

Twenty-five percent of U.S. bridges are classified as being derelict, and an additional 30 percent of roads are classified as being in poor condition, according to the American Society of Civil Engineers.

IS THE DECLINE IN U.S. INFRASTRUCTURE INEVITABLE?

To fully pay for its current road infrastructure, the U.S. would need to increase fuel taxes and vehicle fees by 220 percent. To make a dent in the \$2-trillion infrastructure deficit, the increase would need to be closer to 300 percent.

BY CHRIS BLUMBERG

Since oil prices started increasing in 2003, consumers and businesses have been increasingly feeling the pain in paying for fuel at the pump. This has changed how the U.S. does business.

Oil is the bloodline of the U.S. economy — when its price increases, the U.S. economy declines, as demonstrated by the oil shocks in 1973, 1979, and most recently from 2003 until now. This has started an irreversible trend away from using oil as our primary fuel for transportation and, by extension, from the “suburban” America model that took shape in the post-World War II era.

In addition, federal and state fuel taxes have stagnated over the past two decades,

resulting in overburdened local governments and a declining U.S. road infrastructure. The U.S. fuel tax rate declined from over 35 percent per gallon of fuel in 1993 to 12 percent in 2013.

To fully pay for its current road infrastructure, the U.S. would need to increase fuel taxes and vehicle fees by 220 percent — and, to make a dent in the nation’s \$2-trillion infrastructure deficit, the increase would need to be closer to 300 percent. Although these taxes and fees would increase fleet operation expenses, improperly maintained roads can also lead to increased vehicle maintenance expenses.

But, how did we get here, and what are we moving to?

of the U.S. highway system would connect the cities of the U.S. together by tens of thousands of miles of government-maintained roads. This was exactly during the time that railroads were facing critical financial needs as a result of World War II — the U.S. moved more freight by rail than every other single country put together during the war, leaving its rail system severely damaged from nearly non-stop demands for five years.

As the highway system expanded, more people bought cars and more freight was shipped using trucks, while the rail system began collapsing until the system was overhauled in 1980. Contrary to popular belief, however, fuel taxes were not initially enacted to pay for the highways, although they served as the primary source of revenue for the highway system.

Taxing Fuel

The first state fuel tax was established in 1919 in Oregon, at 5 cents per gallon. By 1939, all 48 states had fuel taxes with a combined average of 3.8 cents per gallon, which was 20 percent of the average cost of fuel at 19 cents. The first federal fuel tax was passed in 1932 under President Herbert Hoover as the U.S. entered the Great Depression, and a 1-cent fuel tax on all sales was enacted to reduce

Establishing U.S. Highways

Before World War II, the primary mode of transportation was mass transit, using buses within the city or trains between cities. While there were some national roads, the U.S. highway system had not yet been created, and roads were not maintained as well as they are today.

The U.S. highway system, which President Dwight Eisenhower championed after seeing Germany’s Autobahn system, was established by the Federal Aid Highway Act of 1956. Over the next 40 years, construction

AT A GLANCE

- The U.S. fuel tax rate declined from more than 35 percent per gallon of fuel in 1993 to 12 percent in 2013.
- Due to fuel tax stagnation, state and local governments have dramatically increased their share of spending for highways.
- The American Society of Civil Engineers gave U.S. road infrastructure a grade of D-plus, estimating that between \$79 billion and \$165 billion needs to be spent each year by 2020 to improve all infrastructure to acceptable status.

the U.S. deficit. This tax would bring the total tax to 4.8 cents out of 19 cents per gallon cost (25 percent). Over the next six decades, this would be increased and tied directly to the U.S. highway system, with the establishment of the U.S. Highway Trust Fund.

By 1993, President Bill Clinton had raised the gasoline tax to 18.4 cents per gallon and the diesel tax to 24.4 cents per gallon, with bipartisan support. At that time, the total tax rate was above 35 percent per gallon of fuel, and this had been funding the expansion and maintenance of the entire U.S. highway system; however, the fuel tax has never been raised since. For a few years, the tax income continued to properly fund the system, with a surplus until around 2000.

