

BUILDING TO WIN





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UNIFYING UNDER A “BUILDING TO WIN” STRATEGY



In this election year, rebuilding and revitalizing our nation's infrastructure has drawn the support of both major party political candidates and voters alike. If we can sustain that interest, build momentum, hold our leaders accountable and turn words into reality, we could transform our nation's future for the better.

There are more than enough reasons to seize the moment. A targeted, substantial investment in modernizing our nation's infrastructure would create jobs, boost economic growth, save

lives and help secure America's mantle of economic leadership in the world. Indeed, the time has come to pursue a bold vision for the future before it is too late.

Sixty years ago, President Dwight D. Eisenhower launched one of the most ambitious infrastructure undertakings in world history. Over the next four decades, the Interstate Highway System would come to bind the nation with Eisenhower's broad ribbons of asphalt and steel. This new infrastructure resulted in jobs, health care, housing and markets for manufactured goods—the arteries of a free market system that has delivered more opportunity to more people than in any other society in any other chapter of human history.

But for too long, our nation has relied on the transportation infrastructure we inherited from previous generations. We have deferred the necessary efforts of building on Eisenhower's legacy for the 21st century and for our own posterity. Our crumbling roads and unsound bridges, outdated ports and waterways and congested airports betray our parents' and grandparents' hard work and shared commitment to build a country worthy of our founders' loftiest ideals.

The National Association of Manufacturers was formed more than 120 years ago to help our nation meet its most pressing challenges and to compete and win on the world stage. That remains our mission today. So we have put together a bold, significant proposal. “Building to Win” is a blueprint for the next Congress and president to repair our roads, bridges, rails, airports, ports and waterways and revolutionize the infrastructure that makes the American Dream possible.

Reimagining our transportation infrastructure will help manufacturers serve their customers and communities. It will renew confidence in our free enterprise system and American institutions. It will create momentum so that, together, we can continue tackling our nation's greatest challenges. And it will once again help sustain our nation's unity, paving the way for prosperity in the years and decades ahead.

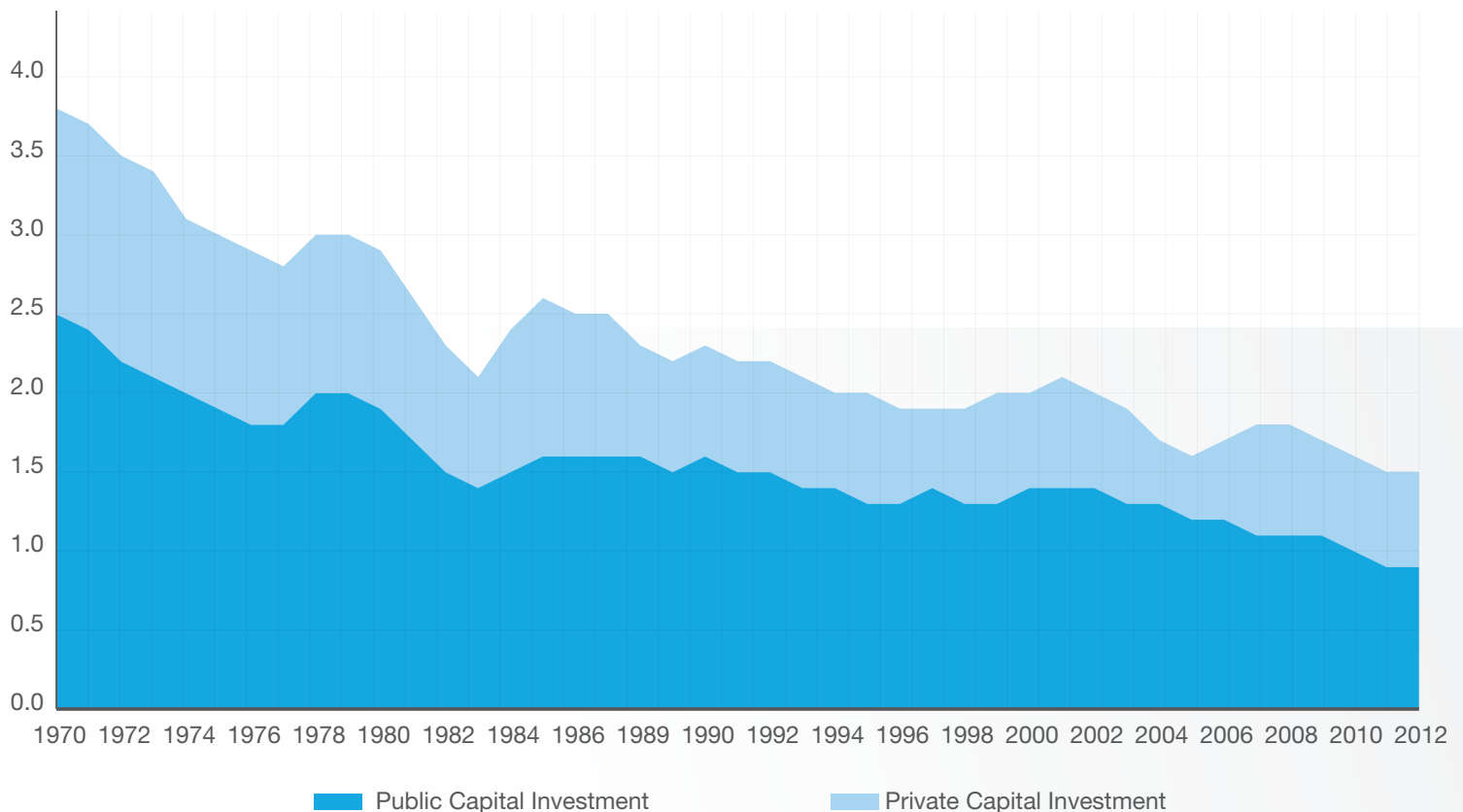
A handwritten signature in black ink, reading "Jay Timmons".

Jay Timmons
President and CEO
National Association of Manufacturers

THE URGENT, ACUTE ECONOMIC NEED FOR TRANSPORTATION INVESTMENTS

Great nations build and invest in great infrastructure. The reason is simple: When people are better connected, when communities have greater access to economic opportunities and when manufacturers have efficient ways to move goods to market, the quality of life rises, productivity soars and societies thrive. Current U.S. infrastructure, however, is in an alarming state of disrepair and in urgent need of strong investments.

REAL INFRASTRUCTURE INVESTMENT AS A PERCENTAGE OF POTENTIAL GDP, 1970-2012



“ We depend on infrastructure to get our products to the end market. Infrastructure investments and an efficient transportation system will have a direct impact on growing our business.”

Charles “Chuck” Wetherington
President
BTE Technologies, Inc.



