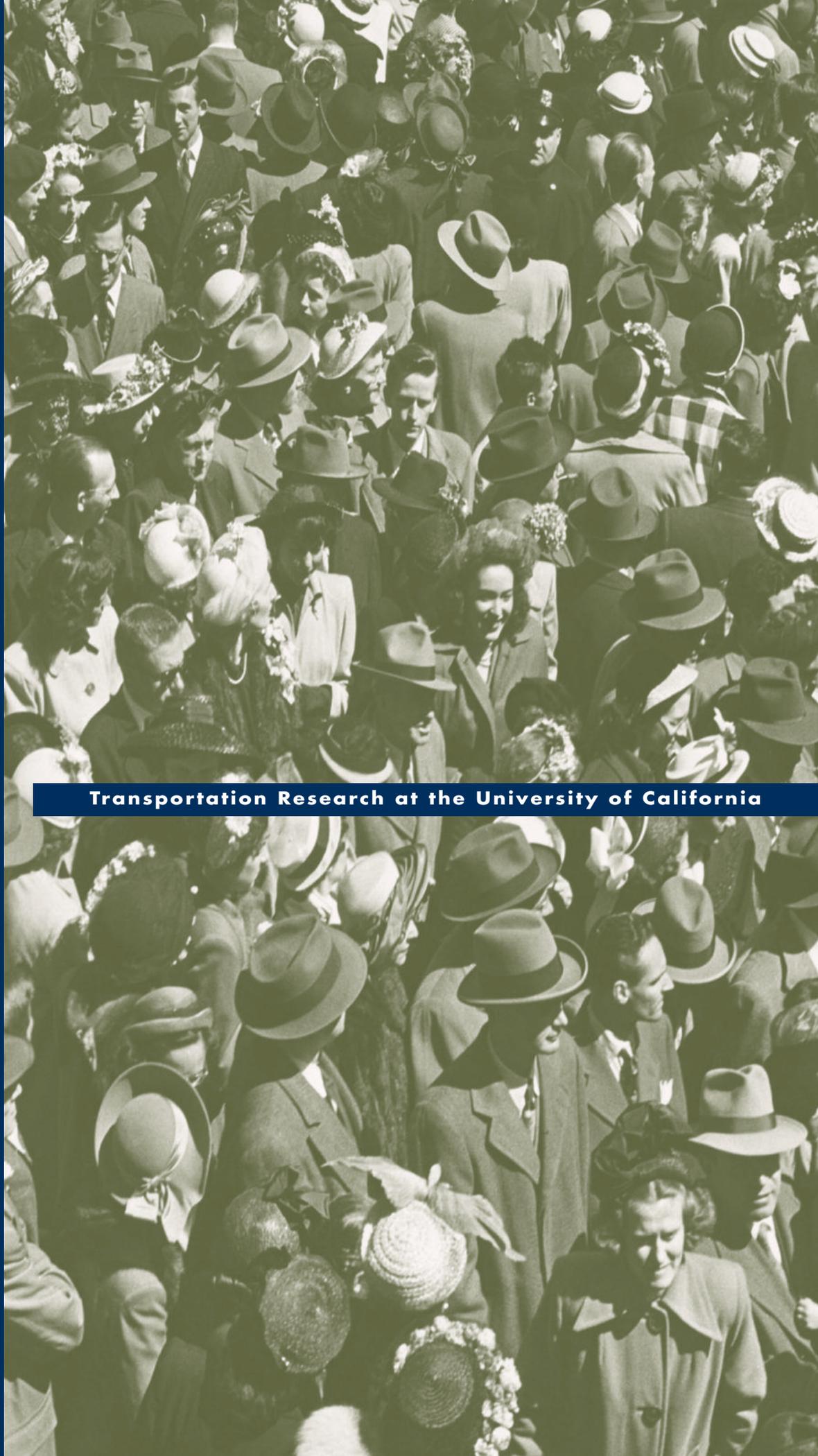


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C O N T E N T S

A C C E S S 3 6 • S P R I N G 2 0 1 0

- 2 *Just Road Pricing*
LISA SCHWEITZER AND BRIAN D. TAYLOR
- 8 *Public Parking Spaces for Shared Cars*
ANDREA OSGOOD
- 14 *Restricting Transportation Infrastructure:
Bad for Business in California?*
KAREN CHAPPLE AND CARRIE MAKAREWICZ
- 22 *Vibrant Sidewalks in the United States: Re-integrating
Walking and a Quintessential Social Realm*
ANASTASIA LOUKAITOU-SIDERIS AND RENIA EHRENFUCHT
- 30 *Fixing Broken Sidewalks*
DONALD SHOUP
- 37 *Papers in Print*
39 *Back Issues*
41 *Order Form*

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What are the key policy issues? What are the take-aways from this research? What can we do now and what more do we need to know?

