion wasted gallons of fuel.¹³ Thus, our heavy reliance on cars—and the oil they run on—has grave implications for our national security.

At the same time, the U.S. railroad network has been neglected and underfinanced for decades. Once the premier system in the world, U.S. rail infrastructure now ranks 18th in the World Economic Forum's Global Competitiveness Report. The number of miles of rail track available for passenger and freight has dwindled over the past 60 years. The rail network is riddled with congested choke points and outdated grade crossings and bridges that require slow speeds for safety. As a result, passenger

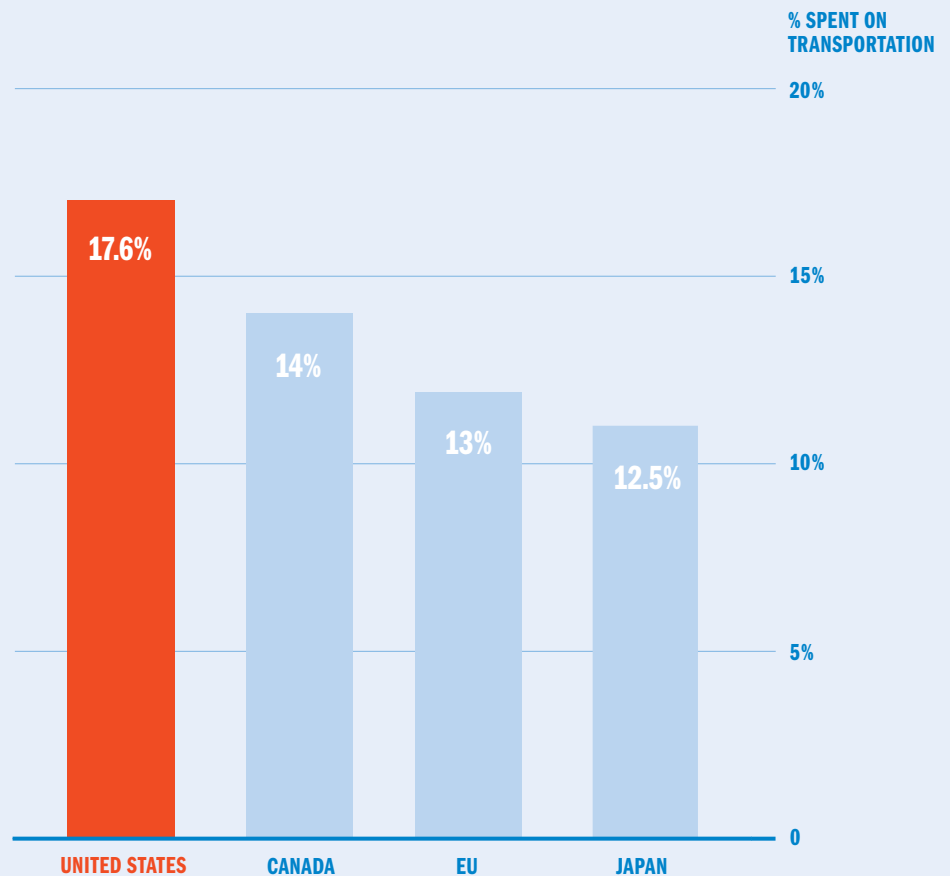
In 2010, Americans wasted 4.8 billion hours and 1.9 billion gallons of fuel sitting in traffic, at a cost of \$101 billion.

STRAINS ON OUR FAMILIES

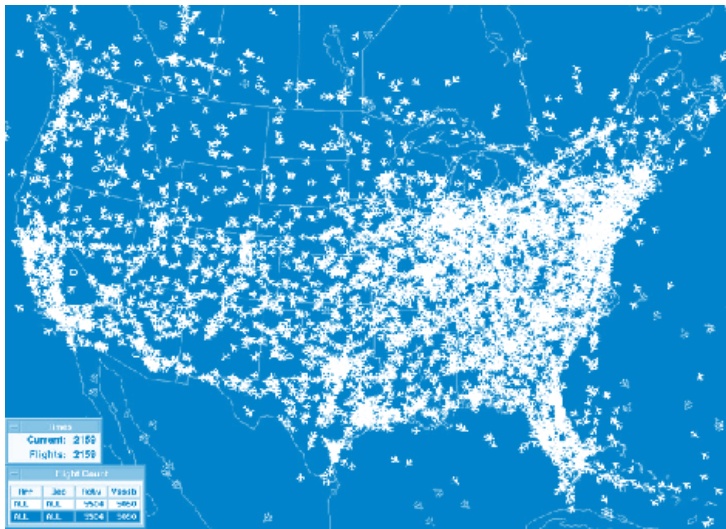
Transportation needs are now the second largest expense for Americans after housing and one-third more than what they spend on food. Lower income Americans spend more than 40% of their take-home pay on transportation.

17.6% OF AMERICAN HOUSEHOLD BUDGETS SPENT ON TRANSPORTATION

40% OF LOWER INCOME HOUSEHOLD BUDGETS SPENT ON TRANSPORTATION



Source: American Public Transportation Association, 2009



U.S. AIRSPACE

There are around 7,000 aircraft in the air over the U.S. at any given time.

Source: FAA

Air traffic control is managed by the same ground-based, radar system developed in the 1950s, even though cutting-edge data-driven and satellite-based systems are being implemented in other parts of the world. Thirty-seven percent of delays can be attributed to this outdated technology; in the three New York City airports, nearly two-thirds of delays are caused by the air traffic control system, creating a ripple effect of delays around the country.¹⁶

Air passengers are also subjected to more hassle and delay because the airports themselves are not equipped to handle our security needs. American airport terminals were designed for a pre-9/11 era, when travelers could get to an airport 30 minutes before their flights.¹⁷ Now travelers must get to the airport an hour or two in advance of a flight and, after bearing the difficulties of the security checkpoint, spend a good amount of time in an airport terminal that wasn't designed to hold and entertain so many passengers for so long.

The combination of unreliable flight times and unpleasant travel experiences is making air travel less attractive and less efficient, to the detriment of the economy on the whole. The U.S. Travel Association found that 41 million avoided airplane trips cost more than \$26 billion in lost airline, hotel, and restaurant revenue, and \$4 billion in lost tax revenue.

Our failure to improve the channels of transportation and ease the mobility of freight along the national cargo chain is imposing incalculable costs on our businesses, our workers, and our future.

A study by the U.S. Chamber of Commerce recently found that our transportation system is underperforming to a degree that we are effectively leaving \$1 trillion of GDP on the table. According to Janet Kavinsky, Director of Transportation Infrastructure at the Chamber, "If we pursue business as usual, we will suffer nearly \$336 billion in lost economic growth by 2015."¹⁸

*According to the FAA, the U.S. aviation system will reach **total gridlock by 2015** if we do not act to cope with projected increases in travel.*

trains in the U.S. run at slower speeds today than they did in the mid-20th century.¹⁴

America's fastest train, the Acela Express running between Boston and Washington, D.C., reaches a top speed of 150 mph, the conventional definition of true high-speed rail, for short periods—but most of the time, the Acela averages 70 or 80 mph. President Obama tried to jump-start American high-speed rail investment in 2009 by marshaling \$10 billion in stimulus and annual appropriations funds for high-speed rail development around the country. As a matter of principle, this signaled his commitment to high-speed rail and his vision of building a national high-speed rail network from coast to coast. But \$10 billion does not compare to the investments being made around the world to build high-speed rail—Spain is spending twice that amount to expand what is now Europe's biggest high-speed network, and China is spending nearly \$300 billion to rapidly erect more miles of high-speed rail than the rest of the world combined.