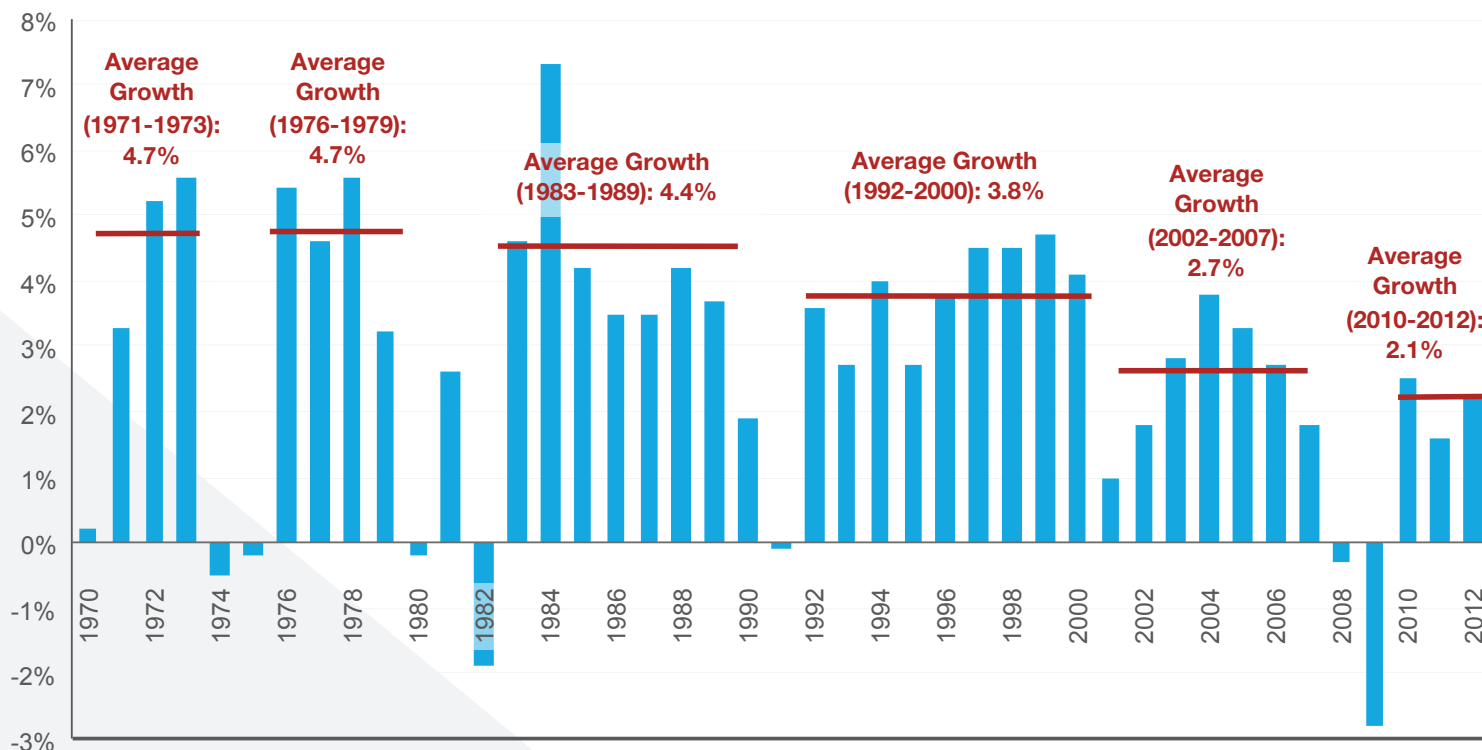
GROWTH

Manufacturers, and all Americans, are living through a period of anemic economic growth. This is a trend that goes beyond the results of the 2008-2009 recession. There is a downward trajectory that correlates economic growth with infrastructure investment as a percentage of GDP. This trend is alarming—because it will continue to harm America’s future growth and overall economic activity. The upside of the historical data indicates that previous significant investments in infrastructure have aligned with high levels of growth and more aggressive economic activity.

ECONOMIC COMPETITIVENESS

Each year, the World Economic Forum includes infrastructure as one of its key measures of economic competitiveness. For 2015–2016, the United States ranked behind many of its biggest global competitors at 16th in overall infrastructure quality.¹ That is unacceptable and embarrassing and needs to change. China is spending more on infrastructure each year than North America and Western Europe *combined*.² And over the past 20 years, the United States has consistently spent less on transportation infrastructure, as a percentage of GDP, than its peers.³ As the quality of transportation infrastructure deteriorates, the United States continues to fall behind our global competitors. It is time for the United States to lead again.

REAL GDP GROWTH, 1970–2012 (ANNUAL PERCENTAGE CHANGE, SEASONALLY ADJUSTED, 2009 CHAINED DOLLARS)



PRODUCTIVITY

Modern transportation systems unleash greater productivity. For example, the less time workers spend in traffic, the more time they can devote to productive or leisure activities. The ease with which companies can connect with suppliers and move their products to market reduces costs for manufacturers, businesses and consumers alike. Many manufacturers have shifted their business models to just-in-time delivery systems, making dependable transportation systems even more crucial.

But the inverse is also true—a lack of infrastructure investments stymies productivity and limits opportunities for businesses. In some cases, a single transportation failure or delay can shut down an entire assembly line.

JOB CREATION

Millions of jobs are at stake when infrastructure remains deteriorating and inadequate. Without immediate action on the infrastructure crisis, the United States will lose more than 2.5 million jobs by 2025 and more than 5.8 million by 2040.⁴

By contrast, infrastructure investments can create jobs in the near term, setting off a positive ripple effect across industries. Analysis from the White House Council of Economic Advisers finds that 68 percent of near-term infrastructure jobs are in construction, 10 percent are in manufacturing, and 6 percent are in retail and trade.⁵ Construction and manufacturing jobs have a powerful multiplier effect on our economy; for every \$1 spent in manufacturing, the economy grows by \$1.81.⁶

“As manufacturers, our ability to move parts—from suppliers to our factory and finished goods from our factory to our customers—relies on the highways, railways, aviation and seaports of America. If we cannot move goods quickly and consistently, we cannot provide the advantage of efficiency to our customers, and therefore, we cannot be competitive. We must remember that it is our infrastructure that allows our American manufacturing operations to remain competitive in the global economy.”

