

Fixing Illinois Infrastructure with User Fees

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Illinois legislators are currently considering a significant increase in the state's gasoline excise tax to pay for the state's infrastructure needs. Chicago mayor Rahm Emanuel has proposed to increase the tax from its current 19 cents to as much as 49 cents. The Illinois Economic Policy Institute has suggested an increase in the range of 85 cents to a dollar may be needed.¹

"There's a universal understanding that infrastructure is crumbling across the state," says Governor J.B. Pritzker.² Yet Illinois' highway infrastructure is actually in fairly good shape. The transportation system with serious infrastructure problems is urban transit. Rather than make transit riders pay for the infrastructure they use, some Illinois leaders see auto drivers as mobile piggy banks that they can break open to grab the funds they need to restore transit infrastructure despite the fact that the importance of transit to Illinois and even Chicago residents is steadily diminishing.

The real problem with Illinois' transit infrastructure is not that it is worn out but that it is obsolete and no longer successfully serves the needs of the typical state resident. Outside of the Chicago Loop, in fact, transit is used by only a small minority of commuters and an even smaller minority of other travelers. Instead of taxing auto users tens of billions of dollars in order to restore and maintain this infrastructure, Illinois should transition to other, lower-cost transit modes that can be funded largely by their users.

Illinois Gas Taxes

Illinois residents already pay some of the highest gas taxes in the nation: the tax collected by state and local governments on the average gallon of gasoline as of January, 2019 was more than 52 cents.³ Yet little more than a third of those taxes pay for the roads gas purchasers drive on—one of the lowest rates in the nation.

In 2016, the state of Illinois collected about \$1.3 billion in gas taxes, nearly \$400 million or about 30 percent of which went to subsidize transit. It also collected \$1.4 billion in vehicle registration fees, of which another 30 percent or \$400 million went to transit.⁴ Add that to the fact that about 20 percent of the \$1.0 billion in federal gas taxes paid by Illinois drivers goes for transit and Illinois auto owners subsidize transit to the tune of about \$1 billion a year.⁵

On top of the gasoline excise tax, Illinois gasoline purchasers paid sales taxes of 6.75 to 10 percent, depending on where they bought their gas, and little if any of that went for roads. A number of other taxes went for such things as "environmental impact fees."⁶ In addition, the federal tax of 18.4 cents a gallon includes about 14.4 cents that is spent on roads. Out of the 57 cents per gallon

being collected today (when base gas prices are around \$2.48 a gallon), less than 28 cents is dedicated to roads while more than 9 cents goes to transit.

The Condition of Illinois Highways

Although many people claim that Illinois roads suffer from “crumbling infrastructure,” by two important measures the roads are in good shape and getting better. First, only 2,303 bridges, or less than 9 percent of the total, were considered *structurally deficient* in 2017.⁷ This is a substantial reduction from the 4,494 highway bridges, or 18 percent of the total, that were classified structurally deficient in 1992.⁸

“Structurally deficient,” by the way, doesn’t mean that a bridge is in danger of collapsing or poses a safety risk. Instead, it only means is that the cost of maintaining a bridge is greater than it should be and, in some cases, the load limits for the bridges have been reduced.⁹

No American bridge has collapsed due to lack of maintenance since 1989. The 2007 collapse of a bridge in Minneapolis, for example, was due to a construction flaw in the bridge that could not have been corrected or even detected with better maintenance.¹⁰ The 2013 collapse of a bridge in Washington state was due to an oversized load attempting to cross the bridge.¹¹ Yet both of these collapses have been cited to justify more infrastructure spending.

The second measure showing that Illinois roads are improving is a standardized *roughness index* used by the Federal Highway Administration to grade highways. According to this index, Illinois roads are 35 percent less rough today than they were in 1995. The roughness of rural interstate freeways has declined by 65 percent, while urban interstate roughness has declined by 48 percent. Other roads averaged about 20 percent smoother in 2017 than in 1995.¹²

These improvements show that, while Illinois roads and bridges aren’t perfect, the state has made considerable progress towards fixing the problems that existed two decades ago. The state has clearly been able to keep the state’s roads in good repair without the large increases proposed by Emanuel or the Illinois Economic Policy Institute.