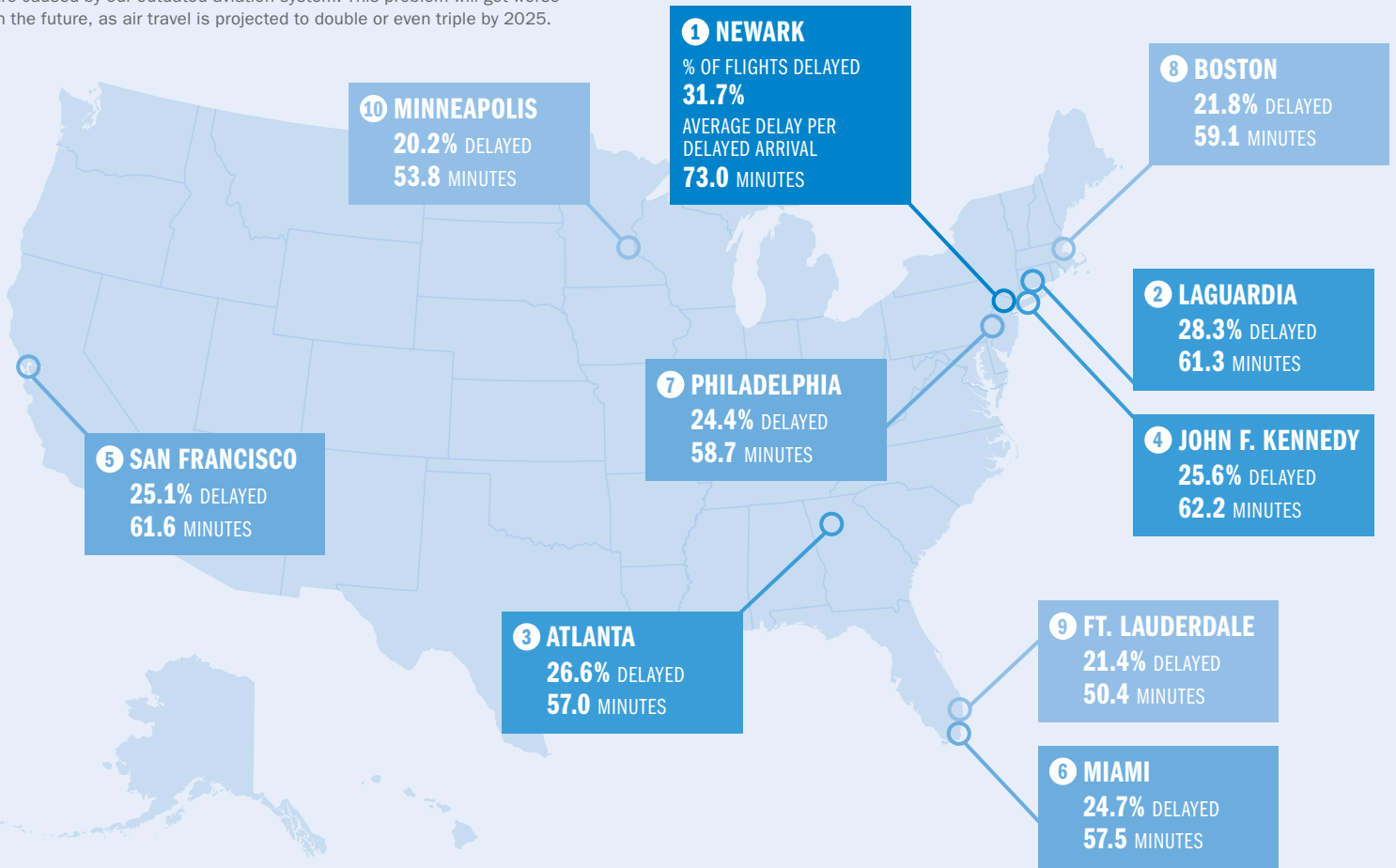
Our outdated aviation system doesn't serve 21st-century travelers well for longer distance travel between cities either. The World Economic Forum ranks U.S. air transport infrastructure 30th in the world, behind countries like Panama and Malaysia. Inefficiencies in the antiquated air traffic control system make it a leading cause of air traffic congestion in U.S. airspace. The United States has the world's worst air traffic congestion—a quarter of flights in the U.S. arrive more than 15 minutes late, and the national average for all delayed flights in the U.S. (about 56 minutes) is twice that of Europe's average.¹⁵

*U.S. air traffic control is managed by the same **ground-based, radar system** developed in the **1950s**.*

TOP 10 CONGESTED U.S. AIRPORTS

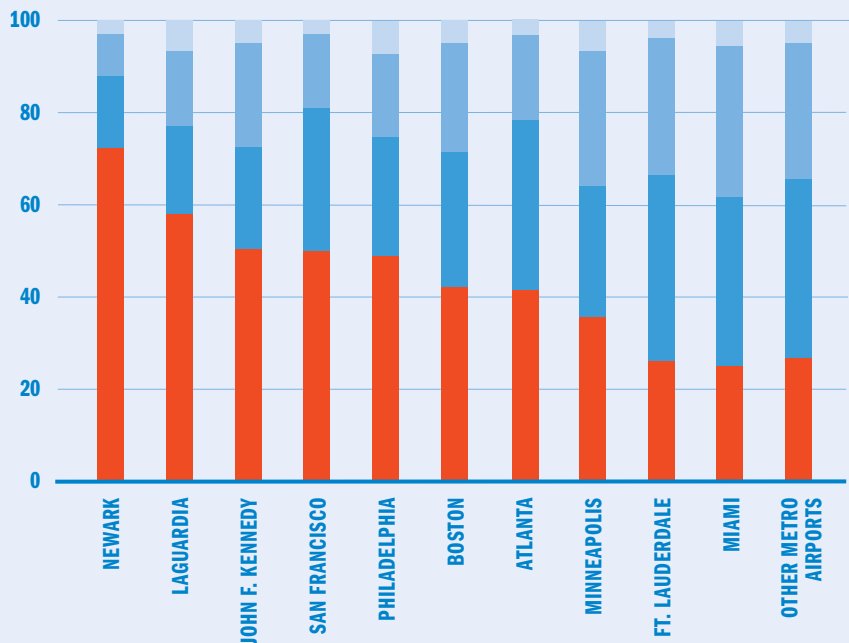
Source: U.S. Government Accountability Office, 2010

U.S. air traffic congestion has steadily increased over the last decade, with record levels of delays at our busiest airports. The U.S. now has the world's worst air traffic congestion: more than 1 in 5 flights departing our busiest airports are delayed, and 48% of delays in our 5 largest metropolitan areas are caused by our outdated aviation system. This problem will get worse in the future, as air travel is projected to double or even triple by 2025.



CAUSE OF DELAYS AT MOST CONGESTED U.S. AIRPORTS

% OF TOTAL DELAY



Source: U.S. Government Accountability Office, 2010

- EXTREME WEATHER
- AIRLINE DELAY
- LATE-ARRIVING AIRCRAFT
- NATIONAL AVIATION SYSTEM



3 ←

Losing Ground to our Global Competitors

The United States used to be the undisputed world leader in transportation innovation.

In 1918, U.S. troops built a rail yard in La Rochelle, France, to build trains for troop transports during World War I. Today, the train factory is still in operation, used by the French company Alstom Transport to manufacture high-speed trains that can speed along at 225 mph—faster than any rail line in the U.S. is equipped to handle. La Rochelle is just one spot on the map showing how the United States has abandoned its role as world leader in state-of-the-art transportation infrastructure—and how we have let the quality and productivity of our own transportation system fall way behind our global competitors’.

Even as the global recession has forced cutbacks in government spending, other countries are investing significantly more than the U.S. to expand and update their transportation networks.

While Americans are wasting time, money, and fuel stuck in traffic, nations around the world are investing in cutting-edge infrastructure to make their transportation networks more efficient, more sustainable, and more competitive than ours. Even since the global recession forced cutbacks in government spending, other countries are investing significantly more than the U.S. to expand and update their transportation networks.

→ **They Adopt Strategic Visions**

Many countries are investing according to national infrastructure plans designed to strategically improve their economically critical gateways and corridors. They are focusing on strategic points in their transportation networks to yield the greatest benefits on their investments. And, unlike the United States, they are channeling investments toward high-speed rail, public transit, and other cutting-edge innovations to improve intermodal mobility for passengers and freight—and giving the United States, long the world’s economic superpower, a run for its money as a result.

A comparative look at transportation planning around the world shows how a clear national vision supported by a commitment of federal dollars unleashes private capital to finance public works projects of national significance. Other countries have released ambitious national infrastructure plans to build the high-tech transportation networks fit for a 21st-century economy.

These blueprints articulate innovative visions of what a 21st-century intermodal transportation network should look like to improve a country’s economic competitiveness, targeting existing bottlenecks and establishing performance requirements to ensure that government expenditures meet system-wide goals. For example:

Australia

In 2008, Australia established Infrastructure Australia, a commission tasked with designing a blueprint for national infrastructure priorities (transportation as well as water, energy, and communications), with a particular focus on multi-jurisdictional projects. Infrastructure Australia also

commissioned the nation’s first National Freight Plan and Ports Strategy to engage in long-term planning for increased international container traffic.

Canada

Building Canada was launched in 2007 with a master plan establishing a focus on infrastructure projects that will support economic growth, environmental sustainability, or community prosperity. The plan contains a new emphasis on strategic gateways and corridors, reflecting a government awareness that the key to economic success in the 21st century depends on the ability to move imports and exports cheaply, easily, and reliably to and from major ports and land crossings, especially given Canada’s special trade relationship with the U.S.

European Union

The EU established the Trans-European Transport Network (TEN-T) program to oversee and fund large-scale transportation projects in EU member states between 2000 and 2013. The goal of the TEN-T program is to help build a single network throughout the EU that will serve the EU’s overarching goal of bolstering European competitiveness, creating jobs, and fostering cohesion around the continent. More than half of the TEN-T funding so far has been dedicated to rail projects, in particular international high-speed rail and freight rail projects. Another significant portion of the TEN-T funding has been directed to high-tech innovations like satellite-based air traffic control management and rail communication enhancements. These investments are working toward the creation of a seamless, cutting-edge transportation system around Europe, easing mobility around what is the largest market in the world.

These initiatives are game-changing programs to tackle the new economic challenges of the 21st century. On the whole, they emphasize high-tech, low-carbon, and intermodal solutions for the most economically critical points in their transportation networks. They reflect an assessment of an entire transportation network and recognize the economic necessity of eliminating critical bottlenecks at junctures of national significance.

FALLING BEHIND IN OUR FINANCIAL COMMITMENTS

% of GDP Spent on Capital Investment in Transportation Infrastructure

2.40%	AUSTRALIA
1.66%	SWEDEN
1.53%	FRANCE
1.48%	POLAND
1.29%	SPAIN
1.15%	UNITED KINGDOM
1.03%	BELGIUM
0.80%	GERMANY
0.60%	UNITED STATES

Source: OECD; Eurostat; Transport Canada

→ **They Invest at Scale**

After adopting strategic visions, our international economic competitors then invest at scale, meaning their financial commitments dwarf that of the United States.