Susan Alt
Senior Vice President, Public Affairs
Volvo Group North America

QUALITY OF LIFE

When the federal government fails to invest in infrastructure improvements, American families and businesses bear the brunt of the costs. From 2016 to 2025, families will lose \$3,400 every year because of deficient infrastructure, and by 2026, that cost will rise to a staggering \$5,100 wasted every year.⁷

Effective transportation systems enhance the quality of life for families and communities around the country. Safe and reliable roads, airports, waterways and railways better connect people to their friends and loved ones. Greater mobility gives workers better access to job opportunities and options for housing, health care, shopping and recreation.⁸ In the 20th century, the proliferation of airports unlocked the wonders of convenient, low-cost, long-distance travel and opened pathways for tourism.⁹ When businesses are able to transport goods more cheaply, consumers benefit from lower prices of household products. In short, transportation infrastructure boosts the quality of life, from rural areas to urban centers and every community in between.



IMMINENT CHALLENGES IN TRANSPORTATION INFRASTRUCTURE

Investing in transportation infrastructure will invigorate the American economy and enhance our competitiveness on the world stage. And yet, despite the clear benefits, the United States has failed to adequately invest in modern, efficient transportation infrastructure. A National Association of Manufacturers (NAM) study found that infrastructure investment as a percentage of real potential GDP has fallen precipitously over the past three decades.¹⁰ This dearth of investment wastes time and money and poses serious safety risks to workers, drivers and passengers.

After years of delays, Congress has taken steps to stem the decline in infrastructure investments. After seven years without authorizing water infrastructure legislation, in 2014, Congress finally authorized new inland waterway and port dredging projects. And in late 2015, lawmakers passed a multiyear surface transportation bill, increasing investments in roads and bridges. In July 2016, Congress sent a short-term funding measure for the Federal Aviation Administration (FAA) to the president's desk with no time to spare before the agency's budget was set to expire. But these start-stop efforts merely maintain the status quo. They do not provide the kind of momentum and vision the nation needs to restore and upgrade transportation systems around the country.

ROADS, BRIDGES AND TRANSIT

From city streets to rural highways, the nation's roads and bridges are clogged with traffic, and in many cases, they are in serious disrepair. It is completely unacceptable that 65 percent of major roads in the United States are rated "less than good condition."¹¹ That takes a toll on manufacturers' bottom lines through unreliable delivery times and increased fleet maintenance costs. U.S. businesses pay \$27 billion in additional freight costs every year because of poor road conditions.¹² Beyond the economic costs, failing to address deteriorating roads is also a grave safety concern. Road conditions were a significant factor in approximately one-third of traffic fatalities in 2013.¹³ Nothing short of American lives and livelihoods are threatened by our deteriorating roadways.

Nearly 60,000 bridges across the United States are rated "structurally deficient," meaning they are in need of significant maintenance and repair.¹⁴ U.S. drivers and passengers cross these structurally deficient bridges nearly 204 million times a day.¹⁵

In addition to structural deterioration, traffic congestion costs both time and money, and it slows productivity. In 2014, Americans in urban areas spent 6.9 billion hours of extra time on the nation's roads—time that could have been better spent contributing to the economy.¹⁶ Traffic also delays the trucking industry that ships freight for manufacturers, adding \$49.6 billion to operational costs.¹⁷ Without improvements, congestion will only get worse in the coming years. Unless we act now to invest in infrastructure, by 2040, peak hour congestion will clog 34 percent of the nation's highways.¹⁸

For public transit, even as ridership has increased, a lack of funding has contributed to an aging system. The average age of a transit bus is 18.7 years, and nearly half of heavy rail cars in the United States need immediate replacement, according to the American Public Transportation Association. Public transit is a vital mobility option for many workers across the country and helps ease congestion on roads and bridges. The construction, operation and maintenance of transit assets rely heavily on manufactured goods.



AVIATION

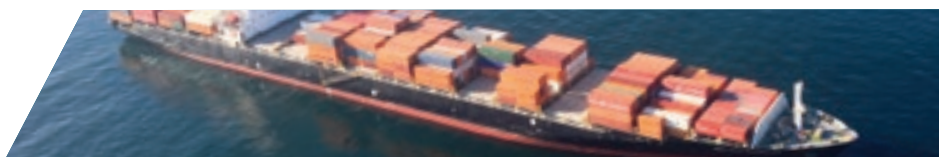
Planes transport time-sensitive and high-value cargo both inside the United States and around the world. Unfortunately, our aviation infrastructure has been buckling under antiquated systems that cause delays, congestion and wasted fuel. Limited airport capacity and increased demand have created a perfect storm, leading the FAA to forecast added delays in the years ahead.¹⁹

With the FAA's Next Generation Air Transportation System (NextGen), the federal government has embarked on an effort to modernize air traffic systems. The initiative, however, has faced numerous delays and cost overruns, and the FAA has yet to develop an implementation plan that will address these challenges.²⁰ Without improvements to aviation infrastructure, businesses are set to lose \$258 billion by 2020. By 2040, those losses would balloon to \$1.2 trillion.²¹

PORTS AND WATERWAYS

Ports and inland waterways once showcased the very best of American civil engineering and ingenuity. But many of these pieces of infrastructure have aged well beyond their intended use and were not built to manage today's size and volume of ships and cargo. For example, along inland waterways, more than half of the locks that help ships more easily navigate rivers are more than half a century old.²² What's more, 70 percent of locks and dams experienced an unscheduled delay or service interruption in 2015.²³ And barges experience more than 50 service interruptions a day, delaying them for hours at a time.²⁴

Seaports are the gateways to U.S. trade with the rest of the world, but current bottlenecks hurt U.S. companies and diminish America's global economic competitiveness. In a survey of American Association of Port Authorities members, one-third of respondents said congestion over the past decade has cut into port productivity by 25 percent or more.²⁵





RAIL

FREIGHT RAIL

Railroads help manufacturers transport imports and exports from the center of the country to marine and inland ports and everywhere in between. Rail lines move 43 percent of intercity freight and approximately one-third of U.S. exports.²⁶

This system differs from other infrastructure sectors because it is almost entirely privately owned and operated. Private investments in freight rail have grown in recent years, including \$30 billion in 2015—a record high.²⁷ In the future, the Department of Transportation forecasts U.S. freight rail will increase by 40 percent, creating a need for streamlined regulatory reviews and continued investments.²⁸

PASSENGER RAIL

In 2015, Amtrak ridership stood at 30.8 million, reflecting consistent demand for passenger rail in the United States.²⁹ However, the service remains marred with congestion and unreliable arrival and departure times. Without adequate investments, increased competition and innovative business practices to help bring Amtrak into the 21st century, the system could become a significant drag on U.S. economic productivity.

Traffic clogging the nation's roads and bridges is at an all-time high. Ports and airports are at capacity. Unsound infrastructure puts lives at risk. Businesses and manufacturers are cutting into their bottom lines with wasted time and money. And Congress has only managed to kick the can down the road. The United States desperately needs a targeted, substantial investment in revitalizing the nation's infrastructure. Congress should legislate by identifying and prioritizing projects requiring federal investment to revitalize the nation's infrastructure.

