

The United States' Transportation Infrastructure Policy:

The Infrastructure Investment and Jobs Act

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1. Introduction

On November 15, 2021, President Biden signed the Infrastructure Investment and Jobs Act (IIJA). This law was enacted specifically for infrastructure-related content in the American Jobs Plan presented by President Biden in April of 2021.

The American Jobs Plan was an ambitious, large-scale investment plan totaling \$2.3 trillion, with infrastructure at its core, but also containing welfare-oriented democratic policies such as nursing care, housing, and support for small and medium-sized businesses. However, as a result of several months of congressional negotiations, only the parts relating to infrastructure investment—which were easier to reach cross-party consensus—were taken out and put together as the Infrastructure Investment and Jobs Act. Since then, in order to gain the support of Republican lawmakers who are concerned about the worsening deficit, the total investment amount was reduced and then approved by a majority in both the House and Senate.

This paper first introduces an outline of the recently enacted Infrastructure Investment and Jobs Act. Next, after clarifying how this law is positioned in the historical context of US transportation infrastructure policy, I will introduce the Highway Trust Fund—which has played a central role financially— and explain its features and challenges.

2. Overview of the Infrastructure Investment and Jobs Act

2.1 The Spending Side

The law empowers the federal government to spend a total of \$1.2 trillion over five years, of which about \$550 billion will be spent on maintaining and improving infrastructure in the United States. Of the new investment, \$284 billion is related to transportation. Given that the total infrastructure investment portion of the American Jobs Plan was \$621 billion, it can be said that the scale has been significantly reduced to less than half of the originally-anticipated amount.

Individual spending categories, with the exception of some new systems, add to the existing subsidies provided by the federal government's budget. Table 1 shows the comparison between the investment amount for each spending category and the investment amount originally outlined in the American Jobs Plan. Spending categories other than transportation-related ones include broadband, electric power, and water services, but this paper will focus on the transportation-related components.

Table-1 Transportation-related Spending Categories and Investment Amount

Transportation-related Expenditure Categories (Unit: Millions USD)	Infrastructure Investment and Jobs Act	American Jobs Plan
(1) Roads, Bridges & Major Projects	1,100	1,590
(2) Transportation Safety	110	200
(3) Public Transportation	390	850
(4) Passenger & Freight Rail	660	800
(5) Airports	250	250
(6) Ports	170	170
(7) Electric Vehicles	150	150
(8) Reconnecting Isolated Communities	10	250

Source: Created by the author based on the White House presentation materials

In some categories, the amount has decreased significantly from the original plan, the American Jobs Plan. This is simply due to the fact that it was necessary to reduce the entire spending scale (reduce the financial deficit that accompanies the enactment of this law) in order to obtain the approval of some Republican lawmakers needed for the bill to pass. Qualitatively, there are no major changes from what was outlined in the American Jobs Plan. Each expenditure item will be explained below.

“Roads, Bridges, and Major Projects,” the most emblematic category in the context of aging infrastructure in the United States, has been significantly reduced from \$159 billion in the conceptual phase to only \$110 billion. Nonetheless, the Biden administration has emphasized its significance as it was able to cover \$40 billion in bridge repair costs, the largest investment ever in bridges. The “Major Projects” following “Roads and Bridges” is intended to support large-scale projects that cannot be handled by the existing grant programs. The Hudson River Tunnel Project, which connects New York and New Jersey, will receive \$8 billion out of the \$16 billion total budget for “Major Projects.”

The investment in “Public Transportation” has also been

significantly reduced from the initial \$85 billion to \$39 billion during the congressional negotiation process. Due to the structure of the grant program, this category is easily allocated to large cities, and in general, large cities have many supporters of the Democratic Party. For this reason, it is speculated that it was the first target to be whittled down during the political negotiation process. The budget allocates funds for the modernization of railcars and vehicles and facilities for urban railways and bus systems, the improvement of access for people with disabilities, and the development of vehicles and facilities for expanding bus routes.. In addition, a budget for the grant program to convert buses and ferries to zero or low emission vehicles/vessels is included.

“Passenger and Freight Railroads” is a budget category for railroad operators that provide cross-state transportation services. Amtrak, which handles passenger transportation, comprises the majority of these operators. President Biden, nicknamed “Amtrak Joe,” noted that despite its reduction from the amount stipulated in the American Jobs Plan, the \$66 billion allocation is the largest investment in Amtrak since its founding 50 years ago. Amtrak has a large number of poorly maintained cars and facilities due to lack of funds, but a subsidy of \$22 billion has been allocated for maintenance costs. In addition, up to \$24 billion has been allocated for the modernization of the Northeast Corridor that connects Washington DC to Boston. Another \$12 billion is included in federal and state partnership grants for intercity rail services, including high-speed rail. Although there is a subsidy for the development of high-speed railways, projects that are mainly maintained by private companies—such as the bullet train project in Texas—are not expected to be covered, and projects promoted by the state of California are envisioned.