The Condition of Illinois Transit Infrastructure

While highway infrastructure is in decent shape, transit infrastructure is not. A recent article in the *New York Times* praised the Chicago Transit Authority for doing more to rehabilitate its lines than New York’s Metropolitan Transit Authority.¹³ Yet there is still much work to be done. In 2014, the Regional Transportation Authority estimated that it needed to spend \$3.6 billion a year to rehabilitate CTA, Metra, and Pace facilities and to meet “normal reinvestment needs” over the following ten years.¹⁴ Since then, it has spent just a small fraction of that amount.

The Illinois Economic Policy Institute estimates that the state’s transit infrastructure needs \$41 billion to bring it to a state of good repair. By comparison, the same report estimates highways need only \$10 billion.¹⁵ In other words, what Emanuel, the Institute, and others want is to divert

most of the increase in fuel taxes to transit so that Illinois auto drivers will increasingly subsidize Chicago transit systems.

Though transit systems require four times as much money, they do far less work than highways. In 2016, Chicago-area transit carried people about 4 billion passenger miles.¹⁶ Chicago-area highways moved about 110 billion passenger miles.¹⁷ This means transit only moved about 3.6 percent as many passenger miles as roads. In addition, trucks move about 90 billion ton-miles of freight on Illinois highways each year, while transit infrastructure moves virtually none. Statewide, transit carries only about 2 percent of passenger travel and 0 percent of freight.

“Illinois transit infrastructure” is effectively the same as “Chicago transit infrastructure,” as virtually all transit infrastructure in the state is in the Chicago area. The only exceptions are bus servicing facilities and an extension of the St. Louis light-rail system into East St. Louis, which is too new to have much of an infrastructure backlog. Thus, in suggesting that Illinois auto drivers should pay higher taxes, more than 80 percent of which would go for 3.6 percent of Chicago-area travelers, the Illinois Economic Policy Institute is advocating a large wealth transfer from downstate residents (as well as Chicago-area auto users) to a few Chicago-area transit riders.

Transit Ridership Trends

Transit ridership is declining nationwide in the face of new and better ways to travel. In the past four years, Chicago Transit Authority ridership has declined by 9.0 percent, Metra by 8.0 percent, and Pace by 13.1 percent. Ridership for all agencies headquartered in Illinois has declined by 9.2 percent. In addition, the South Shore line has declined 6.0 percent and MetroLink fell a stunning 22.8 percent.¹⁸

There are several reasons for this decline, including continuing low fuel prices and the growth of ride hailing. But one little-noted reason is growing auto ownership among low-income people. In 1960, fewer than 3 percent of American households had three or more cars, while nearly 22 percent had no cars. Today it is almost the reverse: 21 percent have three or more cars, but fewer than 9 percent have no cars.¹⁹

The growth of vehicle ownership has slowed since 1980, but today there are so few people who don't have access to a car that even a small increase in vehicle ownership can have a big impact on transit. One California study concluded that “the most significant factor” in recent declines in transit ridership “was increased motor vehicle access, particularly among low-income households.”²⁰

One result is that transit is increasingly used by relatively high-income people. In 2017, in both the Chicago area and in Illinois as a whole, more people commuted by transit who earned more than \$75,000 a year than those who earned under \$25,000 a year.²¹ While the median income of all workers in Illinois was under \$40,000 a year, the median income of transit commuters was more than \$45,000 a year.²² The median income of transit commuters in the Chicago urban area,

who would receive most of the transit subsidies from gas taxpayers, was \$46,600, while the median income of auto commuters in Illinois, who would be paying the subsidies, was \$39,530.²³