The background of the slide features a low-angle shot of a large steel truss bridge spanning a body of water. In the distance, a port crane is visible, and the water is filled with numerous colorful shipping containers. The sky is a clear, pale blue. A diagonal white line cuts across the image from the bottom right towards the center, creating a modern, geometric design.

BUILDING TO WIN

TOP PRIORITIES

FUNDING NEEDS BY TRANSPORTATION MODE

Mode	Current Annual Federal Spending Level ³⁰	Annual Funding Gap (Investment Needed Each Year Through 2025) ³¹	Cumulative 10-year Funding Gap (Difference Between Current and Needed Investments)
Highways and Bridges	\$88.3 Billion ³²	\$91 Billion ³³	\$1.1 Trillion³⁴
Aviation	\$13.3 Billion ³⁵	\$4.2 Billion	\$42 Billion – \$75 Billion ³⁶
Ports and Inland Waterways	\$1.1 Billion ³⁷	\$1.5 Billion	\$15 Billion
Public Transit	\$17.1 Billion ³⁸	\$34 Billion – \$56 Billion ³⁹	\$86 Billion ⁴⁰

After years of congressional inaction and underinvestment, the gap between current spending and what is needed to revitalize U.S. infrastructure totals more than \$1 trillion⁴¹—a staggering sum. Some critics wrongfully contend that such numbers are exaggerated. But after years of stop and start efforts, instead of long-term solutions, we are left with an acute need. Rather than debating the scope of the problem, it is time to come together under a “Building to Win” strategy.

The NAM sees a clear opportunity to fix the nation’s languishing transportation systems in a targeted way. Far from being a blank check for pet projects, the NAM recommends investments that come with strong accountability measures to ensure funds go to projects offering the greatest value for businesses, families and the economy.

This agenda offers a transportation blueprint to target specific priority investments that can deliver tangible results for U.S. manufacturers, businesses and American households. These span each of the critical transportation infrastructure sectors, collectively serving the vital needs of American businesses and communities and should be top priorities for the next Congress and president.



HIGHWAYS

OVERALL INVESTMENT NEEDED: \$629 BILLION⁴²

From urban highway corridors to key interchanges where commuters and trucks come to a chronic standstill, the American Highway Users Alliance (AHUA) publishes the results of the top highway bottlenecks in the country.⁴³ This list is a familiar one to many American manufacturers and businesses operating across the nation. Drivers have been confronting these choke points for years or even decades. The American economy cannot afford to come to a standstill any longer.

The following highway bottlenecks are some examples of manufacturers' needs for improved transportation:

THE HIGHWAY TRUST FUND: A BUMPY ROAD TO SOLVENCY

The Highway Trust Fund (HTF) supports state and local investments to ease traffic congestion on highways, fix bridges, improve transit systems and make important safety improvements. But over the past several years, the fund has been on a path toward insolvency.

The HTF is funded primarily through the federal gas tax. In the past, Congress raised the gas tax to maintain critical infrastructure investments. But the last increase was in 1993, and the rate was not indexed to inflation, meaning the purchasing power of this revenue has declined by 40 percent since 1993. And as fuel-efficient cars become more popular, drivers use less gas. So, while drivers are crisscrossing America's highways more than ever, the HTF collects less revenue per mile traveled.

To make up for the shortfalls, the federal government has transferred approximately \$143 billion from the Treasury general fund so state and local highway projects can continue. But this is a stopgap solution. **We need a reliable, user-based, long-term funding stream so that families, drivers and manufacturers can have the safe, efficient highways they need.**

Chicago's Kennedy Expressway (I-90)

Chicago is one of the nation's most important intermodal junctions. Highways, freight rail lines, inland waterways and cargo flight routes all converge in the Windy City.

A 12-mile stretch of the Kennedy Expressway that links downtown Chicago with O'Hare International Airport and the northwest suburbs of the city is classified as the worst highway bottleneck in the country by the AHUA. Fixing this bottleneck through capacity enhancements or intelligent highway management strategies has the potential to save up to \$418 million annually in reduced delays for motorists and trucks.⁴⁴

Los Angeles (I-405, I-10, U.S. 101, I-110, I-5/I-10 Interchange)

With its ports and airport facilities, Los Angeles serves as one of the principal gateways for manufactured goods to come in and out of the United States. Even manufacturers and businesses based far from California are impacted by the pace at which freight can pass through the L.A. region.

Los Angeles is home to 11 of the top 30 highway bottlenecks in the United States, according to the AHUA.⁴⁵ In total, these 11 bottlenecks account for 44 million hours of delays annually.

Atlanta (I-285 and I-85 – Tom Moreland Interchange)

Although highway congestion impacts all road users, some choke points in the U.S. interstate network more significantly affect the movement of freight trucks. The worst such bottleneck for freight is the Tom Moreland Interchange in Atlanta.⁴⁶ The five-level interchange is known as “Spaghetti Junction” for the complicated web of overpasses and interchanges. Businesses from across the Southeast region would benefit substantially from efforts to alleviate the chronic congestion at this interchange.

New York City (Hudson River Crossings, Cross Bronx Expressway, I-678)

The most populous city in the United States is also one of the Northeast region's most critical transportation hubs. As the largest business center in the region and a major port, New York City receives manufactured goods from across the country. But with freight vehicle restrictions on most of New York's tunnel crossings and a growing need for increased freight rail capacity surrounding the city, many of New York's highways are choked with truck traffic, which slows down all motorists. Infrastructure improvements to New York's highways are critical for ensuring that as the region grows, its businesses remain competitive.

Houston (I-69, I-610)

Two stretches of highways in Houston are critically congested gateways to the city's commercial and industrial centers, slowing the movement of manufactured goods and hampering economic activity. On the American Transportation Research Institute's ranking of the worst freight bottlenecks of 2015, Houston was home to four of the top 10 bottlenecks—more than any other city in the country.⁴⁷

ACTION REQUIRED:

Relieve highway bottlenecks and repair America's crumbling highways and bridges.



BRIDGES

OVERALL INVESTMENT NEEDED: \$112 BILLION

Bridges in the United States are in dire condition, with 10 percent deemed “structurally deficient.” Every day, more than 7,470,000 commercial and personal vehicle trips take place on just 30 structurally deficient bridges.⁴⁸ The following bridges are some of the most heavily traveled in substandard condition:

- **I-405 over Olympic Blvd. (Santa Monica, Calif.)**
296,000 daily crossings
- **I-270 E over Conway Rd. (St. Louis, Mo.)**
210,521 daily crossings
- **Garden State Parkway over Mill Rd. (Union County, N.J.)**
193,870 daily crossings

In addition to these high-traffic bridges, there are a number of states that have an alarmingly high percentage of structurally deficient bridges, compromising the safety of thousands of drivers crossing them every day.

