

# Speed Versus Affordability: Social Equity Implications of Current Transportation Planning Practices

19 February 2021

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For presentation at the 2021 Conference to Advance Transportation Equity

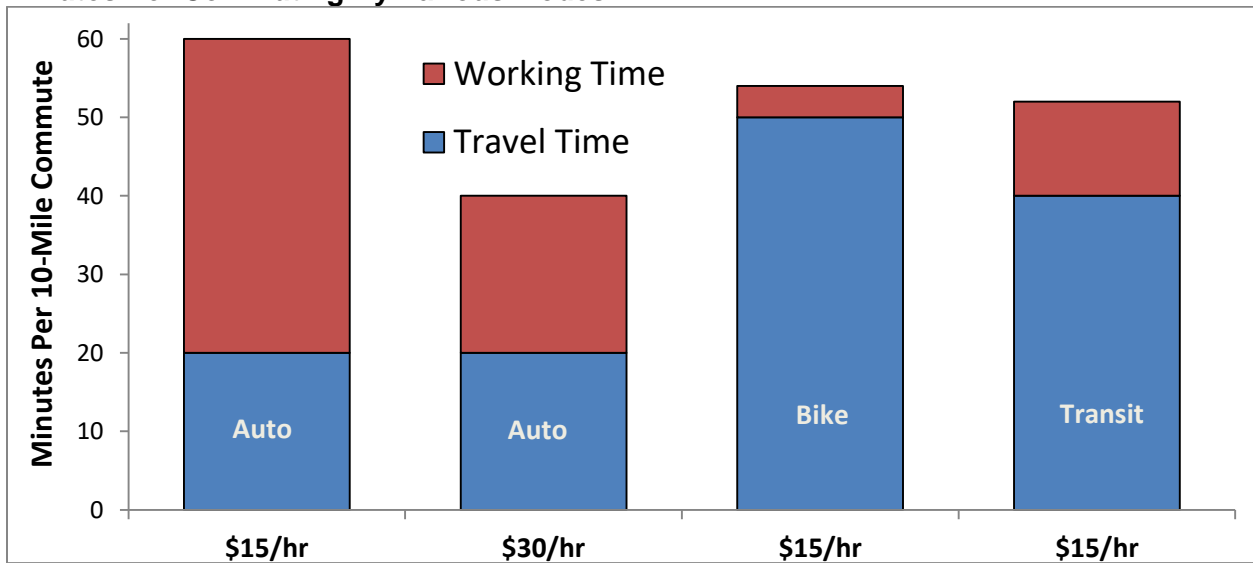
Transportation planning decisions often involve trade-offs between forms of mobility and accessibility. For example, designing roadways to maximize vehicle traffic volumes and speeds tends to degrade active mode (walking and bicycling) conditions, and money spent on roads and parking facilities cannot be spent on walking, bicycling and public transit. Higher density development tends to increase active and public transport access, but by increasing congestion tends to reduce vehicle traffic speeds and parking availability, reducing automobile access.

During the last century, transportation system performance was evaluated based primarily on vehicle travel speeds, using indicators such as average traffic speeds, congestion delay, roadway level-of-service, and vehicle parking availability. These planning practices favor faster modes, particularly automobile travel, over slower but more affordable modes, and automobile-oriented sprawl over more compact and multimodal community development. This creates automobile-dependent communities where it is easy to get around by car, but often difficult and sometimes dangerous to reach many services and activities by more inclusive and affordable modes.

This paper examines these practices and evaluates their social equity impacts. It compares the costs of various modes, and therefore the increased costs and reduced affordability of an automobile-dependent transportation system. Using historical and current household expenditure data, it shows that during the 20th Century, travel speeds increased by an order of magnitude, but so did transportation costs, so on average households spend about 20% of their budgets on transportation-related costs, with higher portions for lower-income motorists.