Low-income workers, like everyone else, have excellent reasons for preferring auto driving over transit. According to the University of Minnesota's Center for Transportation Studies, the typical resident of the Chicago area can reach more than twice as many jobs in a 30-minute auto drive as a 60-minute transit trip (769,000 vs. 343,000), and almost as many jobs in a 20-minute auto drive (303,000) as a 60-minute transit trip.²⁴

Because Chicago's transit is a hub-and-spoke system, it mainly serves commuters who work in downtown Chicago, and those tend to be high-income workers. In 2010, 57 percent of downtown Chicago commuters took transit to work.²⁵ But transit doesn't work well for other areas: only 5.5 percent of Chicago-area commuters who work outside of downtown used transit.²⁶ For example, more than 210,000 jobs surround O'Hare Airport, which nominally has excellent transit service. But fewer than 5 percent of those workers commute by transit.²⁷

Rail Transit: Obsolete and Expensive

One of the reasons why rail transit systems in Chicago and so many other cities are in such dire need of repair is that rail transit is extraordinarily expensive. Most rail transit was rendered obsolete in 1927 with the introduction of the Twin Coach bus. This was the first bus that was both less expensive to buy and less expensive to operate than streetcars.²⁸

Within ten years, more than 500 transit companies converted their streetcar lines to buses. After World War II, the newly created Chicago Transit Authority ordered 600 new streetcars, but then quickly realized that buses were far more efficient. The agency soon scrapped or converted most of the streetcars to rapid-transit cars and replaced them with buses. CTA even replaced some of the elevated lines with buses.²⁹

Although a single bus can't carry as many people as a rapid-transit train, buses can operate much more frequently. This allows buses to move more people per hour than almost any rail line. Most rail lines can only run 20 to 30 trains per hour, but busways can move hundreds of buses per hour.

For example, Istanbul's Metrobus system can move 30,000 people per hour in each direction.³⁰ Actual ridership is as high as 23,000 people per hour in the peak direction.³¹ By comparison, the Chicago L can move only about 14,400 people per hour in each direction.³² An even higher capacity bus system is Bogota's TransMilenio, which can potentially move 48,000 people per hour (and actually does move as many as 43,000 per hour).³³ This is more than the New York City subway, which is probably the highest capacity rail transit system in America.³⁴

Manhattan doesn't have enough surface room for a bus-rapid transit system like Bogota's, but Chicago can probably substitute bus-rapid transit for some if not all of its rail lines.³⁵ The main

argument against buses is that buses, unlike trains, can be impeded by congestion. But why should wealthy Metra riders get to bypass congestion in heavily subsidized trains while everyone else is stuck in traffic?

There are ways for buses to avoid congestion. For example, the express lanes of the Dan Ryan Expressway could be converted to high-occupancy/toll lanes, which would accomplish three goals: giving people willing to pay a toll a way to bypass congestion; relieving congestion on the remaining lanes; and providing an uncongested route for buses that would replace the Dan Ryan rail line.

Fewer than 6 percent of Illinois commuters rely on rail transit to get to work while 80 percent drive to work and 4 percent take buses.³⁶ Instead of spending the billions of dollars to rehabilitate rail lines for the 6 percent, applying that money to projects that could relieve congestion for the other 84 percent would also make it possible for better bus service to replace the rails for the 6 percent.

User Fees: A Better Way of Paying for Transportation

Another reason why Illinois highways are in better shape than its transit infrastructure is that highways are largely paid for out of user fees. User fees provide a feedback relationship that encourages good maintenance: highway managers know that users will use the facilities more (and thus pay more fees) if they are in good shape.

By comparison, transit is mostly paid for out of tax dollars. In 2017, Chicago transit fares covered only 38 percent of operating costs, leaving nothing for maintenance or capital replacement.³⁷ Since tax dollars are allocated politically, it is too easy for politicians to defer maintenance, thus freeing up money for more high-profile spending programs.

User fees provide better feedback in other ways as well. They signal users which resources are more costly to use and signal producers where the demand exists to support expansion. These signals are diluted when programs are funded largely out of tax dollars.