The funding amounts for “Airports” and “Ports” have not changed from the concept stage. In both cases, the allocations for the existing auxiliary programs have been increased. For airports, the Airport Improvement Program will be used to improve airport facilities and air traffic

control facilities, and for ports, funding will go toward the renewal and improvement of port facilities and waterways.

The “Electric Vehicles” category includes \$7.5 billion in funding for plug-in chargers to build a network of charging stations for electric vehicles. President Biden has set a goal of 50,000 charging stations by 2030, however, in light of this goal, there is an analysis that this investment amount may not be enough. In addition, \$7.5 billion has been allocated to support the introduction of electric school buses.

"Reconnecting of Isolated Communities" is a fund for improving roads and parks in order to reconnect communities divided by highways— areas which have historically disproportionately affected racial minority groups. The investment amount has been significantly reduced from the concept stage to \$1 billion, but by leaving this item—despite the amount— it is speculated that the administration has found progressive and minority support.

2.2 The Revenue Side

The American Jobs Plan sought to cover the cost of new investment in infrastructure by returning the corporate tax rate to the previous level before the tax cut implemented by the Trump administration in 2017 (raising it from 21% to 28%). From the beginning, not only the Republican Party but also some members of the Democratic Party voiced opposition to this, making it a major issue. Because of this, it was removed from the bill. As a result, the Congressional Budget Office estimated that the enactment of the law would result in a \$256 billion deficit over the next decade.

3. U.S. Transportation Infrastructure Policy's Place in the Infrastructure Investment and Jobs Act

Next, I would like to examine how this Infrastructure Investment and Jobs Act is positioned in the context of US transportation infrastructure policy. In the United States, urban transportation was originally considered the responsibility of state and local governments, and the federal government had not been involved in policy. Then the Urban Mass Transportation Act of 1964 was enacted,

and for the first time, federal funding was provided for the development of regional public transportation nationwide. The Urban Mass Transportation Act, commonly referred to as an authorization act, authorized the federal government with the spending authority to promote the development of transportation infrastructure over multiple years. Since then, authorization acts for the development of transportation infrastructure, which usually have a planning period of approximately 4 to 6 years, have been continuously enacted, and the Infrastructure Investment and Jobs Act is positioned at the end of this history.

Table 2 summarizes the most recent authorization acts since 1992. As you can see, successive authorization acts have been enacted seamlessly, and if it is difficult to enact a new one due to the situation in Congress, the existing one can be extended.

Table-2 The Latest Transportation-related Authorization Bills

The Latest Transportation-related Authorization Bills	Target Period	Total Investment (in billions)	Single-year investment (in billions)*
Intermodal Surface Transportation Efficiency Act (ISTEA)	1992-1997	\$155.3	\$31.06
Transportation Equity Act the 21 st Century (TEA-21)	1998-2003	\$218	\$43.6
TEA-21 Extension	2004		
Safe, Accountable, Flexible, Efficient Transportation Equity Act- A Legacy for Users (SAFETEA-LU)	2005-2009	\$285.4	\$71.6
SAFETEA-LU Extension	2010-2012		
Moving Ahead for Progress in the 21 st Century (MAP-21)	2013-2014	\$105	\$52.5
Fixing America’s Surface Transportation Act (FAST)	2015-2020	\$305	\$61
FAST Extension	2021		
Infrastructure and Investment and Jobs Act (IIJA)	2022-2026	\$550	\$110
*Single-year investment amount is an estimated value obtained by dividing the total investment amount by the number of years covered.			

Source: Created by the author from various published materials

Although the FAST Act came into effect from 2015 to 2020, no successive act was able to be enacted due to the outbreak of the coronavirus pandemic and the chaotic congressional situation in the latter half of the Trump administration. For this reason, it was the plan of both parties to simply extend the FAST Act for one year and then formulate (decide) a successive law based on the results of the presidential election which was scheduled to take place during that period. In other words, it can be said that the new authorization bill starting in 2022 was planned in advance.

