Focus on Livable Communities

New Thinking for a New Transportation Age

For a More Balanced and Healthy Transportation System

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This fact sheet is available on the LGC Web site in pdf format, with citations for reports and articles that expand on these concepts.

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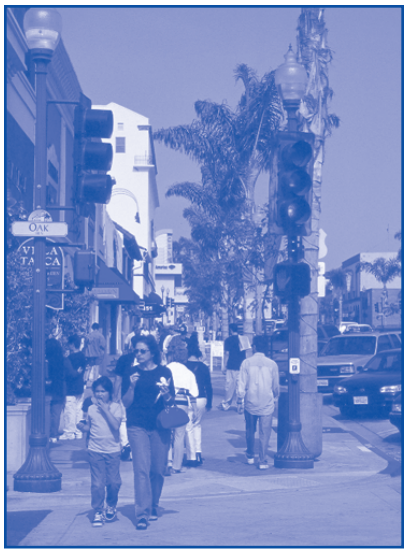
For decades, citizens and transportation professionals have assumed that the primary way to improve transportation is to increase vehicle traffic speed and road capacity – to move more cars. However, it is becoming increasingly clear that this approach:

- Is not affordable.
- Imposes high social and environmental costs.
- Cannot solve traffic congestion problems.



A growing number of planners and traffic engineers now believe that most communities have reached a point of diminishing returns in the race for speed and capacity. They advocate an entirely new approach to defining transportation problems and solutions.

These leaders are shifting from goals of speed and capacity to:

- Enhancing access to stores, schools, jobs and services.
- Offering diverse travel options.
- Reducing the length of trips and vehicle miles traveled.
- Reducing average speeds along roads.

These goals are especially important considering three-fourths of vehicle trips are short trips to schools and stores or to run errands.

Efforts to create socially and economically vibrant communities with a high quality of life are enhanced by integrated land use and transportation planning. This fact sheet challenges conventional approaches to transportation that focus on the automobile.

Says transportation engineer Walter Kulash: "The new paradigm is: how about moving people instead of cars? Isn't that why we were moving cars in the first place?"

New Thinking for a New Transportation Age

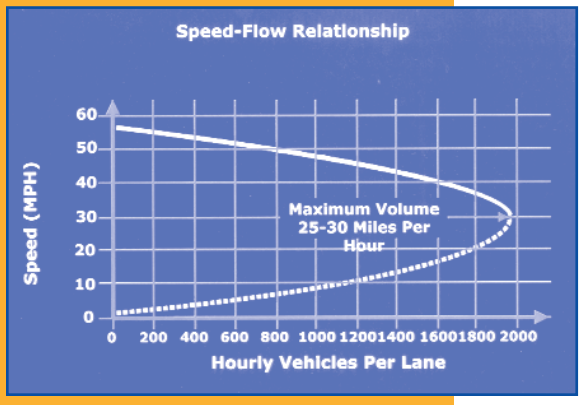
1. Slow Your Arterial to 30 mph and Carry More Cars

Surprising as it might sound, increasing the speed of traffic on a road to more than 30 miles per hour (mph) decreases the volume the road can handle.

The capacity of a lane of vehicle traffic is at its maximum at about 30 mph, according to the Transportation Research Board's 1985 *Highway Capacity Manual*. As speeds increase above 30 mph, drivers increase the space between cars to allow for greater stopping distance.

Despite the fact that newer versions of the manual have increased the most efficient speed to 40 mph, noted transportation engineer Walter Kulash, says the experience of local streets supports the 1985 version.

Speed-flow chart from the 1985 Highway Capacity Manual.



2. More and Wider Roads Create More Traffic

A growing body of research is demonstrating that building new and wider highways actually creates more vehicle traffic – above and beyond what can be attributed to population growth.

Researchers from the Federal Highway Administration (FHWA) and UC Berkeley have found that new road capacity draws motorists from more congested routes who are hoping to shave a few minutes off their commute.

The new capacity also sparks new and longer trips. With travel time reduced, motorists are now willing to drive further to take advantage of a store with lower prices, or to try a new restaurant. Some who usually take transit or stay home rather than fight traffic, take to the road. Promise of road access allows commuters to live further from work, spurring exurban development pressure and even more traffic.

An FHWA-sponsored study found new road capacity that provided a 10% improvement in travel time caused a 5% increase in driving. A recent UC Berkeley study concluded that 90% of all new highway capacity added to California's metropolitan areas is filled within four years, and 60% to 70% of all new county-level highway capacity is filled within two years.

The theory of induced demand has existed for years, but many transportation agencies fail to consider it when they project the benefits of a road capacity expansion. Many studies have confirmed regions can't build their way out of congestion. (See www.lgc.org for a list of citations.)

