

The Antiplanner

Dedicated to the sunset of government planning

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Mobility Principles for a Prosperous World

Four years ago, Zipcar co-founder Robin Chase wrote, or led the effort to write, ten [principles of shared mobility](#) for livable cities. Despite a patina of social justice and green values, these principles were a transparent effort to give her company and companies like hers a huge economic advantage by limiting and eventually forbidding the use of privately owned vehicles in cities.

Recently, someone asked me for my response to these principles. While my reply is on page 5, my main response is to offer my own mobility principles. These principles apply to urban and rural areas, to the United States and other countries, and to all forms of transportation. I've previously stated most of these principles in various Antiplanner posts, but this one brings them together.

1. The User-Pays Principle

The vast majority of benefits from transportation accrue to the users, so they should [pay the costs](#). Limiting transportation funding to amounts that users are willing to pay protects against optimism bias, wasteful megaprojects, and the construction of speculative projects that make little economic sense. While there may be some side benefits to transportation, there are side benefits to everything, but that doesn't mean everything should be subsidized.

The *Rent-Seekers' Corollary* to the User-Pays Principle is that, once a precedent is made to subsidize some form of transportation, [rent seekers](#) (i.e., subsidy seekers) will come out of the woodwork to fabricate reasons why they, too, should be subsidized, and such subsidies will soon spin out of control. That's how subsidies to urban transit, sometimes justified to offset subsidies to auto drivers, have grown to be more than 100 times as much, per passenger-mile, as subsidies to highway users.

2. The Infrastructure Principle

The United States has 4 million miles of roads, 160,000 miles of railroads, and 15,000 airports. The Infrastructure Principle holds that any transportation technology that requires its own dedicated infrastructure will not be able to compete against highways, airlines, and freight railroads

because the cost of building enough infrastructure to make the technology useful and the risk that the technology will fail to cover its costs will both be too great. [High-speed rail](#), [magnetically levitated trains](#), [hyperloop](#), [monorails](#), [light rail](#), and similar technologies are all pipe dreams that make no economic sense.

Even if the United States didn't already have roads, railroads, and airports, the *Dumb Infrastructure Corollary* holds that the infrastructure that is most likely to succeed is infrastructure that can be used by a wide variety of kinds of transportation. Roads can be used by pedestrians, cyclists, automobiles, motorcyclists, trucks, and buses. Airports can be used by jets, propeller planes, helicopters, passenger planes, and cargo planes. High-speed rail, maglev, and hyperloop all require dedicated vehicles and the first two, at least, only work for passengers.

3. The Law of Large Proportions

[Coined](#) by economist Charles Lave, this principle was described by him as "the biggest components matter most." In transportation, this applies to negative externalities: Efforts to [save energy](#), eliminate pollution, or reduce other transportation externalities will be more effective if applied to the most common forms of transportation.



Spending a billion dollars on electric buses, as the recent infrastructure bill proposes to do, won't do much to reduce greenhouse gas emissions when most people aren't riding transit. Photo by Proterra.

Since Americans travel by auto almost a hundred times as many passenger miles per year as by transit, improving the energy efficiency of automobiles by 1 percent will do more to save energy and reduce pollution than trying to double the amount of transit ridership (especially since most transit systems use [more energy per passenger-mile](#) than the average car). Since Americans travel by air more than a hundred times as many passenger miles per year as by intercity passenger trains, improving the energy efficiency of airlines will do more to save energy than trying to increase Amtrak ridership (especially since Amtrak uses [almost as much energy](#) per passenger-mile as commercial aircraft).

We've seen this principle in action since *The Atlantic* published Lave's article identifying it in 1979. Since then, federal, state, and local governments have spent more than a trillion dollars trying to attract people out of cars and onto transit in order to save energy and reduce pollution. Yet transit trips per average urban resident have declined from 51 in 1979 to 37 in 2019. Meanwhile, the average car has gotten almost [50 percent more energy efficient](#) and total automotive air pollution (including carbon monoxide, volatile organic compounds, nitrogen oxides, sulphuric oxides, and particulates) have declined [88 percent](#) (through 2019) despite a doubling in the number of miles driven.

4. The Big-Country Principle

Highway and automobile critics often claim that too much land in our cities is devoted to the automobile. Aside from the fact that they often [exaggerate](#) this amount, the reality is that land is the most abundant resource we have in the United States, and we can afford to devote some of it to transportation.