In the last five years, all of our major global competitors have launched ambitious, forward-looking initiatives to strategically fund their intermodal transportation networks. Emerging economic powerhouses like China and Brazil are building state-of-the-art transportation networks practically from scratch, leapfrogging us from behind to invest in the most cutting-edge transportation innovations. Meanwhile, other countries saddled with aging infrastructure like ours—Canada, Australia, and the EU—are adjusting to the 21st-century global economy by investing more significantly and more strategically in transportation projects of national significance.

No matter the stage of their development, our economic competitors are devoting unprecedented amounts of resources to infrastructure development. As a result they are spending larger percentages of their GDP on transportation. For example, Canada spends 4% of its GDP, and China spends 9%.

The size and scale of these infrastructure investments are generating a lot of economic activity in countries around the world:

European Union

As of 2009, the European Union had invested €400 billion (\$578.2 billion) in projects developing the Trans-European Transport Network (TEN-T), a single, multi-modal network that will integrate land, water, and air transport networks through the EU.

Canada

In 2007, Canada announced a 7-year, \$33.7 billion infrastructure plan. Building Canada, as the program is known, is the largest federal government commitment to infrastructure development in 50 years. To stimulate the economy in 2009, Canada appropriated another \$4.1 billion to infrastructure development¹—which puts the Canadian federal government investment alone, not counting contributions from provincial and municipal governments, at about 2.9% of GDP.²

Australia

In the past two years, the Australian government has made a massive investment in transportation infrastructure, allocating AUS \$37 billion (US \$36.8 billion) to infrastructure deemed of vital economic importance. The national government has doubled its investment in roads and quadrupled its investment in rail.³

China

As China experiences staggering economic growth, it has invested enormous sums in major infrastructure projects. Since 2000, China has invested 22 trillion Yuan (\$3.3 trillion) in infrastructure projects. In July 2010, the government announced a further investment of 682 billion Yuan (\$105.2 billion) in 23 major new infrastructure projects.⁴

Brazil

Through a combination of public and private funds, Brazil invested over \$240 billion in its infrastructure between 2007 and 2010, with another \$340 billion planned for the following three years.⁵

India

The Indian government is investing \$500 billion in infrastructure projects by 2012—and aims to spend another \$1 trillion by 2018.⁶

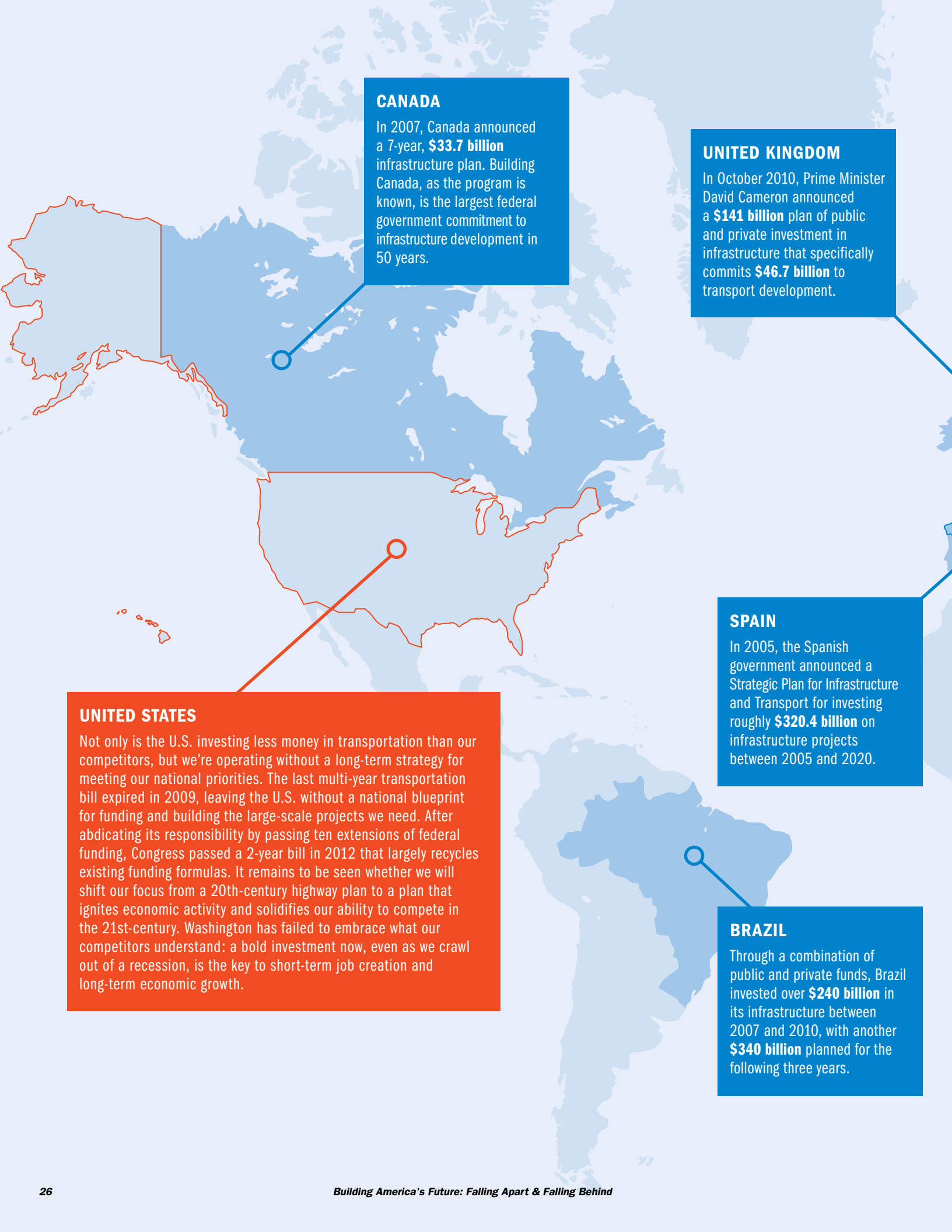
France

In August 2010, France announced a new national transportation infrastructure plan, budgeting €170 billion (\$219.9 billion) for transport development over the next 20–30 years. Ninety-five percent of the requested funds would be allocated toward transportation modes other than roads and air, and more than half of the 170 billion would be specifically designated for intercity passenger and freight rail.⁷

Germany

In 2011, Germany adopted a five-year, €41.5 billion (\$52 billion) federal Framework Investment Plan for transportation infrastructure. In 2012, the German government also adopted a Program to Accelerate Infrastructure Projects, making an additional billion euros available for investment in roads, railways, and waterways.⁸

*Canada spends
4% of its GDP on
transportation investment
and maintenance, and
China spends 9%.
The U.S. spends only 1.7%.*



CANADA

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UNITED KINGDOM

In October 2010, Prime Minister David Cameron announced a **\$141 billion** plan of public and private investment in infrastructure that specifically commits **\$46.7 billion** to transport development.

SPAIN

In 2005, the Spanish government announced a Strategic Plan for Infrastructure and Transport for investing roughly **\$320.4 billion** on infrastructure projects between 2005 and 2020.

BRAZIL

Through a combination of public and private funds, Brazil invested over **\$240 billion** in its infrastructure between 2007 and 2010, with another **\$340 billion** planned for the following three years.

UNITED STATES

Not only is the U.S. investing less money in transportation than our competitors, but we're operating without a long-term strategy for meeting our national priorities. The last multi-year transportation bill expired in 2009, leaving the U.S. without a national blueprint for funding and building the large-scale projects we need. After abdicating its responsibility by passing ten extensions of federal funding, Congress passed a 2-year bill in 2012 that largely recycles existing funding formulas. It remains to be seen whether we will shift our focus from a 20th-century highway plan to a plan that ignites economic activity and solidifies our ability to compete in the 21st-century. Washington has failed to embrace what our competitors understand: a bold investment now, even as we crawl out of a recession, is the key to short-term job creation and long-term economic growth.

GERMANY

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FRANCE

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INDIA

The Indian government is investing **\$500 billion** in infrastructure projects by 2012—and aims to spend another **\$1 trillion** by 2018.

The World's Leading Economies are Giving the U.S. a Run for its Money

Around the world, our primary economic competitors are making ambitious forward-looking plans and major commitments of funding to improve their transportation networks. Emerging economic powerhouses like China and Brazil are building state-of-the-art transportation networks practically from scratch, leapfrogging us from behind. And countries saddled with aging infrastructure like ours—Canada, Australia, and the EU—are adjusting to the 21st-century global economy by investing historic amounts in strategic projects of national significance. Meanwhile, the United States trails in percentage of GDP spent on transportation infrastructure—1.7% compared to Canada's 4% and China's 9%—and risks falling further and further behind as a result.

CHINA

Since 2000, China has invested **\$3.3 trillion** in infrastructure projects. In July 2010, the government announced a further investment of **\$105.2 billion** in 23 major new infrastructure projects.

AUSTRALIA

Australia has allocated **\$36.8 billion** to infrastructure deemed of vital economic importance—and its federal government has doubled its investment in roads and quadrupled its investment in rail.

*Over \$180 billion
in private equity and
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focused on infrastructure
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around the world,
waiting for worthy
public works projects
to get off the ground.*

Spain

In 2005, the Spanish government announced a Strategic Plan for Infrastructure and Transport for investing roughly €247.7 billion (\$320.4 billion) on infrastructure projects between 2005 and 2020. Forty-four percent of the funds (€109 billion, or \$140.99 billion) is dedicated to railways.⁹

United Kingdom

In October 2010, Prime Minister David Cameron announced the UK's first National Infrastructure Plan, a £200 billion (\$141 billion) plan of public and private investment in infrastructure that specifically commits £30 billion (\$46.7 billion, or roughly 2% of UK GDP) to transport development over the next four years.¹⁰

Governments across the political spectrum are funding big, forward-looking initiatives to advance their nations' infrastructures. They know that smart infrastructure investments will pay dividends with job creation in the short term and economic growth in the long term.