Over the past two decades, most states have managed to raise their state fuel taxes, but not by more than 5 cents from where they were in 1993. This has brought the total average tax to 49.9 cents per gallon of gasoline and 55.4 cents per gallon of diesel, compared to an average tax of 47 cents per gallon of gasoline and 54 cents per gallon of diesel in 1993. By 2013, the average tax rate made up 12 percent of the price at \$3.51 per gallon, a decline of more than 23 percent in two decades.

While the cost of fuel has been adjusted based on inflation, fuel taxes have remained nearly the same for the past two decades. This has created huge budgetary problems for states and local governments in having to increase their own fuel taxes and increase transfers from their general funds to their highway funds.

It is also increasing the competition between states for businesses as they compete with each other over fuel prices, with state fuel taxes ranging from 51.6 cents per gallon of gasoline in Pennsylvania to 11.3 cents in Alaska, effective April 1, 2015.

State politicians argue that state taxes shouldn't be raised because it will drive business to neighboring states, and this is true. However, when all 50 states are refusing to raise the tax and tackle the problems, no progress is made.

Declining Driving in the U.S.

The biggest flaw in today's fuel tax is that it is based ultimately on how much you drive and how fuel efficient your car is. Ironically, neither of these were concerns during the decade-long growth period beginning in

LOWEST STATE FUEL TAXES EFFECTIVE APRIL 1, 2015

Alaska	11.3 cents per gallon
New Jersey	14.5 cents per gallon
South Carolina	16.8 cents per gallon
Oklahoma	17.0 cents per gallon
Missouri.....	17.3 cents per gallon
Mississippi.....	18.8 cents per gallon
New Mexico.....	18.9 cents per gallon
Arizona	19.0 cents per gallon
Texas.....	20.0 cents per gallon
Louisiana	20.0 cents per gallon

1993 where little to no improvement in fuel efficiency standards took place, but this all came to an end in 2003.

This can be detected from the total vehicle miles traveled (VMT) and the per capita VMT. The VMT total for 2013 was just below 3 trillion miles, the same as in 2003, and it is trending upward slightly; however, the per capita VMT dropped to 9,402 miles per year, marking the ninth consecutive year of decreases from 2003's high of roughly 10,200 miles — and it is still trending downward.

Not only are people reducing the amount they drive, but the actual number of people owning cars is declining — the number of motor vehicles per 1,000 people dropped from a peak of 820.8 in 2007 to 785.6 in

2011. This decline also appears to be taking place in fleet — the total number of vehicles operated by the Top 300 commercial fleets annually tracked by *Automotive Fleet* declined from 1,422,605 in 2009 to 1,175,621 in 2013.

Average vehicle fuel economy is also increasing drastically along with high oil prices, bringing the U.S. more in line with other countries. From 1990 to 2000, the average fuel economy of vehicles increased from 28 mpg to 28.5 mpg; by 2013, it reached 36 mpg, with federal requirements to hit 45 mpg by 2025. All of this has led to the massive decrease of nearly 2 million barrels of oil per day being consumed, dropping almost 10 percent from a high of nearly 21 million.

With less fuel consumed, and with less funding due to the fuel tax never being raised, it's not hard to see the problem, but how big is the problem? Due to the federal government not raising the fuel tax, the U.S. Highway Trust Fund has been pushed into bankruptcy, requiring transfers from the general fund every year since 2010.

The American Recovery and Reinvestment Act of 2009 directed more than \$100 billion into infrastructure investments, with more than half going into roads and bridges. Since then, every year has required transfers to the highway fund. In 2014, federal transfers amounted to \$18 billion, and are expected to be above \$25 billion in 2015; however, this could be swept into President Barack Obama's \$302-billion GROW AMERICA Act focused on infrastructure building.

In addition, every single state is transferring money from their general funds to their state highway funds. In 2014, Texas transferred \$2.7 billion — nearly 3 percent of its budget — to its state highway fund, while New York transferred \$450 million. With Texas earning \$2.6 billion in fuel taxes, and New York earning \$473 million in fuel taxes, both states would need to double their current fuel taxes just to stop the transfers from general funds. Altogether, the states transferred another \$32 billion from their general funds, essentially the same amount that was earned from fuel taxes.