FOR OVER 20 YEARS, researchers at the University of California Transportation Center have asked hard questions and used the answers to help guide public policy. From its beginning, UCTC's core research theme has focused on tying together transportation systems analysis and policy. We do this by funding research, graduate and undergraduate education, and special studies for federal, state and local governments. We also support events that bring together professionals, researchers, and students to confront key issues and identify emerging areas of interest. Our activities are made possible through generous grants from the US Department of Transportation and Caltrans.

One of the most prominent ways UCTC helps bridge research and practice is through its annual conference on transportation, land use and the environment held at UCLA's Lake Arrowhead center. Now entering its 20th year, this event brings together leading practitioners, researchers, and elected officials to debate current policy issues. Last October's conference theme was "Economic Crisis as Opportunity for Reform." The attendees generally agreed that transportation policy needs a major overhaul. The challenge presented by global warming suggests that at every level of government, transportation policy needs to be better coordinated with land use, energy, and public health policy. Change at this scale will require national leadership. Yet the federal legislation that authorizes transportation funding recently expired, and we appear to be in a cycle of continual short-term extensions simply to keep the system on autopilot.

There is room for optimism, however. Amid the gloom of the economic crisis, it is easy to forget how much progress we have made. In the years since the first Arrowhead conference, California has introduced two successful congestion pricing programs (on State Route 91 in Orange County and Interstate 15 in San Diego). The state has long been a leader in envi-

ronmental policy, and today it is at the forefront of reducing the transportation sector's carbon footprint, having recently passed pioneering climate change legislation (AB 32 and SB 375). California has been, and can continue to be, a beacon of enlightened transportation policy.

One goal of UCTC is to give policymakers the information they need to enact wise and innovative transportation policies. *Access* magazine is an important way for us to disseminate that information. Several articles in this issue focus on a complex subject that generates many questions—transportation infrastructure and how we use it and pay for it. Lisa Schweitzer and Brian Taylor address one of the toughest questions of all: who pays for transportation infrastructure, and is the payment structure fair? Two other articles focus on sidewalks, an oft-ignored part of transportation infrastructure. Anastasia Loukaitou-Sideris and Renia Ehrenfeucht consider how walking has dwindled, which is ironic given that local regulations have tended to ban many sidewalk uses in the name of making it easier for pedestrians to walk. Donald Shoup suggests a creative way to finance sidewalks in these cash-strapped times.

Andrea Osgood examines another undervalued part of our infrastructure—curb parking spaces owned by cities. She argues that local governments can use this resource to encourage carsharing by reserving some spaces and making them free or discounted for shared cars. Finally, Karen Chapple and Carrie Makarewicz challenge the conventional wisdom that transportation infrastructure needs to be expanded in the name of economic development. California's most thriving businesses, they find, are in central cities, where infrastructure already exists.

We hope that this and future issues of *Access* will help UCTC-funded research inform and inspire policy and practice for years to come.

*Robert Cervero
Karen Trautenberg Frick*

Just Road Pricing

BY LISA SCHWEITZER AND BRIAN D. TAYLOR

ECONOMISTS HAVE LONG ADVOCATED road pricing as an efficient way to reduce congestion and improve the environment. Many critics, however, object to road pricing on the grounds that it unfairly burdens low-income drivers. Implicit in these objections is the idea that existing transportation finance methods burden the poor less, or at least spread the burden more fairly. Most of the equity concerns about road pricing stem from the fact that it is regressive; that is, poorer people spend a larger share of their incomes on tolls than do wealthier people. But in the US, road systems are financed primarily through fuel taxes, vehicle registration fees, property taxes, and, increasingly, sales taxes—all of which are also regressive. Thus the relevant question is not simply whether road pricing is regressive, or even if it will burden the poor. The relevant question is whether road pricing will burden the poor *more* than other ways of paying for roads.

Lisa Schweitzer is an associate professor in the School of Policy, Planning, and Development at the University of Southern California and a fellow of the Brookings Institution. Brian D. Taylor, AICP is Professor and Chair of Urban Planning and Director of the Institute of Transportation Studies in the UCLA School of Public Affairs.