Remove It and They Will Disappear

Despite warnings of the traffic snarls that would erupt, several cities have seen between 20% and 60% of the traffic disappear when they removed a freeway or bridge. Examples include San Francisco's Embarcadero and Central freeways, Harbor Drive on Portland's waterfront, New York's West Side Highway, and London's Tower and Hammersmith bridges, and its beltway, the "ring road."

London's diverse travel options allowed 21% of the drivers who used Hammersmith Bridge to switch to other modes.

Grand River Boulevard in East Lansing, Michigan, was reduced from four to three lanes.

3. Retrofit Roads for Quality of Life

Wide, unruly roads can be retrofitted by simply changing the striping to make them safer and more livable. Cities across the country have removed one or two lanes from four-lane arterials and improved traffic flow while reallocating the extra pavement to bike lanes, parking strips or center turn lanes.

Prime for conversion are four lane roads carrying moderate volumes of 18,000 - 24,000 auto trips per day, according to pedestrian infrastructure experts Dan Burden and Peter Lagerwey. In *Road Diets* (www.walkable.org), they say lane reductions are especially helpful for roads peppered with driveways, or where motorists typically travel at excessive speeds and change lanes frequently – jockeying that can lead to collisions.

Road Diets profiles cases around the country where conversion of travel lanes to a two-way center turn lane increases road capacity while improving safety and lowering speeds. Lagerwey and Burden recommend working with engineering experts and involving citizens.

The City of Mountain View, CA, has retrofitted sections of three arterials by eliminating one lane in each direction. Residents had complained of fast-moving cars, and in each case, the roads had peak-hour volumes well below capacity. Restriping allowed the City to inexpensively widen existing bike and parking lanes by one foot each, and add two-way left turn lanes. On one road, the city installed landscaped median islands, which now provide a refuge for children crossing midblock between apartment complexes and a large elementary school.

Though speeds and volumes have seen little change, turns into and out of driveways are more manageable and cyclists have more room. Residents are pleased, says City traffic engineer Dennis Belluomini.

Good Health and Transportation

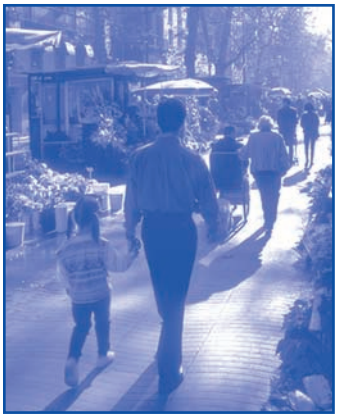
Scientists at the U.S. Centers for Disease Control and Prevention (CDC) have watched rates of obesity, and chronic diseases skyrocket in the last 20 years. Today, nearly one in four Americans is obese, or more than 30 pounds over their ideal weight.

At the same time, 75% of the U.S. adult population is sedentary – meaning they don't achieve the U.S. Surgeon General's recommended 30 minutes of moderate activity most days.

Just 30 years ago, nearly two-thirds of all children walked or biked to school. Today, the figure is less than 10%, according to the CDC. Meanwhile, in California, 25% of all traffic fatalities are pedestrians and bicyclists.

Public health leaders are beginning to promote **Active Community Environments** – places where people can easily and safely walk or bicycle for most routine trips.

4. Walking Is Transportation.



Transportation systems that focus on automobiles in the 21st century will leave a significant portion of California's diverse population without transportation options. In 1999, roughly one-third, or 13 million of the state's 34 million residents did not have a driver's license – placing California 46th among states for its low percentage of drivers.

Californians most likely not to drive include the working poor, the state's 8 million children who are increasingly isolated in suburbs, people with disabilities, and the state's growing elderly population, many of whom struggle to maintain their licenses lest they lose their independence and mobility.

By the year 2040, there will be a projected 10 million Californians over the age of 65, up from 3 million in 1990. Many among the aging baby boom population live in suburbs designed exclusively for the car.

5. Beware of Biased Language.

Loaded language only perpetuates thinking that favors motor vehicles.

➢ The terms "improvements, enhancements, upgrades" and "efficiency" are often euphemisms for increasing vehicle speed and capacity. "Expand, reconstruct, widen" or "change" are more descriptive and accurate.

➢ When using "level of service" and "traffic," specify whose level of service and what type of traffic are being discussed. Some cities have pedestrian level of service indicators, and not all traffic is vehicular.

The City of West Palm Beach, FL, in 1996 instituted a new language policy to help create a more balanced and sustainable transportation system (see www.lgc.org).

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Resources

For technical resources, other fact sheets in this series, and guidebooks on street design, traffic calming, and other innovative transportation strategies, visit the Local Government Commission online at **www.lgc.org**.

More Web Sites

Surface Transportation Policy Project: www.transact.org
STTP California: www.transact.org/CA

Texas Transportation Institute: http://mobility.tamu.edu

Transportation Research Board: www.nas.edu/trb

Victoria Transportation Policy Institute: www.vtpi.org

Walkable Communities Inc.: www.walkable.org

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