

# Mass Transit Infrastructure

Section 8

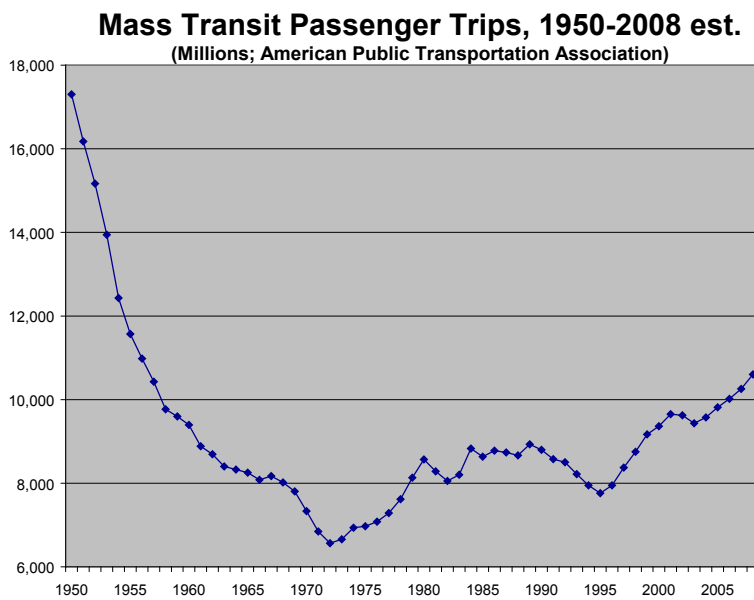
With the exceptions of Boston, Chicago, New York, and perhaps San Francisco, mass transit has traditionally been regarded as a service used primarily by the poor, immigrants, and others on the fringes of society. That perception changed dramatically in 2008. As gasoline prices crossed the \$4.00 mark, middle-class commuters left their cars for bus and rail lines. Cities with long-established public transit systems saw their ridership go up 5 percent or more over the prior year. But the biggest surges—10 percent to 15 percent—occurred in metropolitan areas of the South and West where the driving culture is strong and bus and rail lines are more limited.<sup>1</sup>

Increased transit ridership has pushed many cities to a “tipping point” at which adding new mass transit infrastructure makes economic sense. It would be wrong to say that 2008 marked the start of a new trend, however. Public transit ridership has been increasing for decades:

Americans took more than 10.3 billion trips on mass transit in 2007, the industry’s best year since 1957, and a 34-percent increase from the 7.7 billion trips reported in 1995. Data for the first three months of 2008 indicate a 3.3 percent rise over the same period in 2007.<sup>2</sup>

There is plenty of upside, however. In the 2000 Census, just 4.7 percent of people said they used public transit to get to work. Mass transit represents only 2 percent of daily trips in auto-clogged Southern California.

New York is the only city in America in which more than half of the workforce uses mass transit. In most cities, even if the share of trips using mass transit were to triple, the drop in highway congestion would soon be overwhelmed by population growth.



## The Public Wants It

When given a chance to vote, the public usually supports new infrastructure. For the past seven years, ballot measures to fund new mass transit systems or to expand existing ones have passed about 70 percent of the time—although some of the electoral triumphs involved second attempts that the voters initially rejected. “Often, if that same [ballot] question comes back, it meets with more success,” explains Art Guzzetti, vice president of the American Public Transportation Association (APTA), adding that “once you get a system in place in a community and people can see the benefits, they are inclined to support extensions.”<sup>3</sup>

While new infrastructure projects are voted in, the taxes needed to maintain and operate them are languishing. A weak economy has reduced local sales tax receipts available to support mass transit.

The largest single funding source—the federal gasoline tax—is also down, the result, ironically, of the stampede to mass transit from private automobiles. At the same time, the costs of fuel and power used by mass transit systems are about three times those of four years ago. Rising steel prices have pushed transit infrastructure costs up more than anticipated.

So while the public’s desire for mass transit systems is up, the reliability of the infrastructure is on the decline. Sixteen percent of the buses in the nation’s bus fleet are operating beyond their expected service lives, and 54 percent will reach the end of their expected service lives over the next six years, according to a 2007 investment analysis. Corresponding figures for the nation’s railroad rolling stock are 35 percent and 18 percent, respectively.<sup>4</sup>

The same report also found that one out of 10 railroad switching systems and power plants were operating beyond their expected service lives.