State	Number of Structurally Deficient Bridges	Percentage of All Bridges Deemed Deficient ⁴⁹
Pennsylvania	4,783	21%
Iowa	5,025	21%
South Dakota	1,156	20%
Oklahoma	3,776	16%
Nebraska	2,474	16%

ACTION REQUIRED:

Act now to repair and upgrade America’s neglected and unsafe bridges.

BRENT SPENCE BRIDGE:

THE HIGH COST OF DELAY

The Ohio River's Brent Spence Bridge in the Cincinnati area is a vital economic corridor.

Not only does it carry thousands of vehicles daily across the Ohio–Kentucky border, the freight that crosses the bridge is equal to 3 percent of the nation's GDP. In the more than half century since the bridge opened in 1963, daily traffic has grown to more than 172,000 vehicles on a structure initially meant to accommodate only 80,000. The stress placed on the bridge is only expected to grow, and the Federal Highway Administration's National Bridge Inventory classifies the bridge as “functionally obsolete” because of safety and capacity concerns. Despite the severe need on one of the busiest trucking routes in the United States, investments to replace the Brent Spence Bridge are continually delayed, and local businesses bear the brunt of the consequences.

“ My employees and the products that we make waste valuable time crossing the Ohio River on the Brent Spence Bridge due to the uncertainty of this structure. We need immediate funding to move stalled projects like the Brent Spence Bridge off the sidelines.

Dan Glier
President
Glier's Meats, Inc.

A stalled \$2.7 billion proposal to replace the bridge and make associated highway upgrades would provide economic benefits exceeding \$18 billion in 20 years, according to the Texas A&M Transportation Institute. But for every day that inaction delays this critical work, the price tag increases by more than \$220,000.





AVIATION

OVERALL INVESTMENT NEEDED: \$42 – 75 BILLION

The United States should commit to a swift plan for modernizing the U.S. air traffic system with NextGen implementation to alleviate congestion at the nation's airports. The FAA estimates that NextGen would reduce flight delays by 35 percent.

In addition, U.S. airports need upgraded standards. From 2015 to 2019, the nation's airports will require \$15.1 billion in capital improvements, with 38 percent of those costs needed just to maintain a state of good repair and 56 percent needed for new capacity to accommodate a 31 percent increase in passengers and a 100 percent increase in cargo activity.⁵⁰ For example, without additional improvements beyond what is planned, delays are expected to become “severe” at New York City–area airports by 2020. By 2030, nine airports will also have severe delays. These airports include Charlotte, Houston, Las Vegas, Phoenix and San Francisco—hubs serving hundreds of other regional airports. These investments are necessary for continued safe, competitive passenger and cargo air travel in the United States.

Top 10 U.S. Passenger Airports⁵¹

Hartsfield–Jackson Atlanta International
Los Angeles International
Chicago O’Hare International
Dallas–Fort Worth International
John F. Kennedy International
Denver International
San Francisco International
Charlotte/Douglas International
McCarran International
Phoenix Sky Harbor International

Top 10 U.S. Cargo Airports⁵²

Memphis International
Ted Stevens Anchorage International
Louisville International–Standiford Field
Chicago O’Hare International
Miami International
Los Angeles International
Indianapolis International
Dallas–Fort Worth International
John F. Kennedy International
Cincinnati/Northern Kentucky International

ACTION REQUIRED:

Quickly develop a plan to accelerate the implementation of NextGen air traffic management technology and upgrade runways and airports to world-class standards.





UPGRADING PORTS AND INLAND WATERWAYS

OVERALL INVESTMENT NEEDED: \$15 BILLION

While the United States has more than 300 commercial harbors and more than 600 smaller harbors, the top 10 port complexes handle a majority of cargo volume and international vessel calls. Port congestion exacerbates first- and last-mile delays in freight movements, driving up the cost of goods in both the global marketplace and supply chains here in the United States.

Top 10 U.S. Ports by Tonnage, 2014⁵³

Ports	Rank	Total Tons (Millions)
South Louisiana, La.	1	267.4
Houston, Texas	2	234.3
New York, N.Y., and N.J.	3	126.2
Beaumont, Texas	4	87.3
Long Beach, Calif.	5	85.0
Corpus Christi, Texas	6	84.9
New Orleans, La.	7	84.5
Baton Rouge, La.	8	69.2
Mobile, Ala.	9	64.3
Los Angeles, Calif.	10	61.0

In addition, approximately 25 percent of the nation's freight value is shipped on the 12,000-mile inland waterway system, passing through 192 lock sites that connect the heartland and Pacific Northwest to global markets. Unfortunately, instead of doing maintenance work to prevent failures, our nation's locks are only fixed when they fail, which is simply unsustainable. Improving inland waterway systems and modernizing locks that suffer from serious service disruptions would relieve congestion on already-overcrowded highways, creating a win-win for manufacturers, consumers, drivers and the nation's economy.

ACTION REQUIRED:

Take an expedited approach to deepen ports, upgrade aging locks and enhance intermodal connections.

SOUTHERN CALIFORNIA MULTIMODAL IMPROVEMENTS: UNCLOGGING CONGESTION

Los Angeles notoriously suffers from the worst traffic congestion in the country. Traffic not only stalls local residents but also impedes the efficient flow of goods to and from the ports of Los Angeles and Long Beach. These ports are the largest gateway for waterborne trade by cargo volume in the country, serving both the major regional market and inland regions across the country. The economic impact of

Los Angeles' congestion is therefore felt throughout the United States by everyone from retailers, to small manufacturers, to Midwestern farmers who rely on the ports to remain competitive.

Investing in the region's ports, intermodal links and roads

would help alleviate current congestion and help prepare for expected growth. While work has begun on the replacement of the Gerald Desmond Bridge, which carries about 15 percent of the nation's waterborne cargo to and from the ports of Long Beach and Los Angeles, a number of other critical projects are stalled because of insufficient or uncertain funding. Investment in these projects would help clear congestion and reduce traffic accidents, allowing commerce to flow more smoothly between the ports and some of the nation's largest distribution, warehousing and logistics centers.





PUBLIC TRANSIT:

OVERALL INVESTMENT NEEDED: \$86 BILLION

From 2005 to 2014, the number of transit-commuting workers grew by 23 percent. However, transit agencies face budget shortfalls and have difficulty addressing capital investment needs—21 percent of buses need replacement now, and an additional 32 percent will need replacement in five years' time. New investments should help transit agencies repair and replace aging fleets and help ensure transit systems remain a safe and reliable mobility choice for all passengers, including manufacturers and their employees.