The 2010 census found that only [3 percent](#) of the nation's land was urbanized. The most heavily urbanized state, New Jersey, was—by the Census Bureau's definition—more than 60 percent rural. The Census Bureau only considers communities of 2,500 people or more to be urban, but even if smaller communities are counted, the urban share is small.



It's a big country.

The Department of Agriculture's [2017 Natural Re-](#)

[sources Inventory](#), which uses a broader definition of urban than the Census Bureau, found that 5 percent of the contiguous 48 states was urban and 1 percent more consisted of rural developments such as roads and railroads. About half a million acres a year have been developed in recent years, at which rate it would take more than 3,500 years to develop all of the land in the country.

The United States is far from unusual in this regard. Excluding city-states such as Monaco and Singapore, every country in the world other than Bangladesh has plenty of rural land.

5. The Egalitarian Principle

Many transportation activists wax nostalgic about how families could once take streetcars to local amusement parks or travel between states on comfortable intercity passenger trains instead of being cramped in sardine-can-like jets. They conveniently forget that such travel was expensive and limited to the elites. Only middle-class and highly skilled working-class workers could afford to ride streetcars to work and only middle- and upper-class families could afford trips on long-distance passenger trains more than once or twice in their lives. It is likely that, as recently as 1910, most Americans had never traveled more than 50 miles from their birthplaces.



Highways don't care about race, gender, or whether you drive a Bentley or a beetle. Photo by Bob Adams.

The mass-produced "automobile has [democratized mobility](#)," says demographer Wendell Cox. Highways, unlike railroads or urban transit, cannot discriminate between users based on their race, religion, or gender. Henry Ford's moving assembly line made automobiles affordable to the working class, and they quickly bought them, allowing them to live and work and travel when and where they wanted. As of 2019, more than 91 percent of American households had at least one motor vehicle.

The main obstacle to more Americans owning cars is not the cost of buying or operating a vehicle but the cost of financing one. Lenders charge as much as [25 percent interest](#) on used-car loans to low-income people with poor or no credit ratings. Those who claim to care about social justice should support programs to provide [low- or zero-interest auto loans](#) to low-income households, which will give those households access to far more economic op-

opportunities than urban transit expansions.

Airlines were also elitist until they were deregulated in 1980. By 1996, airline fares per passenger-mile were [lower than Amtrak fares](#), and today they are less than half as much. In 1980, nearly half of all Americans had never flown in a plane; today it is just [13 percent](#).

6. The Separation-of-Uses Principle

One of the strengths of highways, roads, and streets is that they are open to a wide variety of users, from pedestrians and cyclists to the largest trucks. At the same time, the safest roads separate the largest from the smallest users. Urban planners have focused on improving safety by slowing down motor vehicles, yet pedestrian and cyclist fatalities have increased. A better strategy is to separate uses.



A freeway and a bike path use the same bridge between Oregon and Washington but are safely separated from one another. Photo by Accordion.

Measured in fatalities per billion vehicle miles, urban freeways, which are usually closed to pedestrians and cyclists, are the safest roads in the nation. Non-freeway arterials highways, which are open to pedestrians and cyclists, are the most dangerous. Safety could be greatly increased by [providing alternate routes](#) such as bicycle boulevards and pedestrian paths paralleling arterial routes. In general, efforts to improve transport safety must be [data-driven](#) and not simply follow the latest urban planning fads.

7. The Released-Demand Principle

Anti-highway groups have somehow managed to persuade many politicians that more roads increase congestion through [induced demand](#), which is the idea that more roads lead to more driving. Think about that for a moment: more driving means more people reaching more economic opportunities which means greater wealth. What's wrong with that?

In fact, if new roads automatically induced new demand, every road would be equally crowded. (Also, private companies would be falling all over each other building new toll roads.) Instead, what happens is that congestion suppresses demand for travel, and building new roads can

release that demand.

The real cause of congestion is poor road pricing. Currently, people pay the same whether they drive at rush hour or midnight and whether they drive in a major urban corridor or a remote rural road. Other forms of transportation, including airlines, cruise ships, and Uber/Lyft, charge more during busy periods than lightly used periods.



Proper road pricing can reduce if not eliminate congestion by effectively doubling throughputs during busy periods of the day. Photo by provideot.

Per-mile road pricing would be especially effective because roads have a [unique attribute](#): their ability to move vehicles declines when they get crowded. A freeway lane that can move 2,000 vehicles per hour at mid-day may be able to move only 1,000 vehicles per hour during rush hours. By maintaining throughputs at 2,000 vehicles per hour, road pricing won't price people off the roads; it will price them onto the roads, allowing more people to get to where they need to go at any time of the day.