Washington has not stepped up to pass a new authorization bill—and may not do so until after the 2012 election. And it remains to be seen whether we will shift our focus from a 20th-century highway plan to a plan that ignites economic activity and solidifies our ability to compete throughout the 21st century.

→ They Pioneer New Financing Mechanisms

Following the global financial crisis, how can other national governments afford to launch these large-scale investments? In some cases, it is simply a matter of national priority: the UK, for example, has renewed a government commitment to infrastructure investment while significantly reducing government spending in other areas. But in all cases, other countries are able to muster the resources they need for public works by experimenting with newer financing mechanisms than we tend to here. They're using a combination of approaches, from leveraging federal dollars to harness private capital to accurately pricing gasoline and the use of highways.

Leveraging Federal Dollars to Harness Private Capital

In a time of budget cuts and belt-tightening, other countries are relying on innovative financing mechanisms that leverage private dollars to meet their investment needs. These financing mechanisms have also introduced performance standards and accountability requirements into the planning process.

Private sector investors are ready and able to invest in infrastructure. Over \$180 billion in private equity and pension fund capital focused on infrastructure equity investments is available around the world, waiting for worthy public works projects to get off the ground.¹¹ Elsewhere, infrastructure projects generate dependable, low-risk revenue for private investors through tolls and ticket fees. But the U.S. has not fostered an environment in which the private sector will step in to help finance the large-scale infrastructure projects we need.

The U.S. is now one of the only leading nations without either a national plan for public-private partnerships (PPPs or P3s) for infrastructure projects or a national infrastructure bank to finance large-scale projects and harness private capital. Many states have passed laws allowing local public-private partnerships, but the U.S. does not have a national policy that would facilitate them for large-scale, multi-jurisdictional projects. While we fail to leverage government dollars to attract private investors, billions of dollars of private capital are flowing to infrastructure projects in other countries.

Public-private partnerships in other countries cover a range of agreements between government entities and private companies or investors who share in the risk and rewards of public works projects. Although these partnerships are not a panacea, they are imperative to raising necessary funds in these budget-strapped times. We can learn from other countries how to attract private capital to bolster government investments and ensure that private investments further national goals.

The U.S. federal gas tax has remained unchanged for nearly 20 years, and it is a fraction of the gas taxes collected elsewhere.

Building Canada created Canada's first public-private partnership corporation to expand infrastructure financing alternatives. PPP Canada was launched with a \$1.28 billion P3 Canada Fund, a merit-based program that in 2009 granted \$102.3 million to fund public-private infrastructure projects around the country.¹²

Australia streamlined its public-private partnership priorities and goals with its Infrastructure Australia agenda by issuing National P3 Policy Guidelines.¹³

The UK's new National Infrastructure Plan includes a concerted government effort to seek out P3 opportunities to finance its ambitious transportation projects.¹⁴

Even China has moved away from primarily funding infrastructure projects directly through the national government, instead toward utilizing a mix of financing mechanisms, including significant foreign direct investment.

Most of our other global competitors also have access to Infrastructure Banks that finance large-scale transportation projects and leverage private capital. The most established and successful of these is the European Investment Bank (EIB), which since 1957 has served as the infrastructure financing institution for the EU.

The EIB provides long-term financing for infrastructure investment projects, and it funds its operations by accessing capital markets. The EIB finances infrastructure projects on a case-by-case basis, reviewing their merit in a financially disciplined manner and financing only those with compelling national benefits.

It is because of the EIB that European countries have been able to build high-speed rail and modernize their ports and motorways. In 2011, the EIB lent €33.7 billion (\$42.1 billion) to infrastructure projects, about €15.6 billion (\$19.5 billion) of which went to transport projects, both to the EU and members and to partner countries in the developing world.¹⁵

Development banks around the world take similar approaches to financing infrastructure projects and harnessing the potential of additional private capital. The Brazilian

National Development Bank (BNDES), for example, drives the financing opportunities for Brazil's recent infrastructure development. Between October 2009 and October 2010, BNDES provided \$31.8 billion in financing to infrastructure projects.

A National Infrastructure Bank in the United States would allow us to tap into the billions of private-sector dollars that could be invested in our transportation needs. By employing a range of finance and funding tools—including, but not limited to, grants, credit assistance, low interest loans, and tax incentives—the bank could leverage federal investments with private capital. And if we establish the bank as an independent entity that can fund only merit-based projects of regional and national significance, the bank could make smarter, more cost-efficient investments in all forms of our infrastructure.

Accurately Pricing Gasoline and the Use of Highways

Americans are struggling with increasingly high gas prices. But we also tend to misunderstand the current tax rates and the actual costs of the gas we use. According to a poll conducted by Building America's Future, most Americans mistakenly believe that the gas tax goes up every year. In fact, the U.S. federal gas tax has remained unchanged for nearly 20 years—and it is a fraction of the gas taxes collected elsewhere. Even accounting for state taxes, Americans pay an average of 39 cents a gallon in gas taxes, far less than in other leading economies. The retail price of unleaded premium gasoline is two to three times higher in Europe, Australia, Japan, and Korea than in the United States, and gas taxes in some countries are nearly 10 times as high as the average American gas tax.¹⁶

Other countries have imposed higher taxes on oil both to cover the costs of highway wear and tear imposed by vehicles as well as to cover some of the environmental costs. In the U.S., gas taxes cover only half the costs of maintaining and operating our roads, while gas tax receipts in industrialized European nations more than cover the costs of their highways.¹⁷

As high as gas prices in the U.S. seem today, they do not even fully account for the true cost of driving in terms of pollution and greenhouse gas emissions. In the interest of our own environmental sustainability and national security, we should consider the ways in which other countries' taxes discourage overreliance on gasoline.

Other countries have also enacted more innovative policies for pricing the use of roads, which reduce congestion, encourage alternative modes of transportation, and provide new funding streams for financing infrastructure investments that strengthen the economy. Cities such as Singapore, London, Stockholm, and Milan have established congestion pricing programs, charging variable tolls to drivers entering the center of the cities at different times of day. Congestion pricing programs have proven effective in discouraging some people from driving, thereby reducing congestion and raising new revenue to invest in public transit and other livability improvements.

Countries such as Germany, Switzerland, and Austria have implemented truck tolling programs that force trucks to pay user fees for the heavier wear and tear they impose on highways. Truck tolls have had proven impacts on transport efficiency: They have reduced traffic on tolled highways, lowered rates of truck emissions, and encouraged shippers to avoid dispatching half-empty trucks. And state-of-the-art technology has increased the efficiency of these pricing programs. For example, GPS trackers measure the miles driven by a truck on Swiss highways; drivers in London can send a text message to automatically pay a congestion charge as they drive into the city center.¹⁸

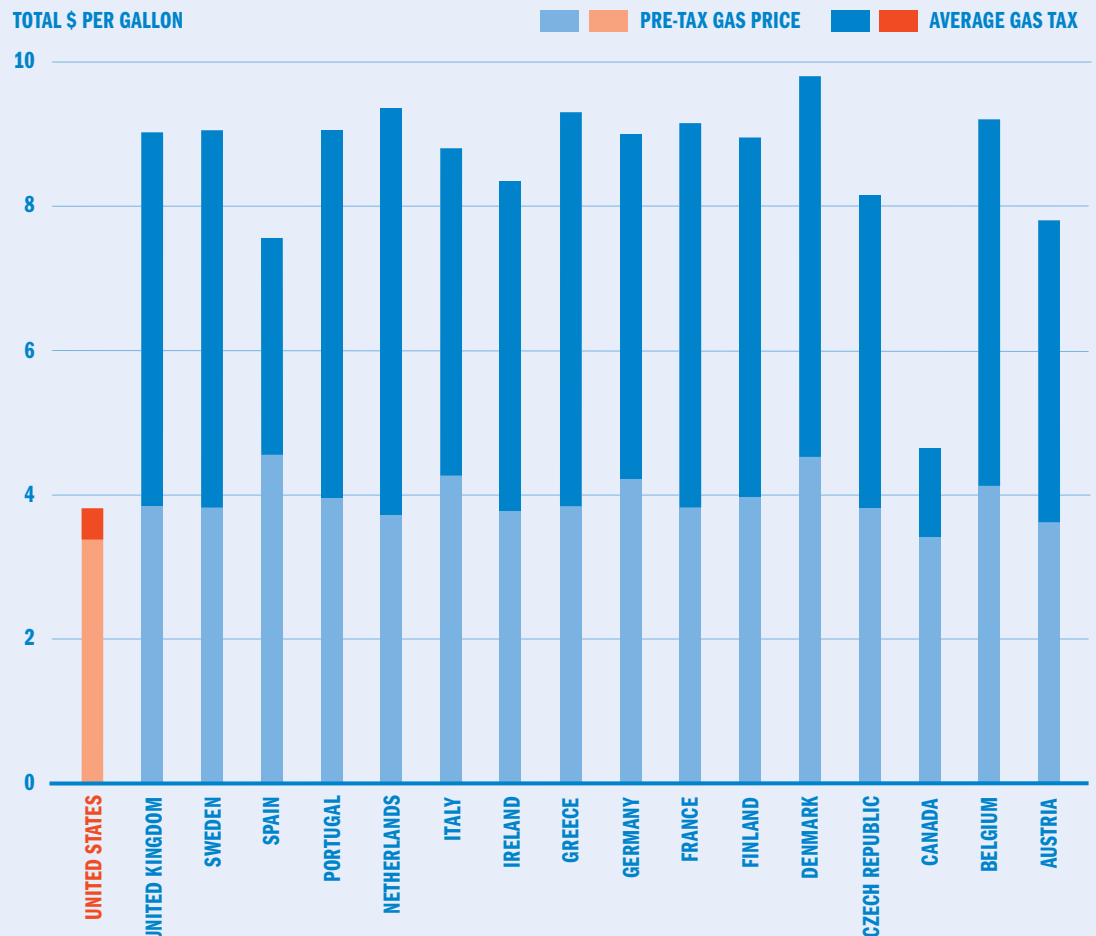
Taken together, international gas taxes and highway user fees are reducing congestion, reducing carbon emissions, improving travel speed times, encouraging increased ridership on public transit, and raising more revenue for transportation infrastructure around the world.

