

Sustainable Transportation and Equity

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Abstract

This paper describes the relationships between sustainable transportation and equity. It discusses various policy and planning reforms that can help achieve sustainability and equity objectives.

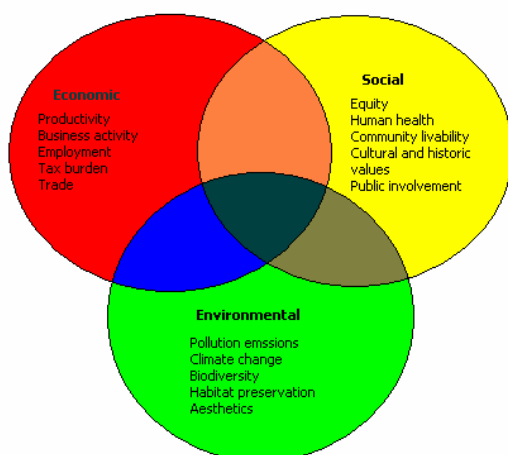
Introduction

There is growing interest in sustainability, sustainable development, and sustainable transport (Litman and Burwell, 2004). This concern is rooted in the growing awareness that human activities can impose unanticipated economic, social and ecological impacts. Global air pollution, the durable effects of manufactured toxins, degraded natural resources such as fresh water and fisheries, and the cross-border nature of many environmental problems all highlight the need to evaluate human impacts broadly.

Sustainability reflects one of the most fundamental human desires: to create a better world. It provides guidance for long-term, strategic decision-making. Sustainability emphasizes the integrated nature of human activities and therefore the need to coordinate planning among different sectors, jurisdictions and groups. Sustainability planning is to development what preventive medicine is to health: it anticipates and manages problems rather than waiting for crises to develop. Sustainable development strives for an optimal balance between economic, social and ecological objectives.

Concern about sustainability can be considered a reaction to the tendency in decision-making to focus on easy to measure goals and impacts, while ignoring those that are more difficult to measure. Sustainable decision-making can therefore be described as *planning that considers goals and impacts regardless of how difficult they are to measure*. Interest in sustainability originally reflected concerns about long-term risks of current resource consumption, reflecting the goals of “intergenerational equity” (i.e., being fair to future generations). But if *future* equity and environmental quality are concerns, it makes little sense to ignore equity and environmental impacts that occur during this generation, and in distant places. Thus, sustainability ultimately reflects the goals of social equity, ecological integrity and human welfare, regardless of time or location.

Figure 1 Sustainability Issues. This figure illustrates various sustainability issues.



Sustainability is sometimes defined narrowly, for example by focusing on resource depletion and air pollution problems, on the grounds that these represent the greatest long-term risks. But sustainability is increasingly defined more broadly to include the issues in Figure 1. Narrowly defined sustainability tends to overlook many relationships between issues and opportunities for integrated solutions. This may result in solutions to one problem that exacerbate other problems, and undervalues strategies that provide multiple but modest benefits. For example, narrowly defined sustainability may allow climate change emission reduction strategies that impose significant economic costs or are inequitable. Truly sustainable planning will favor strategies that reduce emissions while also supporting economic development and social equity objectives.

Social equity refers to the distribution of impacts (benefits and costs), and the degree to which that distribution is considered fair and appropriate (Litman, 2005). There are three general categories of equity related to transportation:

1. *Horizontal Equity* (also called *fairness*) is concerned with whether each individual or group is treated equally, assuming that their needs and abilities are comparable. It suggests that people with comparable incomes and needs should receive an equal share of public resources and benefits, and bear an equal burden of public costs.
2. *Vertical Equity With Regard to Income* considers the allocation of costs between different income classes, assuming that public policies should favor people who are economically disadvantaged.
3. *Vertical Equity With Regard to Mobility Need and Ability* considers whether a transportation system provides adequate service to people who have special transportation needs (they are *transportation disadvantaged*). It justifies facility design features and special services for people with disabilities.

Equity is an important component of sustainable transportation. Transportation decisions have many significant equity impacts: they affect people's health and opportunity in life (for example, people who are disabled or poor may be limited by their inability to access public services, education and employment opportunities), they affect the distribution of various costs.