In general, per-mile road pricing will reduce the need to build new roads, but some fast-growing places will still need new roads. Proper road price can provide a clear signal of where new roads are needed: if a particular road generates far more revenue than is needed to maintain it, that revenue should be used to expand the road to the point where revenues cover each road's costs.

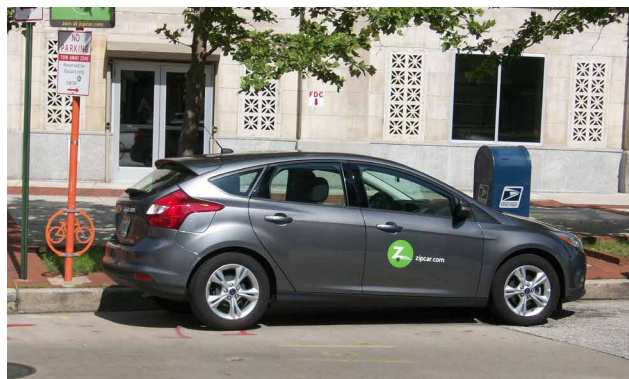
8. The Marginal-Cost Principle

The above principles don't say anything about whether transport vehicles should be privately owned or shared. But one principle puts shared mobility at a severe disadvantage: the Marginal-Cost Principle.

A large share of the cost of any transportation is fixed. The owner of a car who never drives it still ends up paying for depreciation, insurance, and other costs. Once someone owns a vehicle, however, each additional trip they take only costs them the variable or marginal cost of that trip: fuel, maintenance, plus something for wear-and-tear.

Unless they are heavily subsidized, operators of shared vehicles normally have to earn the *average cost* of providing transport services to each of their customers. This means that people who already own a vehicle and who only have to pay the marginal cost of each trip are reluctant to pay for shared mobility, since each trip would cost more. It

also means that people who don't own their own vehicles and rely on shared mobility instead will be less mobile because each trip will cost them more.



Shared mobility companies such as Zipcar have a difficult time competing with private vehicle ownership thanks to the Marginal-Cost Principle. Photo by Deanlaw.

This is why shared-mobility advocates want to restrict private vehicle use: they simply can't compete when private owners only have to pay the marginal costs of each trip. As a policy matter, government should be at least neutral about this question, but if a bias is needed, it should be biased in favor of greater mobility, which means in favor of private ownership.

9. The Resiliency Principle

The pandemic has led to greater discussions of resiliency, and one mode of transportation has proven to be **more resilient** than any other: motor vehicles and highways.



Shared mobility failed New Orleanians when Hurricane Katrina hit, but when Hurricane Rita threatened Houston a few weeks later, nearly 4 million people were able to evacuate, nearly all by private automobile. Photo by Ed Edahl, FEMA.

- Where transit agencies, Amtrak, and even the airlines demanded tens of billions of dollars in subsidies to stay in business, highways were available for people to drive on when they needed to.
- When transportation patterns changed, with fewer people going to city centers, highways were available for people to go where they needed to go while most transit agencies remained locked in hub-and-spoke

patterns.

- Where transit ridership didn't exceed 50 percent of pre-pandemic levels until September 2021, driving reached 90 percent in September 2020 and 100 percent in June 2021.

This is no surprise. When Hurricane Katrina disrupted New Orleans, people with private cars got out; people who relied on shared mobility ended up being stuck in the city. Shared mobility is fine as long as only a few people use it at any given time, but if everyone needs to evacuate a major urban area, private motor vehicles work best.

10. The Antiplanning Principle

Two years ago, no one knew that a worldwide pandemic would take place in 2020 and even those who predicted that a pandemic would someday happen didn't predict the major ways it would change cities and transportation. This means that long-range transportation plans written more than 20 months ago, including plans that are still in the approval process today, are **already obsolete**.

This isn't unusual. Transportation planners can't predict such major events as 9/11, natural disasters, or the changes in energy prices, all of which have major effects on transportation. Since they can't predict the future, most long-range transportation plans end up planning for the past. They also end up becoming tools of special-interest groups (see the Rent-Seeking Corollary above).

2022-2050

REGIONAL TRANSPORTATION PLAN



The pandemic wiped out more than half of Seattle transit ridership, yet the Puget Sound Regional Council is planning as if it never happened.