HOW "HIGH" ARE OUR GAS PRICES?

JANUARY 2011

Other countries have imposed higher taxes on gas both to cover the costs of highway wear and tear imposed by vehicles as well as to cover some of the environmental costs. In contrast, the U.S., gas taxes cover only half the costs of maintaining and operating our roads.

* U.S. tax amount refers to federal and average state tax.



Source: *The Economist*, *The Atlantic*, 2011

FALLING BEHIND IN PORT CAPACITY

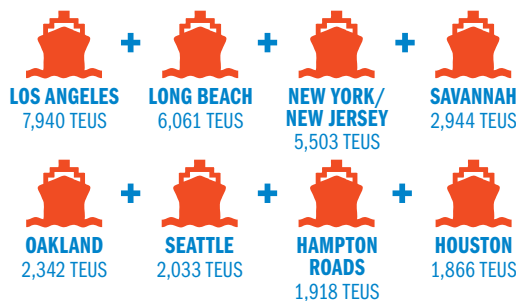
After years of substantial investment in ports, China now boasts 6 of the world's top 10 busiest ports—and 0 of the top 10 are located in the U.S. The Shanghai port now moves more container traffic a year than the top 8 U.S. ports combined.

* A TEU is a Twenty-Foot Equivalent Unit, a volume measurement equal to the dimensions of a 20-foot shipping container.



SHANGHAI 31,700 TEUS

2011 PORT VOLUME PER 1000 TEUS*



TOP 8 U.S. PORTS 30,607 TEUS

Source: American Association of Port Authorities

The World Economic Forum now ranks the U.S. 19th in the world in terms of the quality of our port infrastructure.

→ They Are Getting Results

To paraphrase New York Times columnist Tom Friedman, traveling from New York to Shanghai today is like moving from the Flintstones to the Jetsons.¹⁹ It is China, not the U.S., that has the most bullet trains in the world. It is China that boasts the world's largest ports—and it is the Shanghai port that moves more containers than the top eight U.S. container ports combined. It is Switzerland that is building the world's longest freight rail tunnel. It is Canada that is capturing a larger portion of Pacific trade to and from China. It is cities like Hong Kong and London, not New York or San Francisco, where you can check your luggage for a flight at the train station downtown before taking a quick train ride to the airport. When put in this global context, the U.S.'s transportation system looks that much more antiquated.

Falling Behind In Freight

China is investing in intermodal freight transport at home and around the world at a ferocious rate. To accommodate China's export boom, a massive investment has been made in expanding and modernizing its shipping terminals. Chinese port productivity is now the best in the world, and China is now home to 6 of the world's 10 busiest container ports—while the U.S. is home to zero.²⁰ As part of a national plan to more than triple the number of shipping containers moved by rail, 18 new intermodal yards are planned or under construction.²¹ And China is building infrastructure around the world to help move Chinese goods and materials to markets far and wide. In September 2010, China Ministry of Railways signed a \$2 billion contract to build a 362-mile rail from Tehran to the Iraqi border. In the long run, the link will connect to ports on the Mediterranean Sea, offering China a new overland route for moving goods to Europe.²²

Canada recently opened North America's first port designed specifically for intermodal rail shipments. Just 540 miles north of Vancouver, the new Prince Rupert facility is strategically located to receive shipments from inland hubs like Toronto, Chicago, and Memphis—and to capture some of the traffic at the congested ports on the U.S. Pacific coast. While California port traffic remained flat in 2007, cargo passing through Prince Rupert increased 37%.²³

In **Brazil**, a new \$2.7 billion intermodal superport is being built in Acu to accommodate the increased trade with China. Built 1.8 miles off the coast, the Acu Superport will be larger than the island of Manhattan and is designed with state of the art highway, pipeline, and conveyor belt capacity to ease transfer of raw materials onto ships heading to China.²⁴

Korea, Singapore, and Hong Kong have all dramatically expanded their port capacities and sophistication.

Australia has built entirely new intermodal freight facilities to move raw materials overland by rail to China-bound ships at its eastern ports.

As these countries make strategic investments, the World Economic Forum now ranks the U.S. 19th in the world in terms of the quality of our port infrastructure.

We also risk falling behind in our freight rail quality and capacity. Historically, our relatively extensive freight rail system gave us a competitive edge over other countries. But U.S. freight rail tonnage is expected to rise 88% through 2035.²⁵ New investments will be necessary to cope with this increased volume, and the private sector might not be able to coordinate and finance those investments on its own. For decades, U.S. freight railroads have invested large amounts of private capital in maintaining

THE POTENTIAL OF HIGH-SPEED RAIL IN THE U.S.

Source: Amtrak, China Ministry of Railways, 2011

If the U.S. were to have true high-speed rail, a trip from New York to Chicago would take less than 5 hours—but now takes 17 hours.



711 MILES/42 MPH/17 HOURS

NEW YORK - CHICAGO

17:00



819 MILES/168 MPH/5 HOURS

BEIJING - SHANGHAI

05:00

**More than 15,000 miles
of high-speed rail
is in operation or under
construction around
the world—
while U.S. passenger trains
run at slower speeds
than they did
half a century ago.**

and expanding their own infrastructure.²⁶ But a projected \$148 billion is needed by 2035 to expand capacity, and railroads are poised to generate only around \$96 billion themselves.²⁷

Meanwhile, only 1% of federal transportation dollars are targeted toward strategic economic chokepoints in our transport network, those highway or freight rail bottlenecks caused by congestion or decrepitude which we know interfere with economic activity. Businesses' steady investment in their own freight rail and port improvements cannot achieve the scale or impact that could be possible if aided by a national investment strategy to boost trade capacity and transportation efficiency. Government leadership could harness private capital to make targeted investments in our most economically critical trade gateways and corridors.

Falling Behind in High-Speed Rail

More than 15,000 miles of high-speed rail is in operation or under construction around the world—essentially none of which is in the United States. The stunning size and scope of other countries' investments in cutting-edge rail networks dwarfs the Obama Administration's preliminary plans:

China has invested a staggering \$300 billion in its intercity rail network featuring the fastest trains in the world. At this rate, China will soon have more high-speed rail track than the rest of the world combined,²⁸ and its goal is to have 11,185 miles of high-speed rail track laid by 2020—enough to go almost halfway around the world.²⁹ Recently completed are the \$4.4 billion, 220-mph train between Shanghai and Hangzhou, which makes the 200-mile trips in 45 minutes, and the \$32.5 billion line from Beijing to Shanghai. Opened a year ahead of schedule, the Beijing-Shanghai line covers 820 miles in 5 hours—farther than

the train ride between New York and Chicago, which takes 17 hours.³⁰

Japan, home of the world's oldest bullet train, which opened in 1964, is still innovating and updating its world-class rail system; four new lines are currently under construction. In 2009, Japan announced plans to build a 5.1 trillion yen (\$61.4 billion) Maglev train between Tokyo and Nagoya. At 300 mph, the train would cover the distance between Boston and New York in under an hour.³¹

Korea opened its first high-speed rail line in 2004 and is now building a new 218-mph line connecting Seoul to Gwangju and Mokpo in the southwest, covering the 200-mile trip in about an hour and a half. Construction began in 2009 and is scheduled to be completed in 2013 at the cost of 11.3 trillion won (\$10.1 billion).³²

Spain has been building high-speed rail since 2002 and in 2010 became the world's third-leading nation in high-speed track mileage, behind China and Japan. Spain spends a stunning 1% of its GDP a year on inter-city and urban rail infrastructure. The 2005 Strategic Plan for Infrastructure and Transport allocated €109 billion (44% of the funds) toward rail development, largely dedicated to increasing the high-speed rail network to 6,200 miles by 2020 and putting 90% of the Spanish population within 30 miles of a station.³³

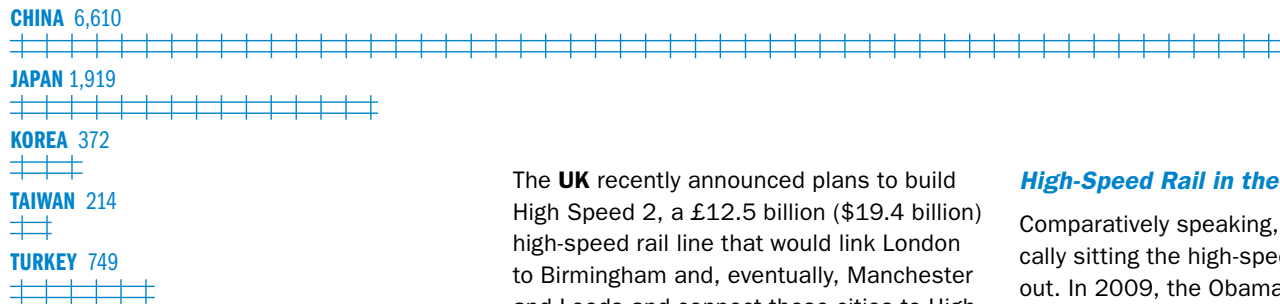
France, which opened its first high-speed rail line in 1981, continues to upgrade its service and expand its network within France and out to neighboring countries. In the last several years, three new lines have opened, running to Amsterdam, Antwerp, and Catalonia, Spain. Two other lines are currently under construction, and another 12 lines will be built in the next several years.