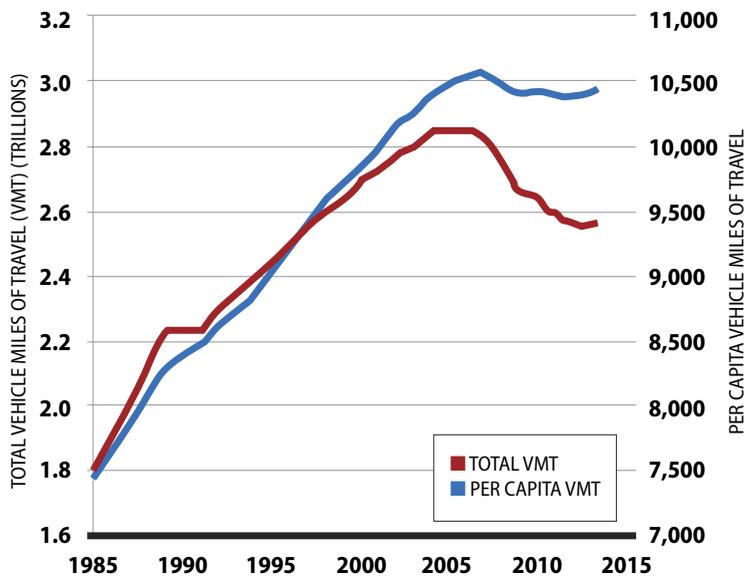
One local government affected by Texas' transferring of money out of its general fund is San Antonio, where budget allocations for streets and infrastructure have increased from 4.8 percent of the budget in

HIGHEST STATE FUEL TAXES EFFECTIVE APRIL 1, 2015

Pennsylvania	51.6 cents per gallon
California.....	47.6 cents per gallon
New York	44.5 cents per gallon
Connecticut	40.9 cents per gallon
Washington	37.5 cents per gallon
Florida	36.4 cents per gallon
North Carolina.....	36.3 cents per gallon
West Virginia	34.6 cents per gallon
Illinois	34.1 cents per gallon
Nevada.....	33.2 cents per gallon

SOURCE: AMERICAN PETROLEUM INSTITUTE

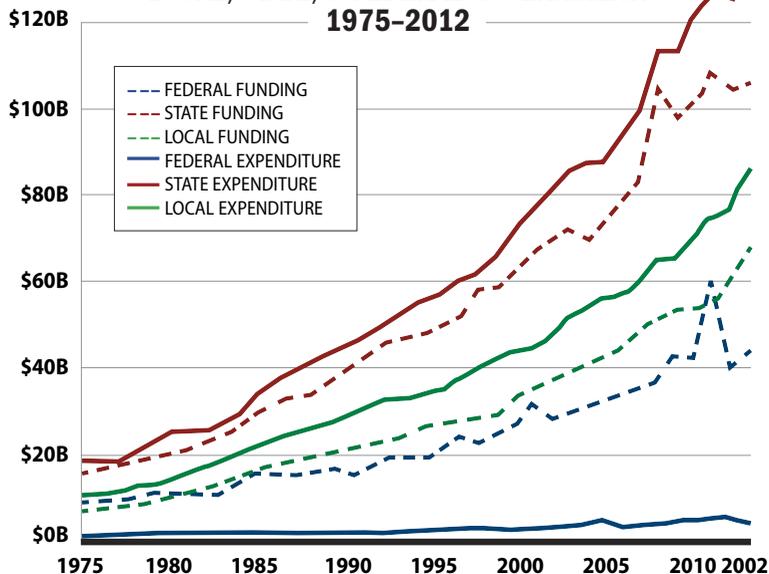
U.S. VEHICLE MILES OF TRAVEL (VMT) TRENDS THROUGH 2013



The per capita vehicle miles traveled (VMT) total for the U.S. decreased from roughly 10,200 miles per year in 2003 to 9,402 miles in 2013.