This analysis indicates that planning practices that favor speed over affordability tend to benefit affluent motorists, but reduce accessibility for people who cannot or prefer not to drive, and significantly increase household cost burdens. It evaluates these impacts using "effective speeds," which measures distance travelled divided by time spent traveling plus time spent earning money to pay transport expenditures. Effective speeds increase with income. Measured this way, automobile travel is highly regressive, and for most lower-income workers, bicycling and public transit are faster overall than driving.

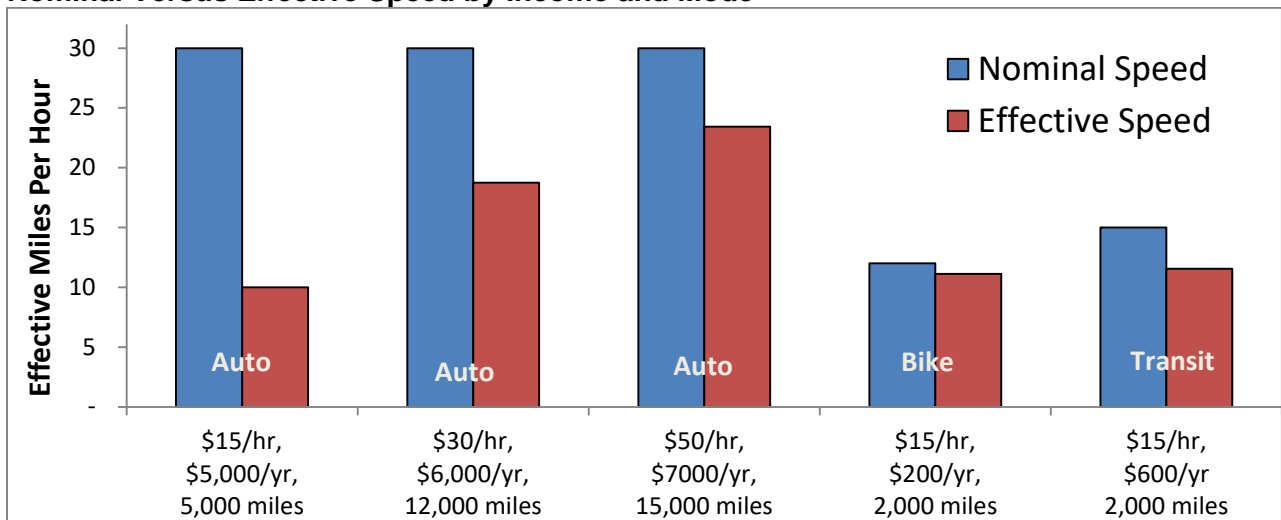
### Minutes Per Commuting By Various Modes



This figure shows effective speed: the time spent travelling and earning money to pay travel expenses, for various modes and incomes. Many lower-wage motorists spend more time earning money to pay their travel expenses than they spend travelling. Bicycling and transit are often faster than driving overall. (Assumes bicycling 12 mph, 10¢/mile; Public Transit 15 mph, 30¢/mile; Auto 25 mph, \$5,000 and 5,000 annual miles for \$15/hr motorists and \$7,000 and 12,000 annual mile for \$30/hr motorists.)

Measured by effective speed, automobile travel is regressive; lower-income workers must spend more total time to travel a given distance than higher-income workers. Most lower-income workers' effective speed is faster for bicycling and public transit than for automobile travel, as illustrated below. These expenses are more than many lower-income households can afford.

### Nominal Versus Effective Speed by Income and Mode



Effective speeds increase with income and are much lower than nominal speeds for lower-income motorists. As a result, policies that favor faster but expensive modes over slower but cheaper modes are regressive. Planning that evaluates transport quality based on nominal rather than effective speeds harms poor people.

This paper critically examines why planning practices favor speed over affordability, the broader implications of these biases, and ways to correct them. It examines latent demand for more affordable transportation options, and policy reforms to serve those demands by improving affordable modes and creating more accessible, multimodal communities. It discusses co-benefits of these reforms.