While gas excise taxes are a user fee (at least that portion that is dedicated to roads), they are imperfect in at least four ways. They fail to automatically adjust for inflation; they don't adjust for more fuel-efficient (or electric) cars; they are mostly collected by the states and leave local governments forced to use general funds to maintain their roads; and they do nothing at all about congestion.

Tolls are an improvement, especially if they are variable tolls that can prevent congestion. A unique aspect of highways is that their throughput declines at slow speeds. At 50 miles per hour, a typical freeway lane can move about 2,000 vehicles per hour; at 25 it can only move 1,000; at 15 fewer than 500.

This means that once a lane gets congested, it can take hours for the congestion to go away: even if demand falls below 2,000 vehicles per hour, a lane that can only move 1,000 vehicles per hour will remain congested. By preventing flows from rising about 2,000 vehicles per hour, congestion tolls can double throughput when compared with allowing speeds to slow to 25 miles per hour.

Some people say that congestion tolls prices people off the roads. In fact, by doubling throughput, congestion pricing effectively tolls people *onto* the roads, greatly increasing road capacities during rush hours.

Even better than tolls are mileage-based user fees. These not only solve the fuel-efficiency problem, they make it possible for all road owners—whether federal, state, local, or private—to charge for the use of their roads, easily ending all highway subsidies. Since they can easily vary by levels of traffic, they can eliminate congestion from all roads, not just toll roads, through congestion pricing. Mileage-based fees are potentially the perfect user fees.

The state of Oregon is conducting a large-scale experiment with mileage-based user fees, and the writer happens to be a volunteer in the experiment. The state has insured that the privacy of users is guaranteed. Oregon already has a weight-mile fee for heavy trucks, so different classes of vehicles pay fees proportional to the amount of road space they use and damage they do to the roads. The long-term goal for Illinois and other states should be to abolish the gas tax and replace it with mileage-based user fees.

Transit systems, of course, already charge user fees through various fare collection systems. Yet transit is heavily subsidized, diluting the benefits created by user fees. Having transit rely more on user fees and less on tax dollars would make transit systems more responsive to changing user needs. In some cases, fares would have to increase.

In the long run, it is likely that most transit will be replaced by driverless ride-hailing systems, which is one more reason not to spend huge amounts of money rehabilitating rail systems. In the short run, if some rail transit lines are unable to survive on user fees due to high maintenance costs, those lines should probably be replaced by buses.

While some worry that reducing transit subsidies will harm low-income people, the solution to this is simple: offer transportation vouchers to low-income people that can be used on any common carrier, whether public transit, taxis, ride hailing, intercity buses, Amtrak, or airlines. Such targeted subsidies insure that transit does not end up transferring money from the relatively poor to the relatively well off.

Conclusions

Instead of doubling (or more) the gasoline excise tax, Illinois should:

1. End diversions of gas taxes and vehicle registration fees to transit. Under the user-fee principle, fuel excise taxes, tolls, mileage-based user fees, and vehicle registration fees should be dedicated solely to highways, roads, and streets.
2. The long-run solution to deficiencies with the gas tax is to replace the tax with mileage-based user fees, which fixes the problem of increasingly fuel-efficient (and electric) vehicles as well as making it possible to increase rush-hour throughputs via congestion pricing.
3. Instead of spending tens of billions of dollars rehabilitating Chicago's rail transit lines, the Regional Transportation Authority should consider replacing rail lines with buses on a case-by-case basis.
4. The state should consider using some or all of the money that might otherwise have been spent on rehabilitating rail lines on projects that can relieve congestion for everyone.

Notes

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22. *American Community Survey 2017*, table B08121.
23. Ibid. Median income of auto commuters is a weighted average of
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30. Anil Yazici and Camille Kamga, “Bus Rapid Transit Implementation in Istanbul, Turkey,” presentation at 2014 Multimodal Operations Conference, Washington DC, tinyurl.com/y67yiw79.
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