Maintaining mass transit systems at their current conditions will require capital investments from all levels of government of approximately \$20 billion to \$35 billion annually through 2025. But in 2004, total capital infrastructure investment for mass transit reached only \$13.2 billion. As ridership grows, so will the required dollar amounts.

**Cost Savings**

Until recently, mass transit was seen as the best way of alleviating metropolitan area traffic congestion. Gasoline prices and a weak economy have relegated congestion to the back burner; today, mass transit is prized primarily for its low cost relative to the private automobile.

The average fare for an unlinked mass transit

trip in 2006 was \$1.12, according to the APTA. For buses it was \$0.89; commuter rail \$4.22; and light rail \$0.72.<sup>5</sup>

Fare revenues account for only 33.2 percent of mass transit operating funds. The balance is covered by local governments (21.1 percent); state governments (22.8 percent); the federal government (7.7 percent); and by taxes, advertising, and other sources collected directly by the transit agencies themselves (15.3 percent).

**Mass Transit by the Numbers**

- 120,659 mass transit vehicles operating in U.S. cities (2004)**
- 7.8 years average age of transit buses (2007)**
- \$0.89 average paid fare per bus trip (2006)**
- 33.2 percent share of mass transit costs covered by passenger fares (2006)**
- 37 percent immigrant share of San Francisco Bay area transit commuters (2000)**
- 33 percent share of U.S. mass transit riders who live in New York metropolitan area**
- 7.4 million tons annual reduction in CO<sup>2</sup> emissions from transit**

**Mass Transit Capital Spending**  
**2006: \$13.3 billion (\$44.33 per capita)**

**2050 projections (a)**  
**\$19.7 billion: at current population trends**  
**\$17.1 billion: at 50-percent reduction in immigration**  
**\$13.3 billion: at zero population growth**

**Note:**  
**a. assumes per-capita spending remains at 2006 levels.**

**Sources: American Public Transportation Association, American Society for Civil Engineers, Pew Research, Transportation Research Board, Wikipedia.**

**Mass Transit Efficiency**

While mass transit consumes large amounts of energy, it uses considerably less per passenger mile than private autos. A single bus filled with 80 people, for example, uses only slightly more fuel than does a single private automobile. On average, mass transit uses one-half of the gasoline used by cars per passenger mile, and one-third of that used by SUVs and light trucks.<sup>6</sup>

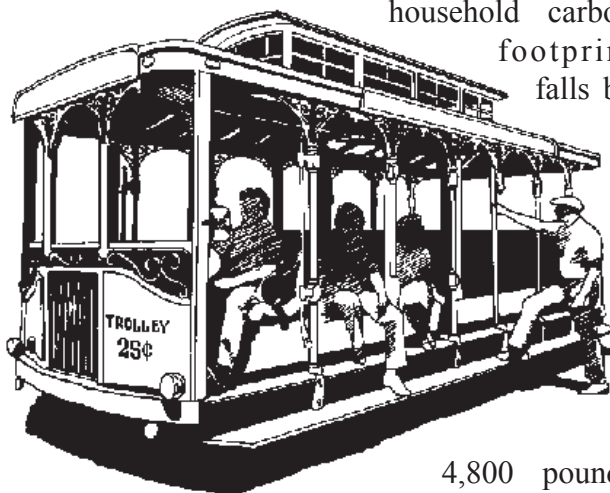
Public transportation reduces U.S. gasoline use by an estimated 4.2 billion gallons a year. That is more than three times the amount of gasoline refined from oil imported from Kuwait.<sup>7</sup> The fuel savings reflects both lower fuel consumption per mile and fewer miles traveled as people change their travel habits in response to mass transit.

If Americans used public transportation at the same rate as Europeans, scientists estimate that our imports of foreign oil would decline by more than 40 percent.<sup>8</sup>

Mass transit systems also take up much less space than highways. For example, a subway system operating on two tracks 36 feet wide can transport 80,000 passengers per hour. By comparison, an 8-lane freeway 125 feet wide can carry only 20,000 passengers per hour. In some cities, the streets, highways, bridges, overpasses, and parking lots occupy as much as one-third of the available land area.

### Environmental Benefits

The daily transit pass may be the most powerful weapon in the war against global warming. When a commuter switches from driving to public transportation, his or her household carbon footprint falls by



4,800 pounds per year, or 10 percent.

If a household's second commuter gives up a second car, that household can reduce its carbon emissions up to 30 percent. Compared to other things that individuals might do, nothing reduces greenhouse gases more.