This question of road pricing’s fairness is particularly important now because traditional sources of revenue for transportation infrastructure are drying up. Travel is increasing (as are concerns about its social and environmental costs) but the buying power of fuel taxes has been declining for decades. Governments have responded to these funding shortfalls in a number of ways. Some have borrowed money to finance new roads, and some have started tolling roads. Many, however, have turned to general taxes, especially sales taxes, which have proven popular among voters and elected officials. Why are sales taxes, unlike other taxes, so popular? Sales taxes are automatically collected a few cents at a time from all consumers, and are hidden in a large number of transactions. So with sales taxes, unlike property or income taxes, it is almost impossible for residents to see how much they pay over the course of a year. The ease and relative opacity of the sales tax are keys to its ubiquity. Sales taxes also make it easy for cities and counties to shift part of the tax burden onto visitors who spend money in the taxing jurisdiction—the strategy cleverly described by the Monty Python comedy troupe as “taxing foreigners living abroad.” But the fact that sales taxes are popular doesn’t make them inherently fair or effective. >

FOR WHOM THE ROAD TOLLS



We should begin by defining some terms. Arguing that a policy proposal is “fair” assumes that fairness has a set definition, which of course it does not. Fairness is often in the eye of the beholder; what is consummately fair by one definition might be intolerably unfair by another. One common way to measure the fairness of a tax is to ask if it is progressive or regressive. We define a tax (or other charge) as progressive if its burden is proportionally greater for those with higher incomes than for those with lower incomes. The American income tax system, which imposes a higher tax rate on higher income people, is progressive. Likewise, a tax is regressive if its burden falls proportionally more heavily on those with lower-incomes than those with higher-incomes. A typical sales tax, where all consumers pay the same rate (say, 10 percent of purchase price), is regressive, because the tax burden for poor people will be larger as a share of overall income than it will be for rich people. In *absolute* terms, of course, wealthier people pay more in sales taxes than poorer people, because they spend more. But regressivity is a measure of proportional burden, and sales taxes paid as a percentage of income tends to fall as incomes rise.

“Road pricing” is the practice of charging drivers in rough proportion to the costs (congestion delay, damage to roadbeds, emission of pollutants, etc.) they impose on others. Long the apple of economists’ eyes, road pricing can take many different forms. In the US, High Occupancy/Toll, or HOT, lanes are the most common type of priced road. HOT lanes impose congestion tolls on only part of a multilane road, giving drivers the option of paying to drive in the uncongested toll lanes, or of driving for free in the unpriced-but-congested lanes. Many of these facilities also allow carpoolers to use the priced lane for free or at a reduced rate. HOT lanes are a good illustration of how elusive the concept of “fairness” can be. In one sense, HOT lanes are eminently fair, because no one is forced to pay—drivers always have the option of remaining in the free, slow lane. In another sense, however, HOT lanes are unfair, because they discriminate based on ability-to-pay. All drivers pay the same toll, and the toll is a larger burden for those who have only a little money than it is for those who have a lot. HOT lanes are therefore regressive. For this reason critics call HOT lanes “Lexus Lanes,” and argue that they make it easy for the rich to buy their way out of congestion, while leaving the poor stuck in traffic.

There is truth in both sides of the argument. Only users pay for HOT lanes, but poor people certainly have a harder time paying, and are therefore less able to be users. On average, wealthier drivers use paid lanes more than poor drivers do (just as they spend more on gas, drive nicer cars, and drive more in general). But income is not the sole determinant of people’s willingness to pay, and there will be instances where low-income drivers are in enough of a hurry to pay their way into uncongested lanes. So while a low-income single mother might not usually pay to bypass traffic, she will do so gladly when rushing to avoid late pick-up fees at daycare. There is also some evidence that HOT lanes pull travelers out of free lanes, and this can make even the free lanes move faster. But does this make the HOT lane fair?

COMPARING TOLLS AND SALES TAXES

In the abstract, it might be difficult to determine if a HOT lane is fair. But the more important question is whether tolls are fairer than a sales tax. For a given road, how much would different households pay in congestion tolls compared with what they pay in sales taxes? We attempted to answer this question by examining the 91 Express Lanes in

Southern California. The 91 Express Lanes are HOT lanes in the median of a 10-mile stretch of a congested freeway that links job-rich Orange County with housing-rich San Bernardino and Riverside Counties. The tolls in the Express Lanes serve two purposes: they regulate demand to keep the lanes moving at free-flow speed, and they finance the lanes' construction, operation, and maintenance. In our analysis, we compare the population who paid the \$34 million in tolls collected on the road in 2003 with the population who *would have paid* that amount had it been collected through sales taxes in Orange County that same year.