HIGH-SPEED RAIL IN THE WORLD

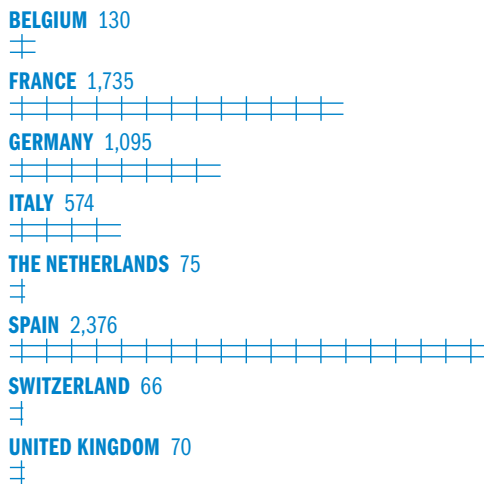
Source: UIC (International Union of Railways), 2010

More than 15,000 miles of true high-speed rail is in operation or under construction around the world, with nearly 10,000 miles in planning stages—none of which is in the U.S. True high-speed rail runs on dedicated track at speeds of at least 155 mph, with top speeds in China now exceeding 200 mph. America's fastest train, the Acela Express running between Boston and Washington, D.C., has a top speed of 150 mph but averages 68 mph.

ASIA 9,864 MILES OF TRACK



EUROPE 6,121 MILES OF TRACK



*IN OPERATION AND CONSTRUCTION

The stunning size and scope of other countries' investment in high-speed rail dwarfs America's preliminary plans.

The **UK** recently announced plans to build High Speed 2, a £12.5 billion (\$19.4 billion) high-speed rail line that would link London to Birmingham and, eventually, Manchester and Leeds and connect these cities to High Speed 1 running from London to the Channel Tunnel to Belgium and France.

Saudi Arabia is currently building a \$1.8 billion, 200-mph high-speed rail line between Medina and Mecca. The Medina station is projected to move 13,200 passengers from 11 trains moving in and out of the station per hour (the equivalent of 26 jumbo jets); the Jeddah station will move more passengers a year than all five terminals of Heathrow airport combined.³⁴

Brazil has begun developing a \$19.7 billion, 223-mph high-speed rail line between Sao Paulo and Rio de Janeiro, expected to be running by 2014. The line, financed entirely by the Brazilian National Development Bank (BNDES) and other private investors without any public funds, will link the international airports in each city and a cargo airport in the city of Campinas.

In June 2010, **Morocco** began constructing the \$2.3 billion, 200-mph Tangier-Casablanca high-speed rail line, the first link in the government's master plan to build nearly 1000 miles of new rail lines by 2035.³⁵

Qatar, for its successful bid to host the 2022 World Cup, announced a \$24 billion transportation infrastructure plan that includes the construction of high-speed rail lines to Bahrain and Saudi Arabia.³⁶

A global consensus has emerged that high-speed rail is the transport of the 21st century: a high-speed, high-capacity, and low-energy solution for the high-tech, low-carbon economy of the future. To stay competitive, countries large and small are investing now to build true high-speed rail.

High-Speed Rail in the U.S.

Comparatively speaking, the U.S. is practically sitting the high-speed rail competition out. In 2009, the Obama Administration announced a vision of a nation-wide high-speed rail network. But \$10 billion in initial funding pales in comparison with our competitors' investments. And spreading that \$10 billion around 36 states runs the risk of achieving nothing at all. As we watch states change course after the 2010 election and decline some of the high-speed rail funds they had been awarded, we must concede that President Obama is not all right on this issue, and the new governors are not all wrong.

Some states are planning trains that will not run at truly high speeds—in which case they won't create genuinely attractive travel options to ease our air and road congestion problems. Some states are planning to improve existing passenger lines, rather than build new dedicated high-speed lines—which means the passenger trains will still have to share the tracks with freight and be accordingly subjected to delays. And some states are planning projects that simply don't make economic sense—or at least should not be considered a top national priority.

High-speed is not an area in which small pet projects can serve as models that will invite larger commitments in the future; instead, smaller projects are less likely to attract ridership and recoup their investments. Throwing smaller amounts of money at slower and smaller high-speed rail projects that are unlikely to succeed is setting ourselves up for failure. For instance, in the long run, a high-speed link connecting Chicago to cities like Minneapolis and Cincinnati could be a boon for businesses in multiple states. One hundred million people live within 500 miles of Chicago, creating a

CASE STUDY: MADRID – BARCELONA

Before Spain opened a high-speed rail link in late 2008, the route from Madrid to Barcelona was the busiest passenger air route in Europe. The actual flight time between the two cities is only 1 hour and 15 minutes, but, between security and traffic, air travel time between two cities can take closer to 3 hours.

HIGH-SPEED RAIL CUT AIR TRAVEL BY ONE-THIRD (1.5 MILLION PASSENGERS) IN ITS FIRST FULL YEAR IN SERVICE.

NOW, MORE PEOPLE TRAVEL BY TRAIN THAN BY AIR BETWEEN THE TWO CITIES.

Source CalPIRG, 2010

MADRID

BARCELONA

02:30 HIGH-SPEED RAIL

01:15 FLIGHT TIME

07:00 CONVENTIONAL RAIL

06:00 CAR

vast pool of travelers within the magic distance at which high-speed rail successfully cuts into short-haul airplane travel.

But it is a risky endeavor to build a short link now between three Ohio cities, at a speed that barely competes with driving the short distance between them, without a grand plan or guaranteed funding for building a true network across the Midwest. A more ambitious and innovative investment in our future would start in Chicago and build out, increasing ridership numbers by capitalizing on Chicago's large, transit-oriented population and diverting traffic from congested Chicago O'Hare. A 220-mph hub-and-spoke network emanating from Chicago might cost \$83.6 billion to build but would produce \$1.3 billion a year in new business sales and 104,000 permanent new jobs.³⁷

The high-speed rail project likely to have the greatest national impact is in the Northeast Corridor between Boston and Washington, D.C. Although it generates the highest GDP in the country, the Northeast Corridor is threatened by crippling congestion: its highways are already at capacity, and its air traffic is so congested that it is home to four of the country's worst airports in terms of on-time arrivals and departures. One-third of aircraft in U.S. airspace move through New York, so delays at New York City's airports in turn hold up planes flying to and

from the rest of the country, causing ripple effects at airport hubs around the nation.

A full third of flights departing from the three New York City airports are flying distances less than 500 miles, the ideal distance to travel high-speed rail. A 500-mile high-speed rail trip that takes less than 3 hours is just as fast—or faster—as a supposedly one-hour flight, between airport security, potential delays, and travel to and from airports outside of urban centers.

Two hundred daily flights leave New York City airports for destinations along the Northeast Corridor. If true high-speed rail lured those passengers onto trains and eliminated the need for 200 short haul flights, New York City's airports and runways would free up for larger planes carrying passengers to farther off places. A bullet train might capture most of the air travel market along the Northeast Corridor, moving the passengers from flights out of Baltimore, Philadelphia, Providence, and Boston to New York City onto trains that dropped them at Penn Station. Building a 25-minute train from New York to Philadelphia would shorten the time of other people's flights between Dallas and Las Vegas or between Miami and Chicago.

The Northeast Corridor is also a natural habitat for passenger train travel because of the relatively small distances between its cities, established transit systems in its

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Trains between Rome and Bologna, Tokyo and Osaka, and Paris and Lyon, have captured between 75 and 95% of the air/rail market.

major hubs, and a population density greater than most of Europe. Amtrak trains in and out of New York City already operate at capacity. At 13 million riders a year, ridership already exceeds the threshold that studies have determined necessary to economically justify an investment in building high-speed rail.³⁸

The route from Los Angeles to San Francisco—currently the second most popular airplane travel route in the nation—also calls out for a high-speed rail line. Between December 2008 and November 2009, 2.8 million passengers flew between LA and San Francisco; in the same period, one out of every four flights from LA to SF was late, with an average delay of one hour, making it one of the most delay-prone routes in the nation.³⁹ As in New York City, there are nearly 200 daily flights between LA area airports and the San Francisco Bay area, containing a ready-made ridership that could ease congestion at the airports.⁴⁰

The experience of other countries provides proof that high-speed rail can turn short-haul air passengers into train travelers. In its first full year of service, the Madrid-Barcelona high-speed rail cut air travel by one-third (1.5 million passengers) in what used to be Europe's busiest passenger air route. By early 2010, the number of train travelers between the two cities exceeded

the number of air travelers. Trains between Rome and Bologna (222 miles in 2 hours 44 minutes), Tokyo and Osaka (320 miles in 2 hours 24 minutes), and Paris and Lyon (267 miles in 85 minutes), for example, have captured between 75 and 95% of the air/rail market. Thanks to the success of the bullet train, planes no longer fly the 227-mile route between Tokyo and Nagoya.