In this sense, it seems somewhat exaggerated to describe the enactment of the Infrastructure Investment and Jobs Act as a "historical achievement" in the history of US transportation infrastructure policy. Rather, it is simply a continuation of a long series of authorization acts, which have been passed down for more than half a century. At first glance, the scale is the largest ever, as the Biden administration has touted. However, if you limit the scope to the transportation field and exclude broadband and electric power, it comes out to be \$284 billion in 5 years, or \$56 billion per year, which is not many times larger than the past authorization acts.

4. Scale Verification

How much, then, will the budget amount in the transportation field actually increase on a single-year basis from this Infrastructure Investment and Jobs Act? I will delve into this question below.

Here, I will examine the categories of "Roads and Bridges" and "Public Transportation" that are budgeted through the Highway Trust Fund. The Highway Trust Fund is a so-called road-specific financial resource funded by a gasoline tax. Founded in 1956, the federal gasoline tax now has a tax rate of 18.4 cents per gallon, of which about 84% is put toward Highway Account and about 16% is put

toward the Mass Transit Account.

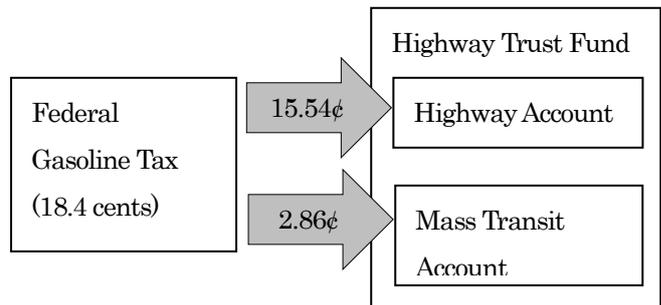


Figure 1: Federal Gasoline Tax and Highway Fund

Most of the Highway Account will be included in the Federal Highway Administration's budget and will be used to fund highway maintenance costs.

The Mass Transit Account will be included in the Federal Transit Administration (FTA) budget and will be used to fund subsidies that support public transportation across the country.

Approximately 80% of the FTA budget is calculated based on objective criteria such as population, population density, and service supply, and is used for "formula subsidies" that are widely distributed to public transportation companies nationwide. The remaining 20% is discretionary and can be used to subsidize relatively large-scale projects to build or expand railways and BRTs. Currently, about 10 such projects have been selected, including the extension of the Los Angeles subway and the construction of the Maryland Purple Line.

With the enactment of the Infrastructure Investment and Jobs Act, the budget for the 2022 fiscal year (October 2021 to September 2022) allocated to these subsidies will also be increased. The table below shows the amount of increase and the rate of increase compared to the budget amount for the 2021 fiscal year, for which the FAST Act, which is the predecessor of the Infrastructure Investment and Jobs Act, was in effect.

Table 3: Budget increase rate for each account of the Highway Trust Fund

Budget Amount (Unit: Millions of USD)	2021 (FAST Act)	2022 (IIJA)	Increase Amount	Rate of Increase
Highway Account	45,270	59,052	13,781	<u>30.4%</u>
Mass Transit Account	9,924	13,269	3,346	<u>33.7%</u>

Source: Created by the author based on the 2021 budget and the contents of the Infrastructure Investment and Jobs Act

With the enactment of the Infrastructure Investment and Jobs Act, the budgets for the Highway Account and the Mass Transit Account are expected to increase by about 30% and about 34% from the previous year, respectively. These budget levels will be set for the next five years.

It is difficult to evaluate what a 30% budget increase for 5 years will mean, but when it comes to support for public transportation, that business sector nationwide has been majorly impacted by the pandemic, and the future is still uncertain. I therefore have to be skeptical about the impact of this increase in subsidies on "improving the quality and service standards of public transportation in the United States."

5. U.S. Transportation Infrastructure Policy

Challenges: Fuel Tax and the Highway Trust Fund

5.1 Fuel Tax and the Highway Trust Fund

Authorization bills are at the core of US transportation infrastructure policy, and the Highway Trust Fund has supported them financially. It can be said that the authorization bills have served as vehicles for withdrawing surplus funds from the balance of trust funds. However, this authorization bill method faces major challenges.

In recent years, there have been concerns and indications

that the balance of the Highway Trust Fund will be exhausted. This is because fuel tax revenues have decreased due to improvements in the fuel efficiency of cars, and so annual expenditures have continued to exceed that revenue. According to the Congressional Budget Office (CBO), fuel tax revenues were used to cover expenditures until 2008, and then between 2008 and 2019, a \$144 billion budget was transferred from the general account to trust funds. Of this amount, \$70 billion comes from the FAST Act, the authorization bill enacted in 2015. Under the Infrastructure Investment and Jobs Act, the appropriate amount of funds will be transferred from the general account to the trust fund. The authorization act functioned as a device to spend the funds that reside in the trust fund, but in recent years there is no longer a sufficient balance, and the expenses are being covered by funds transferred from the general account. With the full-scale expansion of electric vehicles, it was going to be necessary to review the fuel tax based revenue system sooner or later, but without waiting for that review, the balance of revenue and expense for the Highway Trust Fund has already collapsed. A drastic reform of the revenue structure is now needed.