SOURCE: FEDERAL HIGHWAY ADMINISTRATION AND CENSUS BUREAU

HIGHWAY FUNDING AND EXPENDITURES LOCAL, STATE, & FEDERAL GOVERNMENT: 1975-2012



State and local governments have had to dramatically increase their share of the spending for highways since 1993.

SOURCE: FEDERAL HIGHWAY ADMINISTRATION

1999 to 6.3 percent of its budget (\$105 million) in 2014 — and an additional \$173 million, or 11 percent of the budget, was dedicated to streets in the City's 2014 capital investment plan. In 15 years, the City had to increase its revenue spending from almost 5 percent to nearly 18 percent to build and improve streets.

San Antonio's rate of growth has not

changed much from 1999, as it was still a very fast-growing city then, but the city has had to increase its spending every year to improve bridges and roads that normally would be paid for by the U.S. Highway Trust Fund. Other U.S. cities, particularly Los Angeles, have faced this problem.

State and local governments have had to dramatically increase their share of the

spending for highways since 1993. According to www.mygovernmentspending.com, in 2012 this total spending on roads reached \$230.65 billion, yet the total fuel taxes and other fees collected was roughly \$110 billion. If the roads were to be properly funded by fees and taxes, all fuel taxes and fees would need to be increased by 120 percent right now, bringing the fuel tax closer to \$1.30 compared to its current level of 55 cents. Ultimately, state and local governments have had to divert more than \$120 billion per year that would otherwise be spent on other budget items.

However, this is only part of the problem facing the U.S. road system. In a 2013 report, the American Society of Civil Engineers gave the U.S. road infrastructure a grade of D-plus, meaning it is nearing failure. The report estimated that between \$79 billion and \$165 billion needs to be spent annually by 2020 to improve all U.S. infrastructure to acceptable status, with the majority of this going to roads. Currently, 25 percent of bridges are classified as being derelict, outliving their designed lifetime and facing collapse, and an additional 30 percent of roads are classified as being in poor condition. Even with the increased spending of states and local governments, the massive deficit in road infrastructure remains.

With this, the Obama Administration wants to direct \$300 billion to the highest priority infrastructure projects. This is why toll roads are increasing across the U.S., with 711 additional miles of toll roads having been built since 2003 — and 350 miles of that growth occurred between 2011 and 2013, according to the Federal Highway Administration. In addition, 470,000 total road miles have been added in the U.S. since 1993.

To cover the current costs of its road system, the U.S. would need to raise total revenue by an additional 80 to 160 percent. This includes all vehicle registration fees, fuel taxes, and anything else that is levied against vehicles. To meet this benchmark, the federal fuel tax would need to be increased to \$2.20 per gallon.

Coming Full Circle

As costs of road infrastructure continue to climb, businesses and the federal government are increasingly turning to rail — 2014 is likely to be a record-breaking year

in terms of carloads and tonnage carried by freight rail as well as passengers. Amtrak posted its best year ever in 2014, with 97 percent of total costs covered by passengers, and a nearly 50-percent increase in passengers since 2000.

According to www.mygovernmentspending.com, spending on transit projects has almost doubled in the past 10 years. States are increasingly choosing to upgrade freight lines and get truck traffic off the road, instead of expanding current highways to combat congestion caused by lack of revenue.

With its increased ridership levels, Amtrak has finally been able to plan and replace its entire fleet by 2030, some of which predates 1970. This is helping Amtrak earn more money through increased reliability and increased room.