ACTION REQUIRED:

Eliminate the maintenance backlog and expand the reach of transit into more communities.



PASSENGER AND FREIGHT RAIL:

AMTRAK OVERALL INVESTMENT NEEDED: \$52 BILLION

New competition with interstate bus and ridesharing services has created an opportunity for Amtrak to operate more efficiently and provide a more competitive service to its customers. The U.S. government must also hold Amtrak accountable to make tough business decisions to improve its bottom line, especially because additional funding is necessary to address the backlog of projects. Specifically, the United States needs to focus investment on improving road- and rail-grade separations on both freight and passenger lines to reduce delays and save lives.

ACTION REQUIRED:

Invest in Amtrak and promote regulatory and fiscal policies that incentivize continued record levels of private capital reinvestment in railroad infrastructure, as a majority of Amtrak services operate on track owned by freight railroads.



THE GATEWAY PROGRAM: SEIZE THE OPPORTUNITY

Serving nearly half a million people a day, New York City's Penn Station is the busiest rail station in North America—and perhaps the most troubled. The twin, single-track rail tunnels under the Hudson River—the most critical link of the Northeast rail corridor—are more than a century old, already at full capacity and sustained heavy damage in 2012 from Superstorm Sandy. Reconstructing the tunnels would require closure of each tube for more than a year—an undertaking that would cause massive disruptions to rail service in the region and wreak economic havoc. That's why constructing a new tunnel is so critical.

The Gateway Program is a visionary track, tunnel, bridge and station improvement project that would double the number of passenger trains running under the Hudson River. Despite the acute need, the project's outlook is uncertain. The U.S. Department of Transportation has only recently provided initial funding for the environmental review process. And the sources of overall project funding, as well as details around how New York and New Jersey will contribute resources and coordinate project details, are all in flux. Construction on the new tunnel, which is estimated to cost roughly \$20 billion, is not anticipated to begin before 2019, with completion expected between 2025 and 2028. Delaying this project could cause serious economic damage to the New York City region. But jump-starting the project would bring massive and long-term benefits to the nation's economy.

GOOD GOVERNANCE MEASURES TO EFFECTIVELY DELIVER BETTER INFRASTRUCTURE

AN INDEPENDENT COMMISSION TO EVALUATE PRIORITIES AND REVENUE OPTIONS

An independent, bipartisan transportation commission is needed to spark a policy discussion and oversee a national strategic plan for transportation investments, including recommending revenue adjustments to achieve the plan as recommended by the National Surface Transportation Policy and Revenue Study Commission almost a decade ago. In the meantime, many states have created independent transportation commissions to oversee statewide planning and project selection like state public utility commissions. The federal government similarly has relied on the Defense Base Closure and Realignment Commission (BRAC) to make recommendations on military base closings and the Postal Regulatory Commission to set postal rates.

Empowering a bipartisan commission would depoliticize the decision-making process, and linking revenue proposals to a national strategic plan would also raise confidence that infrastructure funds would be spent judiciously. Both factors should alleviate obstacles to approving new revenue sources or raising fuel tax rates. Of course, like the BRAC process. Congress should approve the plan.

ACTION REQUIRED:

Create an independent, bipartisan transportation commission.

EXPEDITED ENVIRONMENTAL REVIEW

The United States lags behind other advanced economies in setting reasonable policies and procedures that promote the expediency of project reviews while ensuring environmental protections. Shortening the average time for approval on transportation projects would go a long way in helping Americans realize the benefits of infrastructure investments.

Right now, environmental review approvals take an average of six years for major highway projects.⁵⁴ To streamline this cumbersome process, policymakers should address a number of concerns, including unnecessary and immaterial details in the review that are only added out of a fear of litigation and the multiple local, state and federal agencies that lack clear hierarchy, slowing decision-making.



ACTION REQUIRED:

Streamline regulations so projects can get done more quickly, mandate accountability and improve efficiencies and processes to reduce the costs of delayed infrastructure.

OPTIONS TO FUND AND FINANCE

The dire state of U.S. transportation infrastructure demands immediate action. Though the need for new revenue has mounted over time, funding transportation infrastructure beyond routine maintenance has become an uphill battle, especially when multiple jurisdictions are involved in designing, planning, funding and building a given project. Policymakers need to embrace new ways to increase infrastructure investments to meet the needs of businesses and communities.

“ A six-year delay in starting construction on public projects costs the nation more than \$3.7 trillion, including the costs of prolonged inefficiencies and unnecessary pollution.”

Philip Howard
Legal Reform Expert and Founder
Common Good

OPTIONS TO FUND

Federal Contributions for Transportation Investments

The following is a list of funding ideas for policymakers to consider. This is not an exhaustive list, nor does it represent an exact policy prescription for what lawmakers should adopt. The NAM is putting these serious funding options forward to spark the conversation on how to turn the tide on chronic underinvestment, get people back to work, catch up with the rest of the world on infrastructure and address a long-term public policy challenge that elected officials have long neglected.

Option for Funding	Description and Potential Action	Revenue Estimate
Gas Tax	Gasoline is taxed at 18.4 cents per gallon and diesel at 24.4 cents per gallon. The gas tax, which is the primary method of collecting revenue for highway maintenance, was last raised in 1993. Increase the gas and diesel tax during a one-time legislative opportunity by 15 cents.	\$41.8 billion over five years
Gas Tax Indexing	The purchasing power of the fuel tax has declined over the past 20+ years. Adjust the fuel tax to inflation by pegging the diesel and gas taxes to the Consumer Price Index help to prevent future declines in purchasing power.	\$16 billion over five years
Vehicle Miles Traveled (VMT) Fee	The federal government has mandated increases in fuel efficiency without addressing how such changes impact funding for transportation investments. A transition to a mileage-based user fee would capture all vehicles. Charges could vary: a flat fee (i.e., a fixed number of cents per mile, regardless of where or when the travel occurred); a variable fee based on driver considerations, such as time of travel, congestion, type of road traveled on, type and weight of the vehicle and vehicle emission levels; or a combination of these factors. Introduce a VMT of 1 cent per mile and 4 cents per mile on trucks.	For cars, \$175.6 billion over five years; for trucks, \$70.7 billion over five years
Registration Fees	Registration fees are directed and collected through state departments of motor vehicles. A federally imposed vehicle registration fee, on top of existing state registration fees, could raise substantial revenue for infrastructure investments. Registration fees that ensure electric or hybrid-electric vehicles are supporting transportation funding have been proposed as a means to collect revenue from car owners who consume little or no fuel, yet rely on the same roads as gas- and diesel-powered cars. \$100 registration fee on electric vehicles and a \$50 registration fee on hybrid vehicles; or \$20 registration fee on all vehicles	\$1.2 billion over five years for electric and hybrid vehicles; \$32.2 billion over five years for all vehicles