Yet, equity is often treated as a specialty issue rather than something to be incorporated into any transportation planning decision. For example, generous minimum parking requirements tend to increase automobile dependency and sprawl, which reduces accessibility for non-drivers. It also tends to reduce housing affordability and force people who own fewer than average vehicles and drive less than average to subsidize the parking costs of their more automobile-dependent neighbors. Yet, parking requirements in zoning codes are generally considered a technical issue, established by transportation engineers and public officials with little consideration to their equity impacts.

Current transportation systems and land use patterns tend to be relatively "automobile dependent," meaning that they provide a relatively high level of service to motorists, but inferior access by other modes ("Automobile Dependency," VTPI, 2005). Even relatively lower-income communities are often automobile dependent because planning decisions are made by professionals and public officials who are themselves automobile dependent.

Current transportation and land use markets are distorted in various ways that tend to increase automobile use beyond what is economically and socially optimal ("Market Principles," VTPI, 2005). Current planning tends to underestimate automobile traffic costs and underestimate the benefits of alternative modes, which skews planning decisions toward automobile-oriented improvements. Many motor vehicle costs are either *fixed* (users pay a fixed amount regardless of how much they drive) or *external* (users do not directly bear these costs). Land use policies tend to favor more dispersed urban expansion (sprawl) over more compact, multi-modal development. In a more efficient market, consumers would have better travel options to choose from (better walking and cycling facilities, better public transit services), and would pay directly for using roads and parking facilities.

These distortions tend to be inequitable, because they increase the external costs imposed on other members of society, and because they reduce the travel options available to physically, economically and socially disadvantaged people who tend to rely on alternative modes.

Described more positively, various planning and market reforms can help achieve sustainability and equity objectives by reducing existing market distortions that increase automobile dependency, which helps to create more balanced, multi-modal transportation systems. We call these “Win-Win Transportation Solutions” because they provide multiple economic, social and environmental benefits (“Win-Win Solutions,” VTPI, 2005). Below are examples of these strategies.

Least Cost Transportation Planning. This means that programs to reduce demand are considered equally with programs to increase capacity, and that all significant impacts are included in the analysis. This allows alternative modes and management strategies to receive appropriate consideration and investment.

Parking Management. This includes various strategies that result in more efficient use of existing parking facilities, such as shared parking, reduced or flexible minimum parking requirements, parking cash outs (choice of cash subsidies for employees), and unbundling parking from building space (occupants only pay for the parking they want).

Pay-As-You-Drive Pricing. This means that vehicle insurance premiums are based on the vehicle’s mileage during the policy term. Existing rating factors can be incorporated, so higher-risk motorists pay more per vehicle-mile. This makes insurance more equitable and affordable, and benefits lower-income motorists who tend to drive their vehicles less than average.

Public Transit Improvements. There are many ways to improve public transit service and encourage transit ridership, including additional routes, expanded coverage, increased service frequency, and longer hours of operation; comfort improvements; pricing innovations; improved rider information; and transit oriented development (neighborhoods designed around transit stations).

High Occupancy Vehicle (HOV) Priority. This gives buses, vanpools, and carpools priority over general traffic. This is a more efficient and equitable allocation of road space since HOVs impose less congestion on other road users per passenger-mile, and HOV priority provides an incentive for travelers to shift to more efficient travel modes.

Commute Trip Reduction. These are programs that give commuters resources and incentives to reduce their automobile trips. Typically include improved transportation options, such as ridesharing, transit, telework and flextime, and incentives such as a parking cash out or parking pricing.

School and Campus Transport Management Programs. These programs help students and parents overcome barriers to the use of alternative modes when traveling to schools and college or university campuses.

Nonmotorized Transportation Improvements. Walking and cycling directly substitute for automobile trips and support public transit and ridesharing. Residents of communities with good walking and bicycling conditions drive less and use transit more.

“Smart Growth” Land Use Policies. This is a set of policies that encourage development of more compact, pedestrian-friendly, transit-oriented communities, where residents need to drive less improve accessibility for non-drivers.

Carsharing. This consists of affordable, short-term (hourly and daily rate) motor vehicle rentals located in residential areas, which gives consumers a convenient and affordable alternative to vehicle ownership.

Traffic Management. This includes various roadway design features that reduce traffic speeds and volumes, and discourages short-cuts through residential neighborhoods. This increases road safety and community livability, creates a more pedestrian- and bicycle-friendly environment.

These are just a few of the policies and planning strategies that can help achieve sustainability and equity objectives. For more detailed information see the Victoria Transport Policy Institute *Online TDM Encyclopedia* (VTPI, 2005)

References and Information Resources

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