5.2 Ways to Reform

Needless to say, the ways to reform are to increase revenue or reduce spending. The first way to increase revenue is to simply raise the fuel tax. The current federal fuel tax rate of 18.4 cents per gallon has remained unchanged since 1993, regardless of how gas prices have increased during this period. There is a plan to adjust this tax rate based on the inflation rate over the last 30 years, which would bring the current tax rate to 33 cents per gallon. According to the Congressional Research Service (CRS), a 1 cent increase in the fuel tax is estimated to generate \$1.7 billion to \$1.8 billion annually in trust funds. A fuel tax of 33 cents per gallon would increase revenue by \$25-26 billion.

On the other hand, fuel consumption is already declining year after year with the advent of hybrid and electric vehicles, and according to the CRS, annual travel distance

is expected to increase by only 1% per year over the next 20 years. In the long term, a simple fuel tax hike is not the solution. In addition, many people in rural and poor areas have no choice but to rely on gasoline-powered vehicles for the time being, while urban and wealthy people are expected to proactively and primarily use electric vehicles, so it raises the issue of taxation inequity between electric vehicle users and gasoline vehicle users.

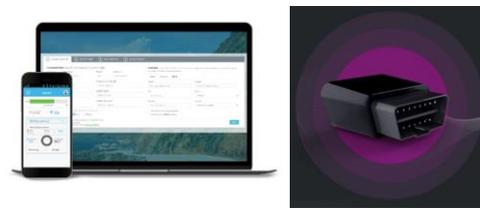
The current fuel tax is levied according to the amount of consumption per gallon, but there is also a proposal to tax fuel according to the retail price of gas. This makes it possible to increase fuel tax revenue as fuel prices rise, regardless of the decrease in gas consumption. However, if tax revenue depends on the increase and decrease of crude oil prices, this could prove to be a difficulty in terms of tax revenue stability. There is also the above-mentioned problem of taxation inequity, since there are users who cannot switch to electric vehicles.

The Natural Resources Defense Council (NRDC), an environmental protection group, is proposing a plan to tax electric vehicles while leaving the fuel tax amended. First, the fuel tax will be linked to both the inflation rate and the fuel consumption of the whole country so that the tax rate will rise even as gas prices and the country's fuel consumption decrease. On top of that, electric vehicles will be taxed on their annual electric power consumption based on the fuel efficiency of gasoline-powered vehicles.

The most popular idea for applying a road use tax system in the future is to abolish the fuel tax and instead introduce a method of charging for car mileage. By utilizing a GPS function, the mileage of each vehicle could be captured and measured, and a tax levied according to the distance driven. In addition to the technical and cost issues of collecting and managing a huge amount of GPS data, it's been pointed out that this method poses problems of privacy invasion for collecting and storing GPS data.

In the state of Oregon, which has introduced a mileage tax in advance, this point is emphasized in their

explanation on their website stating, "The GPS function is used only to measure mileage, and your location information is not specified." In addition, there are three options for mileage measurement and payment methods: 1) immediate payment using smartphone application (with GPS function), 2) post-payment using dedicated on-board unit (with GPS function), and 3) post-payment using dedicated on-board unit (without GPS function). It can be seen that the method without GPS function is purposely prepared in consideration of the concerns about invasion of privacy. All dedicated on-board units are connected to on-board diagnostics (OBD), and payments are made after the fact with a credit card or other method.



Left: Smartphone app used by Oregon

Right: Dedicated on-board unit used by Oregon

Source: Oregon's OReGO (<https://www.myorego.org/get-started/>)

As you can see, a mileage tax has already been introduced and tested in some states, but it will require a considerable amount of time to implement it at the federal level, including fostering consensus among car users.

Lastly, one other option for reforming the Highway Trust Fund is to reduce spending. However, looking back on the characteristics and history of the U.S. transportation infrastructure policies mentioned so far, it seems least likely that future presidents and Congress will take the path of abolishing the authorization bill system or significantly reducing spending.

Fuel tax reform is, in other words, Highway Trust Fund reform, which will shape the new transportation infrastructure policy of the United States. I would like to continue following discussions on this topic among the administration and Congress in the future.