Rather than spending millions of dollars a year on long-range transportation planning, transportation agencies should focus on solving today's problems today. That means removing congestion bottlenecks, using coordinated traffic signals and similar techniques to improve traffic flows, applying data-driven methods to improve transport safety, keeping infrastructure in a state of good repair, and providing cost-effective solutions to help low-income people. Better solutions to today's problems will make it easier for transportation systems to evolve to serve future needs.

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Response to *Shared Mobility Principles*

The *Shared Mobility Principles* are in italics; my responses are in Roman.

1. We plan our cities and their mobility together.

The way our cities are built determines mobility needs and how they can be met. Development, urban design and public spaces, building and zoning regulations, parking requirements, and other land use policies shall incentivize compact, accessible, livable, and sustainable cities.

Planners don't understand how cities work; they only know how cities used to work so they usually plan for the past, not the future.

2. We prioritize people over vehicles.

The mobility of people and not vehicles shall be in the center of transportation planning and decision-making. Cities shall prioritize walking, cycling, public transport and other efficient shared mobility, as well as their interconnectivity. Cities shall discourage the use of cars, single-passenger taxis, and other oversized vehicles transporting one person.

Well over 90 percent of urban travel is in vehicles, so planning for people means planning for their vehicles. Prioritizing other modes of travel means favoring a small minority over the majority.

3. We support the shared and efficient use of vehicles, lanes, curbs, and land.

Transportation and land use planning and policies should minimize the street and parking space used per person and maximize the use of each vehicle. We discourage overbuilding and oversized vehicles and infrastructure, as well as the over-supply of parking. Shared vehicles include all those used for hire to transport people (mass transit, private shuttles, buses, taxis, auto-rickshaws, car and bike-sharing) and urban delivery vehicles.

Shared lanes mean increased danger. The safest roads separate pedestrians and cyclists from automobiles. Effectively, they are supporting accidents, injuries, and deaths.

4. We engage with stakeholders.

Residents, workers, businesses, and other stakeholders may feel direct impacts on their lives, their investments and their economic livelihoods by the unfolding transition to shared, zero-emission, and ultimately autonomous vehicles. We commit to actively engage these groups in the decision-making process and support them as we move through this transition.

Anti-private-car advocates tend to engage with only the stakeholders who already agree with their views.

5. We promote equity.

Physical, digital, and financial access to shared transport services are valuable public goods and need thoughtful design to ensure use is possible and affordable by all users, regardless of age, gender, race, ethnicity, income, ability, or other characteristic/identity.

Everyone benefits from automobility, especially low-income people. Plans that are biased against automobiles do the most harm to minorities and women that de-

pend on cars for their freedom.

6. We lead the transition towards a zero-emission future and renewable energy.

Public transportation and shared-use fleets will accelerate the transition to zero-emission vehicles. Electric vehicles shall ultimately be powered by renewable energy to maximize climate and air quality benefits.

Public transportation uses far more energy and emits far more greenhouse gases per passenger mile than the average SUV, much less the average car. Any plan that focuses on public transport is not a plan that will lead to a zero-energy future.

7. We support fair user fees across all modes.

Every vehicle and mode should pay their fair share for road use, congestion, pollution, and use of curb space. The fair share shall take the operating, maintenance and social costs into account.

I agree. It is time to make transit and transit riders pay their fair share.

8. We aim for public benefits via open data.

The data infrastructure underpinning shared transport services must enable interoperability, competition and innovation, while ensuring privacy, security, and accountability.

Not an issue except that personal travel data must be kept private.

9. We work towards integration and seamless connectivity.

All transportation services should be integrated and thoughtfully planned across operators, geographies, and complementary modes. Seamless trips should be facilitated via physical connections, interoperable payments, and combined information. Every opportunity should be taken to enhance connectivity of people and vehicles to wireless networks.

The best-connected transportation is transportation that allows a one-seat ride from origin to destination. That means automobiles.

10. We support that autonomous vehicles (AVs) in dense urban areas should be operated only in shared fleets.

*Due to the transformational potential of autonomous vehicle technology, it is critical that all AVs are part of shared fleets, well-regulated, and zero emission. Shared fleets can provide more affordable access to all, maximize public safety and emissions benefits, ensure that maintenance and software upgrades are managed by professionals, and actualize the promise of reductions in vehicles, parking, and congestion, in line with broader policy trends to reduce the use of personal cars in dense urban areas. **Why?***

This violates my interpretation of the previous principle in that it forces multi-seat rides in and out of such dense urban areas.

In general, these principles fail to show why shared mobility is superior to private mobility or why cities should give any preference to the former.