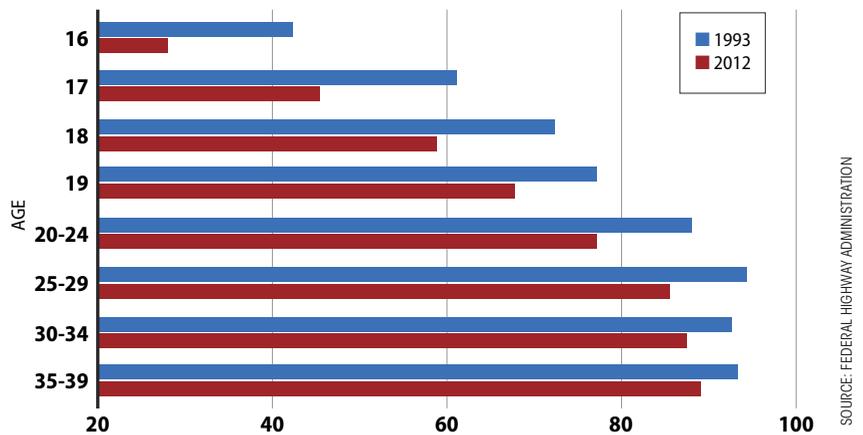
Although railways are facing massive congestion problems as more and more traffic is being diverted to the rails, many companies are increasingly choosing to use rail instead of road. Unlike the roads, rail is an entirely private entity, and record amounts are being spent on rail capital expenditures in the U.S., Canada, and Mexico.

This will only increase as the price of gasoline increases — as it has been until the recent 50-percent drop in the barrel of oil — with the price of transporting by rail being about one-seventh the price of transporting by truck.

The drop in gasoline prices has offered state and federal governments the opportunity to increase fuel taxes. Massachusetts recently passed a law indexing the fuel taxes to inflation, but the law was rejected in November 2014 by a general ballot vote. Congress has several bills in progress calling for an increase in the federal fuel tax over the next few years, with the proposed increases ranging from 12 cents per gallon to 35 cents per gallon. Although these increases won't be enough to cover the costs of the current infrastructure, it's a start.

Many in Congress are simply trying to cover the costs directly associated with the federal government transfers, but, with local and state governments already having to spend billions every year to cover actual needs, the problem is much bigger than that. Raising the fuel tax a small amount won't actually solve anything, since local and state governments have a heavy burden to carry as a result of the federal government not carrying its required load for 20 years.

PERCENTAGE OF LICENSED DRIVERS



The percentage of licensed drivers aged 20-24 decreased from 88.2 percent in 1993 to 77.4 percent in 2012, while the percentage of licensed aged 25-29 declined from 94.4 percent to 85.8 percent over that same time period.

SOURCE: FEDERAL HIGHWAY ADMINISTRATION

Looking at the Bottom Line

With the current political divide in Congress, this problem is being kicked down the road, but soon there will be no roads to kick it down.

Raising fuel taxes will directly increase the amount of people who use mass transportation and drive less, resulting in fewer cars being sold and less fuel being used. Yet, politicians can't raise taxes needed without causing massive backlash from both the people and from their political donors because the fuel taxes haven't reflected reality for more than two decades now.

When the average fuel tax drops from more than 35 percent per gallon of fuel to 12 percent, getting back to that 35-percent benchmark is nearly impossible. At the same time, though, if gasoline prices instead increased gradually over the past two decades, the U.S. wouldn't have had such a huge oil shock due to increased demand for fuel-efficient vehicles (which the government also subsidizes) and reduced consumption for oil.

Local and state governments are increasingly feeling the pressure from having to carry the load of infrastructure spending and diverting funds from other resources or increasing taxes. In the near future, it can be expected the federal government will increase fuel taxes, but if this doesn't take place, the U.S. faces a future where vehicles will increasingly be at a disadvantage

to transportation alternatives.

At current rates, toll roads will become a bigger part of the U.S. infrastructure, and rail will become an increasingly economical option to states and cities to decrease congestion, costs, and pollution.

The transportation industry faces a huge task of trying to hide the massive subsidies it is getting, while millions of Americans cry out for fewer subsidies to all industries. At the same time, increased costs for the transportation industry to pay for the actual costs will drive growth of freight and passenger rail services due to pollution and cost.

Eventually, the federal fuel taxes and vehicle fees will be raised, following the lead of what states and local governments have done over the past two decades. States and Congress are working on bills to boost the transportation industry, but the American people are increasingly showing their discontent with the government funding infrastructure taxes. Even if the American people reject the increases in infrastructure investment, the cost will need to be paid somehow. ■

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