Option for Funding	Description and Potential Action	Revenue Estimate
Passenger Facility Charge (PFC)	<p>Airports administered by public agencies are able to collect a PFC of up to \$4.50 for every enplaned passenger through the airline ticketing process. Revenues collected from this fee support airport capital improvements, as well as airport access-enhancing road and transit projects. Since the PFC was last increased in 2000 and it is not indexed for inflation, its purchasing power has diminished significantly. Raising the cap that airports can assess on passengers would provide more funds for airport and other infrastructure investments.</p> <p>Raise the cap on PFCs to \$8.</p>	\$12.4 billion over five years
Harbor Maintenance Tax	<p>The harbor maintenance tax is similar to customs duties and fees. It is a 0.125 percent tax assessed on the value of imported commercial cargo. The majority of the tax's revenues are designed to pay for harbor maintenance and dredging and deposited into the Harbor Maintenance Trust Fund. However, funds must be released through the annual appropriations process. Frequently the amount released from the Trust Fund is less than the user fees collected for it.</p> <p>Increase the Harbor Maintenance Tax by 25 percent.</p>	\$2.8 billion over five years
2014 Comprehensive Tax Reform Proposal	Former House Ways and Means Chairman Dave Camp (R-MI) proposed an eight-year investment to support the Highway Trust Fund, as part of his comprehensive tax reform proposal (the Tax Reform Act of 2014).	\$126.5 billion from a one-time tax on accumulated foreign earnings and profits at an 8.75 percent rate; non-cash-accumulated foreign earnings held abroad (income that has already been reinvested in property, plant and equipment) would be retroactively taxed at a lower 3.5 percent rate. The corporation has the option to pay this tax over an eight-year period.

Manufacturers believe in the power of ideas and the ability of innovative leaders to craft new solutions--and we recognize the best options may not have yet been identified.

PRIVATE CONTRIBUTIONS FOR TRANSPORTATION INVESTMENTS

Private-sector support for infrastructure development can be brought to bear with careful planning and thoughtful policy adjustment. Longstanding and new financing options for building infrastructure have grown in popularity. Public-private partnerships (PPPs) can be achieved through a range of federal, state and local activities designed to transfer risk, introduce new innovations and build projects that would otherwise languish because of traditional funding concerns or constraints. PPPs are not suitable for all infrastructure projects but exist to provide another avenue to help fund and deliver needed infrastructure investments.

Taxpayers save money when the private sector assumes risk that it can manage more efficiently than the public sector, and the private sector can often deliver higher-quality service compared to traditional procurement. However, the capability to leverage federal or state investments in infrastructure is based on a core principle that investors must be repaid. Infrastructure project sponsors, namely states and localities, must be willing to raise new fees, rates, tolls and/or taxes or even dedicate a funding stream from a budget line item for a committed period of time to repay the investors.

Federal backstops and incentives to engage in PPPs are critical to the long-term success of private investment in infrastructure. The following options would enhance current infrastructure financing alternatives already available in the open market or through federal agencies, such as the U.S. Department of Transportation's nationally recognized credit assistance program for qualified projects of regional and national significance provided under the Transportation Infrastructure Finance and Innovation Act.

Financing Option	Description	Estimated Loan Capability
Qualified Public Infrastructure Bonds	These would be similar to private activity bonds but would offer more flexibility, potentially carrying all of the same tax-exempt features as municipal bonds so as to attract a broader range of investors, and be available to a broader range of infrastructure projects.	\$1.3 billion over five years
Move America Bonds/Tax Credits	The Move America Act proposed by Sens. Ron Wyden (D-OR) and John Hoeven (R-ND) builds off the previous "Build America Bonds" effort but would allocate tax credits to private-sector purchasers (i.e., corporate taxpayers with tax liabilities) to attract private capital investment to public infrastructure.	\$8 billion investment from the Treasury would support \$226 billion in investment in infrastructure projects over 10 years
Build America Bonds	Created by the 2009 stimulus bill and now expired, "Build America Bonds" provided state and local governments a direct 35-percent subsidy in lieu of the traditional tax-exempt bond.	More than \$180 billion financed public infrastructure projects
National Infrastructure Bank	The bank would offer long-term loans on favorable terms based on Treasury rates. Some proposals have called for financing projects larger than \$100 million, with a focus on regional or national importance, a clear public benefit and backed by an identified revenue stream that repays the loan. Rural projects could receive a set-aside for projects valued at least \$25 million.	Proposals have ranged from \$10 billion to \$25 billion. A \$25 billion appropriation would be expected to support \$250 billion worth of activity in loans, loan guarantees and other sources of credit for public infrastructure.



CREATE: IMPROVING RAIL NETWORKS THROUGH A REGIONAL PARTNERSHIP

The Chicago area handles one-fourth of the nation's freight rail traffic, making the rail network critical to commerce in

the Midwest and across the country. Nearly 500 freight trains and 760 passenger trains pass through the region every day, and demand for freight service continues to grow. With this growth comes an increase in congestion along Chicago's freight corridors, many of which are more than a century old, and can slow trains passing through the city for an average of 30 hours.

In 2003, the federal Surface Transportation Board convened CREATE (the Chicago Region Environmental and Transportation Efficiency Program), a task force made up of local and regional stakeholders and all six of the freight railroads that are active in Chicago. This task force recognized that growing rail congestion threatened the economic competitiveness of the region and businesses across the country. Since then, CREATE has invested billions of public and private dollars to upgrade regional rail infrastructure. The program has completed nearly 30 projects, which together have created increased rail network capacity designed to accommodate the expected doubling of freight rail traffic by 2045. The projects have also decreased travel times for motorists, transit users and passenger rail riders.

In total, the program will invest \$4.4 billion in infrastructure improvements over a 30-year period, which are estimated to generate \$31.5 billion in economic benefits.

Despite the investments already made, much work remains to be done. There are nearly 20 projects that have no identified funding source, including grade separation and tower projects as well as passenger rail corridor upgrades. Another dozen projects are in the environmental review phase but are still years away from completion.



The background of the page features a large, light gray, semi-transparent image of a bridge's steel truss structure. The bridge spans diagonally from the bottom left towards the top right, with its complex network of beams and girders creating a strong geometric pattern. The overall tone is professional and industrial.

STATE AND LOCAL CONTRIBUTIONS

State and local governments are the primary stewards of public infrastructure in the United States. While the federal government provides substantial funding for transportation infrastructure, investment decisions and execution rest with state and local leaders. State and local governments must plan for growth, conduct environmental reviews, set priorities and build consensus among stakeholders and the general public.