We can also look to other countries for assurance that high-speed rail is a sound investment. Two towns with high-speed rail stations on the Cologne-Frankfurt line in Germany experienced a 2.7% greater increase in overall economic activity as compared to the rest of the region.⁴¹ Office buildings near high-speed rail stations in France and northern Europe generally charge higher rents than in other parts of the same cities, and property values near Shinkansen stations in Japan are 67% higher than property values farther away.⁴² And high-speed rail has been shown to increase tourism in France and England.⁴³

The number of air passengers around the world is projected to more than double to 4.5 billion a year by 2025, which our airports simply cannot handle. If nothing is done, delays at airports around the country will continue to grow worse.



→ 4

***Recommendations
for Reform***

We need a blueprint to help us transition from Eisenhower's highway plan of the 1950s to the high-tech transportation plan of the 21st century.

Our competitors tore a page out of America's success story, applied the lessons to their own systems and challenges, and they're now sprinting ahead of us. Meanwhile, we are trying to operate a 21st-century economy with an infrastructure network that was conceived before globalization, the digital revolution, and population growth transformed the world economy.

This failure to keep pace with the world's innovators in transportation is already costing us money, jobs, profits, and opportunities in the rich and growing export market, and risks putting us further and further behind in the global economy. To avoid that fate, we must invest in cutting-edge transportation infrastructure in ways that will jump-start job creation in the short-term and stimulate the long-term growth that our economy needs to compete in the 21st century.

Infrastructure projects can create jobs the economy needs right now. The Federal Highway Administration estimates that every billion dollars of federal spending creates 27,822 jobs in construction and supporting industries.¹ Federal investment in public transportation generates even more jobs: every billion dollars supports 36,100 jobs.² And an investment in transportation projects will generate even more long-term growth. Infrastructure is a smart investment: every \$1 spent on infrastructure projects spurs economic activity, raising the level of GDP by about \$1.59.³

At the top of our agenda must be bringing our airports and aviation system out of the 1950s as well as building true high-speed rail in our most economically strategic corridors.

Adopt a Smart National Strategy

At other pivotal moments in our history, the nation's government and business leaders devised blueprints to implement infrastructure plans that our economy needed. We need that kind of blueprint today to help us transition from Eisenhower's highway plan of the 1950s to the high-tech transportation plan of the 21st century. The federal government should reassert its leadership and develop a multi-year plan to expand on MAP-21 to make smart, strategic investments in infrastructure.

To be successful, the plan must:

Include A National Strategy. The federal government should develop a plan for a 21st-century national transportation network that identifies the regions and transportation projects that will keep America the most economically competitive. By reducing congestion in the air and on the roads, increasing our freight capacity in ports and intermodal facilities and eliminating critical bottlenecks on our highways.

Establish Strict Criteria for Investments. Most federal transportation dollars are distributed to states according to a set formula, without regard to economic activity or resulting job creation. A national network requires national benchmarks to realize national outcomes. Federal policy must include new requirements that state officials conduct cost-benefit analyses or otherwise be held against specific performance standards for the use of federal funds.

Focus Investments on Economic Returns. Three-quarters of U.S. GDP is generated in the 100 largest U.S. metropolitan areas, where two-thirds of the population lives. Federal dollars should prioritize improving capacity and efficiency at economic junctures that have national significance. Economically critical hot spots deserve and demand investment and innovation now in order to improve productivity and foster long-term growth nation-wide.

Re-Orient Washington's Priorities

A new national plan should focus on investing in other forms of transportation and highway innovations like truck-only, high-occupancy toll, and express bus lanes. But at the top of our agenda must be bringing our airports and aviation system out of the 1950s as well as building true high-speed rail in our most economically strategic corridors. And like our competitors, we should be doubling down on freight rail and mass transit. Together, these investments will improve mobility, efficiency, and sustainability, and unlock economic potential in our major metropolitan regions.

Top priorities should include:

Passing a multi-year transportation bill.

This period of ongoing economic insecurity demands a long-term federal commitment to infrastructure investment. The Congressional Budget Office has estimated that direct, well-targeted government spending of \$185 billion a year on infrastructure would generate economic and social benefits that would exceed the cost.⁴ Federal Reserve Chair Benjamin Bernanke has repeatedly urged Congress to continue investing in infrastructure even as it focuses on reducing the deficit. In the years after SAFETEA-LU expired in 2009, the long-overdue re-authorization of a federal multi-year transportation bill was a critical opportunity for Washington to increase investment and inject some common sense into our transportation policy. However, the 2012 MAP-21 maintains SAFETEA-LU's funding levels, adjusted for inflation, and does so for only two years. Of course, before Congress can justify increasing the levels of investment in transportation, there must be further reform of the current funding system. A sensible new long-term transportation bill should come with a series of hard choices: about national priorities, about which initiatives get funded, and about how to pay for these vital investments.

Targeting federal dollars toward economically strategic freight gateways and corridors. The federal government should shift more attention and funding toward multi-jurisdictional projects that have

national economic impact, and it should finance projects that would ease bottlenecks and expand capacity at critical points in our freight transport network.

Re-focusing highway investment on projects of national economic significance.

We know that each year trucks haul \$400 billion of freight (or 3% of GDP) over the Ohio River at the border of Ohio and Kentucky where two major freight corridors—one running coast to coast, and one running from Miami to Detroit—intersect. Thanks to all this heavy traffic, the bridge has one of the worst bottlenecks in the country and has been designated functionally obsolete and unsafe. This is the kind of economic hot spot that the federal government should target. And priority should be given to fixing our aging highways rather than building new ones we can't afford to maintain.

Investing more in mass transit. Two-thirds of the U.S. population lives in our largest metropolitan areas, and this number is expected to grow—a recent survey shows that 77% of Americans under 30 intend to live in an urban core for most of their lives. Yet only 30 of the largest 100 metropolitan regions in the U.S. have light rail or subway systems. Only half of Americans have access to mass transit, and surveys show that most Americans want more local transport options. But cities and states need more federal support to build the mass transit alternatives our metropolitan regions need. The federal government should shift more attention and funding toward building more mass transit alternatives. Spurring investment in mass transit is a smart use of federal dollars: new light rail or commuter rail lines can accommodate 8 or 9 times the number of passengers as a new lane of highway, and they can be built at a fraction of the cost.

Implementing the Next Generation aviation system. Air traffic control is managed by the same radar system we've had since the 1950s, even though data-driven and satellite-based systems have been developed. The U.S. has the world's worst air traffic congestion—and 37% of delays can be attributed to our outdated air traffic control system. In the three New York City airports,

nearly two-thirds of delays are caused by air traffic control problems, creating ripple effects of delays around the country. An investment in the Next Gen satellite-based airplane traffic control system will reduce air travel congestion and delays, and more efficient air traffic patterns will increase fuel efficiency. The Federal Aviation Administration has begun initial phases of Next Gen implementation and has developed a plan to fully adopt the new system by 2018. Congress and the Administration should work to guarantee funding for this project to be completed on time.

Improving facilities at economically strategic airports. The FAA's Airport Improvement Program invested \$2.6 billion in airport facilities in 2009—but less than a quarter of that investment went to the country's largest metropolitan airport hubs, which serve nearly three-quarters of U.S. passengers.⁵ Federal policy should commit to expanding capacity and easing congestion in the nation's largest airport hubs, where inadequate facilities take the biggest toll on economic activity and cause ripple effects around the country.

Investing now in true high-speed rail in economically strategic corridors. A global consensus has emerged that high-speed rail is the high-capacity, low-energy solution for the high-tech, low-carbon economy of the future. More than 15,000 miles of high-speed rail has been built around the world—and almost none is in the U.S. It is time for the U.S. to join the competition. But for high-speed rail to deliver, it must be truly high-speed, and it must run in the right places. Instead of trying to cobble together a national high-speed rail network through thinly spread funding across the country, federal energy and resources should focus on the regions clearly calling for new high-speed transit: the Northeast Corridor between Washington, D.C., and Boston; the Los Angeles-San Francisco corridor in California; and the hub-and-spoke region around Chicago. We may not get all the routes we want, but we will get the high-speed trains we need.

Of course, driving will continue to suit many Americans' lifestyles. But as more Americans continue to concentrate in major

A National Infrastructure Bank would allow the U.S. to tap into the billions of private-sector dollars that could be invested in the large-scale capital projects that our transportation network so desperately needs.

metropolitan areas and congestion worsens, demand will increase for more local transit alternatives. Americans are already demonstrating interest in and support for new forms of mass transit: New light rail systems are thriving in places like Salt Lake City and Phoenix, and they were funded in part by local sales tax increases approved by voter initiatives. And as more Americans seek to fly through our already congested airports, we will need high-speed rail alternatives to get everyone where they want to go. Experiences in places like Germany—which built one of the leading high-speed rail networks in the world while maintaining the quality and accessibility of its famous autobahn—demonstrate that investing in alternate modes of transportation is a way to improve, not undermine, the quality of highway systems.

Re-Think Funding Options

We need to be both innovative and realistic about how to pay for the infrastructure we need. Washington must commit federal dollars to improving our transportation network, but to raise the capital our infrastructure demands, it also must generate new revenue streams and create mechanisms for encouraging private investment. Other countries are able to muster the resources they need for public works by experimenting with newer financing mechanisms, from leveraging federal dollars to harnessing private capital to accurately pricing gasoline and the use of highways. Over \$180 billion in private equity and pension fund capital focused on infrastructure equity investments is available around the world.⁶ Billions of dollars of private capital are flowing to infrastructure projects in other countries while the U.S. fails to leverage government dollars to attract private investors. Important steps in the right direction would be to:

Establish a National Infrastructure Bank.