Most commuter rail and trolley lines are powered by electricity, thus emitting little or no pollution directly. Most buses and commuter rail locomotives use diesel fuel. Newer buses are increasingly fueled by alternative fuels such as compressed gas, propane, and hydrogen fuel cells.

Public transportation reduces CO<sup>2</sup> emissions by an estimated 37 million metric tons annually—equivalent to the emissions from the electricity used by 4.9 million households.<sup>9</sup>

### Economic Development

One of the prerequisites for a viable mass transit system is a sufficient density of riders and destinations within walking distance of transit stops. The absence of such densities in sprawling, automobile-dependent suburbs makes it difficult for mass transit to attract a critical mass of ridership—even with highly subsidized fares.

To a considerable degree, however, new transit systems can create density. A well-designed public transit system will stimulate economic development along the route, attracting residents, workers, and shoppers from other parts of the metropolitan area.

Real estate—residential, commercial and business—served by public transportation usually commands higher rents and maintains higher value than similar properties not as close to transit infrastructure. For example, a 2002 University of North Texas study found that commercial properties located near suburban Dallas Area Rapid Transit (DART) stations increased in value 24.7 percent, while properties not served by rail increased only 11.5 percent. Values of residential properties near the stations rose 32.1 percent compared to the 19.5 percent increase for properties not served by rail stations.

Also, according to the Urban Land Institute, residential properties for sale near commuter rail stops in California consistently enjoy price premiums, including a 17-percent advantage to properties in the San Diego region.

In some countries—notably Hong Kong—mass transit agencies generate a profit by developing land around the stations. This is a mixed blessing, eliminating the need for government subsidies while also generating opposition to new transit construction by individuals concerned about congestion.

### Safety and Emergency Use

Public transportation is one of the safest modes of travel in the U.S. According to the National Safety Council, transit bus riders and commuter rail riders are both 25 times safer than people traveling in private automobiles.

Mass transit has also shown a remarkable ability to function during crises. On September 11, 2001, New York City bus and subway lines moved

people safely away from the World Trade Center disaster. After the Pentagon was attacked, the Washington, DC, metro and bus lines evacuated hundreds of thousands of people in an early rush hour.

### Conservative Skepticism

Could mass transit survive in a free market? Most laissez-faire conservatives would answer this question with a resounding “NO!” As they see it, mass transit is a government creation. In a pure free market, virtually all forms of public transit would vanish as people turned to an inherently superior mode of travel: the private automobile.

This view is expressed in a policy paper, “Myths and Facts of Nation’s Transit Policy” by Peter Gordon:



Commuters wait to board a Metro subway at one of the Metro stations in Washington, D.C.

The long-term growth of incomes has spawned demands for low-density living. The auto-highway system has facilitated these lifestyles, causing the demand for conventional

transit (defined as traditional fixed-route, fixed schedule, most often bus service) to decline....

Publicly run transit monopolies are inefficient and rarely responsive to demand. As a result, they serve ever smaller markets at ever higher costs. Their subsidization has, therefore, increased considerably.<sup>10</sup>

Reality check, please. The automobile’s current domination of U.S. transportation could not have happened without government policies designed to promote highway use. For decades, massive amounts of federal tax revenues—other than the gas tax—have supported highway construction. Interest paid by the state departments of transportation on highway bonds is exempt from taxation. And the suburbanization of America’s cities—arguably the biggest factor behind the post-World War II explosion in automobile ownership—was subsidized mightily by federal tax deductions for property taxes and mortgage interest.

Another widespread belief is that mass transit ridership is overwhelmingly low income, minority, and therefore unlikely to support a conservative agenda. A Cato Institute study debunks this:

Transit provides essential mobility to many of the poor, but transit accounted for less than 7 percent of trips made by low-income people in 1983. . . . If public transit subsidies benefit anyone, they benefit affluent suburbanites, not the poor. A Los Angeles study determined that inner-city service, patronized largely by the poor, received less than 22 cents in total operating subsidy per passenger boarding, while express service, patronized largely by the affluent, received more than \$1.18 per boarding....<sup>11</sup>

Whites accounted for 41 percent of mass transit riders in 2007—more than any other group. Thirty-five percent of transit riders have household incomes over \$50,000; 10 percent are in the \$100,000 and above income bracket.<sup>12</sup> Many of these people can afford to drive but opt for high quality commuter



rail or express bus service.

Mass transit infrastructure may indeed be part of the social safety net. But it is a wide net, available to all. ■

### Endnotes

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A Brown line train and Orange line train contend for the intersection at the southeast corner of the Loop in Chicago.