In addition to declining infrastructure spending by the federal government, state and local governments have cut back their infrastructure budgets in recent years. Spending by state and local governments on all types of capital declined as a share of GDP from 2.4 percent in the early 2000s to 1.9 percent in 2014.⁵⁵ In response, many states have boldly pursued and passed legislation to provide new funding for local infrastructure needs.

The NAM believes that federal leadership is imperative to turn around the nation's flunking grade on infrastructure. A sustained and focused effort will help reverse a troubling decline and create opportunities to address persistent backlogs and aging infrastructure.





BEYOND TRANSPORTATION: AMERICA'S INFRASTRUCTURE CHALLENGES

After years of decline and squandered opportunities, U.S. transportation infrastructure is in dire need of repair. But transportation is not the only type of infrastructure suffering from serious deficiencies, and it is certainly not the only investment the United States needs to make to establish a strong, competitive edge in the world economy. Several other infrastructure systems—from water, to pipelines and electricity, to broadband—demand immediate attention.

WATER INFRASTRUCTURE

Communities across the country rely on water infrastructure that is approaching the end of its useful life.⁵⁶ The Flint, Mich., water crisis is a stark reminder of what can happen when communities, states and the nation fail to maintain and update fundamental infrastructure systems. Lead leached into public drinking water because of corroded water pipes, poisoning children and adults. Flint is not the only area struggling with aging water systems. According to analysis from the Natural Resources Defense Council, in 2015, more than 18 million people got their water from 5,363 community water systems that exceeded the Environmental Protection Agency's (EPA) limits of lead and copper.⁵⁷ And as many as 240,000 water main leaks every year cause property damage and service disruptions.⁵⁸ Without major investments, breakdowns in water supply, treatment and wastewater capacity are projected to cost manufacturers and other businesses \$7.5 trillion in lost sales and \$4.1 trillion in lost GDP from 2011 to 2040.⁵⁹

ACTIONS REQUIRED:

- Robust expansion of PPPs for drinking and wastewater projects, through programs like the Water Infrastructure Finance and Innovation Act, will bring added resources above and beyond current EPA State Revolving Funds and other programs.
- Eliminating state volume caps on private activity bonds for drinking and wastewater projects will leverage private capital to multiply the impact of federal efforts.
- Stemming the loss of clean water by replacing pipes at the end of their useful life and introducing technology-enabled monitoring for leaks can yield financial savings, while preventing the waste of precious clean water.⁶⁰
- Using new technologies and engineering solutions to reduce pollution from sewer overflows protects water sources, public health and aquatic resources.⁶¹
- Innovative storm water solutions can enhance the resilience of U.S. cities, while also providing new public assets like waterfront parks that also serve as flood protection zones.

ENERGY

The way Americans produce and use energy is changing rapidly, and energy infrastructure needs to keep pace. Most energy infrastructure is privately owned and operated, but subject to federal, state and local regulation, and most regulators have been hesitant to approve investments in resilience.⁶²

The electric power grid delivers a constant flow of energy to the nation's households, buildings and businesses. From powering schools and hospitals, to charging ubiquitous handheld devices, to keeping factories running, lives and livelihoods depend on the reliable delivery of electricity. For many manufacturers, energy is their largest and most important cost. Manufacturers need reliable, affordable, always-on power, which cannot occur without a modern, effective electric grid. Electric utilities have invested hundreds of billions of dollars to build new transmission lines and distribution infrastructure to support a rapidly evolving grid. At the same time, major changes in where and how we generate and consume electricity will require even greater grid infrastructure investments.

In addition, a renaissance in domestic energy production has unlocked vast amounts of oil, natural gas and natural gas liquids, reducing U.S. dependence on imported energy and providing opportunities to export. Domestic production has also kept energy costs low for households and businesses, has driven major new investments in manufacturing sectors that use these fuels as feedstocks and has helped reduce emissions from power plants and industrial sources. Demand for domestically produced oil and natural gas has never been greater and is expected to grow by 40 percent in the next 10 years, driven mostly by the manufacturing and power generation sectors.⁶³

Supply will more than accommodate demand, but instead of coming from tankers docking in coastal ports, oil and gas now come from inland states like North Dakota, Colorado, Texas, Oklahoma, New Mexico, Pennsylvania and Ohio. As a result, there is a geographic mismatch between where the fuels will be produced and where they will need to go. The nation's network of pipelines will need to keep pace. By investing in new pipelines and continuing to update the existing network, we can save consumers money and unleash the tremendous job-creating potential of domestic oil and gas exploration.

ACTIONS REQUIRED:

- Reform existing laws and regulations to facilitate a more transparent, streamlined and coordinated regulatory process for the siting and permitting of all energy delivery infrastructure, including oil and natural gas pipelines, energy transport by rail, energy export terminals and interstate electric transmission infrastructure.
- Promote new energy infrastructure investments as a means of increasing U.S. infrastructure's resilience to climate change by designing for projected future climate conditions.⁶⁴ Regulators should work to more quickly approve smart investments.
- Examine innovative financing mechanisms for new energy infrastructure to encourage private investment.
- Coordinate underground infrastructure work for road, water, gas, electric and broadband to yield construction savings and reduce traffic disruptions from construction work.⁶⁵
- Invest in regions without a developed pipeline network to bring down home heating costs in places like New England and make manufacturers more competitive.

BROADBAND

Broadband infrastructure boosts Americans' quality of life in many ways, from increasing access to health care providers to expanding educational opportunities. It allows businesses to connect with partners and customers faster, and it propels new products to market. Despite these benefits, many households and communities have been slow to adopt broadband. Less than half of households in the bottom quintile of income enjoy high-speed broadband, compared to 95 percent of households in the top quintile. Wider adoption of broadband will address inequality and increase economic opportunity. Creating incentives to invest in broadband infrastructure and maximizing consumer choice in how they connect, without creating a complex mandatory regulatory regime, can help address this challenge.

ACTIONS REQUIRED:

- State and local “dig once” policies that coordinate underground infrastructure work can speed broadband adoption by encouraging broadband providers to deploy fiber infrastructure along roads that are already under construction.⁶⁶
- Concerted policy efforts can help address barriers to broadband deployment in underserved areas. These may include leveraging federally funded investment partnership programs, streamlining regulatory processes across multiple agencies and levels of government and promoting policies that foster the use of cutting-edge communications infrastructure.⁶⁷



LOOKING AHEAD

Modernizing transportation infrastructure would not only jump-start economic growth, spur job creation and enhance the quality of life, but also create momentum that could be harnessed to make progress on other critical fronts, such as water utilities, the electric grid, pipelines and digital infrastructure.

This blueprint from the NAM is intended to amplify an important conversation about infrastructure that has been underway for decades. What's more, it should serve as an urgent call from manufacturers for elected officials to not only act, but act with purpose.



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