A National Infrastructure Bank would allow the U.S. to tap into the billions of private-sector dollars that could be invested in the large-scale capital projects that our transportation network so desperately needs. With a relatively small down payment

from the federal government, a National Infrastructure Bank could employ a range of finance and funding tools—including, but not limited to, grants, credit assistance, low interest loans, and tax incentives—to leverage federal investments with private capital. It is because of the European Investment Bank, a similar institution in operation since 1957, that European countries have been able to build high-speed rail and modernize their ports and motorways. There is already bipartisan support in Congress for establishing such an institution in the U.S., and it should be part of the next transportation bill.

Consider raising the nearly 20-year old federal gas tax and indexing it to inflation.

Taking this step once the U.S. economy recovers will generate much-needed revenue for transportation infrastructure and mass transit alternatives. The U.S. federal gas tax has remained unchanged for nearly 20 years, and it is a fraction of the rates collected elsewhere and does not cover the cost of highways. In the U.S., gas taxes cover only half the costs of maintaining and operating our roads, while gas tax receipts in industrialized European nations more than cover the costs of their highways.

Develop other ways to pay for maintaining our roads. As cars become more efficient and rely on alternate sources of energy, we will need to think past the gas tax toward new, innovative revenue sources, such as:

- Incorporating congestion pricing and truck tolling arrangements to more adequately cover the costs imposed by highway use.
- Allowing more local creativity in funding streams. States should be allowed to toll previously untolled federal highways and direct the revenues to the most deserving local transportation projects, not just the highway on which the tolls were collected, as current law requires.
- Exploring long-term revenue generating options such as carbon auctions, fees based on miles traveled, Build America Bonds, or reserves built into capital budgets.

Enhance or make permanent some of the innovative financing and funding mechanisms that have recently been put into place, such as:

- Making permanent the Transportation Investment Generating Economic Recovery (TIGER) grants created in the American Recovery and Reinvestment Act, whereby transportation projects are funded based on performance metrics, not on formulas or narrow funding streams targeting specific modes. After announcing a third round of TIGER awards by September 30, 2012, USDOT will have awarded more than \$3 billion in competitive discretionary grants to projects where state and local governments had to prove the merit of their transportation projects. Competitive funding such as TIGER encourages innovation and accountability and should be maintained, if not expanded.
- Raising or lifting the cap on private activity bonds to attract more private capital that can help rebuild crumbling infrastructure at the state and local level. Currently, the federal government caps states' ability to issue such bonds.
- Examining whether to adopt a federal capital budget. Unlike most state and local governments, the federal government does not have a capital budget, and no business runs without both capital investments and dollars set aside for operating expenses.

Promote Accountability and Innovation

Addressing our infrastructure crisis cannot be accomplished by Washington alone. Fundamental steps are needed to reform and reinvent the relationship between the federal government, state recipients of federal funds, and private sector actors doing the work. Specifically, federal transportation policy should:

Increase accountability in the federal funding and project delivery process. This means including performance metrics in the funding award process; and implementing “use it or lose it” policies. House Transportation Committee Chair John Mica has proposed a “437-Day Plan”—modeled after the Minneapolis bridge reconstruction slated for three years but completed in 437 days—to serve as a guide for improving project delivery.

Audit the U.S. Department of Transportation. There are billions of federal dollars wasted in Washington or sitting unspent. These dollars can be freed and put to use by identifying program and office redundancies, canceling projects that were earmarked but never implemented, and directing these unspent dollars and savings back into the Highway Trust Fund.

Encourage and reward local innovation. Major metro areas, with populations in excess of one million, should be permitted to apply directly to competitive federal programs. In addition, new mechanisms should be created for localities to negotiate bulk purchases for buses, transit cars, and ferries. And there should be flexibility built into federal programs to support locally driven initiatives such as the America Fast Forward project in Los Angeles.

Remove obstacles to state and local innovation. Current laws and regulations preempt state and local governments from experimenting with new cutting-edge programs. For example, federal law has prevented New York City and Boston from launching green taxi initiatives to incentivize the use of hybrid taxicabs. Federal law has also prevented the Ports of Long Beach and Los Angeles from implementing a Green Ports and Clean Trucks Initiative that would reduce carbon emissions while easing port congestion. Our federal transportation and environmental laws and regulations should be encouraging, not impeding, state and local efforts to stimulate green economic activity.

Expand Innovative Financing and Reform Provisions in MAP-21. Since this report was first printed in August 2011, Congress incorporated some of Building America's Future's recommendations into MAP-21. Most importantly, Congress increased the authorization level of the Transportation Infrastructure Finance and Innovation Act (TIFIA) program at the U.S. Department of Transportation from the current annual level of \$122 million to \$750 million in 2013 and to \$1 billion in 2014. TIFIA provides federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance. Congress also adopted our recommendation of raising the maximum level of federal support from 33% to 49%. These improvements will allow a greater number of worthy projects to move forward in strategic places around the nation.

Congress also directed the U.S. Department of Transportation to develop best practices and model contracts for the most popular types of public-private partnerships for the development, financing, construction, and operation of transportation facilities, as well as provide technical assistance to states and cities on PPP models and practices.

These provisions are good first steps toward financing important projects at adequate levels and fostering effective partnerships with the private sector. Washington should continue on this path of reform when crafting the next multi-year transportation bill.



Now is the Time to Invest in 21st-Century Infrastructure

Getting America back on track economically is not going to be easy. But to succeed, we must think and act anew.

During a time when Congress is cutting budgets, it may seem incongruous to step forward with an ambitious program of rebuilding our national transportation. But the Erie Canal was begun not long after economic collapse; Lincoln's Transcontinental Railroad was launched during a time when the country was still torn apart by war; and even Eisenhower's Interstate Highway System was launched amid concerns over deficit spending.

There are always excuses to delay tough decisions, but the time has come for the U.S. to join China, India, Canada, Brazil, France, Spain, and the United Kingdom by committing to a long-term infrastructure revitalization plan. It should focus on transportation but should also include our water and wastewater systems, our dams, our electric grid, and our broadband system. To be as significant in scale as the plans adopted by our competitor nations, it must spur an investment of at least \$200 billion a year.⁷ Not all of that needs to be a federal commitment—state and local government and the private sector must also do their

share. And it need not all be new investment because a significant amount of dollars should be forthcoming from the gas tax and other fees. But make no mistake: We cannot long stay atop the global economy without a significant new federal commitment.

Inaction by the federal government would mean consigning our children and theirs to economic decline, and watching as other countries surge ahead and enjoy the fruit of their infrastructure investments for themselves. That would fly in the face of America's history—and it would squander the America that our parents and theirs worked so hard to build.

To remain the world's economic superpower, to bequeath to future generations a country that is still on the rise, we must act with the same foresight and boldness that has always characterized American leadership. The foundations of our national economy are cracking—and it is not enough to repair the cracks. We must extend the foundation, stronger and wider, to support a new century of economic growth—and a new century of American greatness. Doing that will require not only visionary leadership, but bi-partisan cooperation. Rebuilding America's future cannot be a Democratic or Republican political cause; it must be a national undertaking. And if it is, there will be no stopping it.

*We must extend the foundation,
stronger and wider, to support
a new century of economic growth—
and a new century of American greatness.*

→ **Develop a national infrastructure strategy for the next decade that makes choices based on economics, not politics.**

The U.S. should adopt a 10-year national plan for making strategic investments in our nation's infrastructure. The plan should focus on transportation, but include other infrastructure challenges such as water and the electric grid. To keep America economically competitive, this plan must be as significant in scale as the plans adopted by our competitor nations. To do so, we believe, it must spur an investment of at least \$200 billion per year. **This national infrastructure strategy will create nearly 5 million jobs for the next decade.** Experts agree that \$1 billion in infrastructure investment creates more than 25,000 jobs at construction sites and factories producing needed raw materials. This investment would create nearly half of the 12.5 million jobs that we need to revive the American economy and keep them in place for the next decade.

→ **Pass a multi-year transportation bill updated to compete in the 21st-century global economy.**

After the last multi-year transportation bill expired in 2009, Washington abdicated its responsibility, with ten extensions of federal funding, until passing a 2-year bill in 2012 that preserves existing levels of federal funding, adjusted for inflation, and continues to thinly distribute funds based on archaic formulas. Congress has started to lay the groundwork for policies that will modernize the nation's transportation infrastructure, but it is time for a new long-term bill that sets clear priorities and makes hard choices based on increasing economic return and mobility while reducing congestion and pollution. As a result, the investment strategy will focus on projects that will yield results—Next Gen aviation system; high-speed rail in key corridors; freight rail; public transit; and maintenance of our crumbling transportation network.

→ **Be both innovative and realistic about how to pay.**

America needs a National Infrastructure Bank that can leverage private dollars and invest in the best big projects, including those that span state boundaries or encompass multiple modes of transportation. Once the U.S. economy improves, we should consider raising the nearly 20-year old federal gas tax and indexing it to inflation. Washington also needs to look at all long-term revenue generating options such as congestion pricing, carbon auctions, fees based on miles traveled, or reserves built into capital budgets.

→ **Promote accountability and innovation.**

Under current transportation policy, Washington impedes local innovation while failing to impose accountability for money distributed across the country. Washington should set clear criteria for all funding, encourage state and local innovation through competitive grants, and carefully audit the results to ensure projects are completed on time, on budget, and yielding promised results.



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