To make this comparison, we used data from the 2002 Bureau of Labor Statistics' Consumer Expenditure Survey (CES). We analyzed household consumer expenditures in Orange County at various income levels and estimated the household sales tax burden that would have accompanied those expenditures. To estimate 91 Express Lanes users' toll payments by household type, we extrapolated from a survey that examined both travelers in the Express Lanes corridor and a comparison sample of people who traveled in the parallel free lanes.

WINNERS AND LOSERS

In 2003 the 91 Express Lanes raised \$34 million in tolls. All of this money was, naturally, paid by users of the HOT lanes. Our question, again, was where the money would have come from if the same funds had been raised through sales taxes. Specifically, we examined the effects of such a change on three groups: the poor (people whose incomes are below \$25,000), the rich (people whose incomes are above \$120,000 a year), and those who pay county sales taxes but rarely or never use the toll lanes. (There is considerable overlap between the poor and the non-user group because the poor tend to be non-users).

We found that switching from tolls to sales taxes would shift the burden of paying for the road from users to non-users, and away from middle-income people and onto both >

The question is not whether road pricing will burden the poor, but whether it will burden the poor more than other ways of paying for roads.





the rich and the poor. People in the poorest households in Orange County almost never use the 91 Express Lanes. So while few of the poor enjoy the time savings of travel in the tolled lanes, they also don't pay for the road space that benefits others. But these same poor households pay up to 4 percent of their income each year in sales taxes. Had the lanes been financed by a sales tax, Orange County's poorest households would have paid over \$3 million of the \$34 million needed to fund the facility in 2003. The richest households, for their part, would lose the most in absolute terms, because they buy lots of goods and services subject to sales taxes.

With tolls, the burden of the Express Lanes falls on the relatively small group of people who choose to pay, and who as a consequence enjoy the time savings the lanes provide. With sales tax finance, virtually all users of the 91 Express Lanes would pay considerably less than they do now, because so many nonusers would pay. In 2003, this burden shift would have benefited frequent users of the 91 Express Lanes by around \$700 a year. The additional costs to each sales-tax-paying "loser," by contrast, would be relatively small, on the order of \$5 to \$80 per year, depending on the household type. But the relative size of this burden transfer does not obviate the question of whether people who don't use the lane should subsidize people who do. If the answer is "yes," the underlying logic implies that *any* public expenditure, no matter how small its benefits, can be justified, so long as the cost is spread over a large enough base of taxpayers. It also implies that those who drive least should, with every purchase they make, help pay for roads for those who drive most.

One caveat: our analysis examined sales tax payments by Orange County residents. But not all sales taxes collected in Orange County are paid by residents, just as Orange County residents pay some of their sales taxes outside of the county. And because Orange County is home to Disneyland, two other major theme parks, beach resorts, and professional sports teams, it “imports” sales tax paying residents from other counties. But the fact that some of the sales tax burden is exported does not reduce the tax’s regressivity—it may, in fact, worsen it if the visitors to the County are, on average, less affluent than Orange County residents.

CONCLUSIONS

Is road pricing regressive with respect to income? The short answer is yes. Whenever members of lower income groups pay for services, they tend to pay a larger share of their income than do the wealthy. But whether congestion tolls are regressive is an incomplete, and probably misleading, way to understand the fairness of tolls. A regressive charge is not automatically an unfair charge, and in public finance we frequently must decide between regressive alternatives, not between a regressive and a progressive choice. Hence the more relevant question is comparative: are congestion tolls fairer than other means of transportation finance?

Our examination of the 91 Express Lanes in Orange County, California finds that transportation sales taxes are doubly unfair. They disproportionately burden the poor *and* those who drive little or not at all. We find that the heaviest users of the 91 Express Lanes—and the largest beneficiaries of them—are primarily from middle- and upper-middle income households both inside and outside of Orange County. From a regional planning perspective, funding freeway capacity with sales taxes is a pro-auto/pro-driving policy that taxes all residents, rich and poor alike, to provide benefits to a much smaller group of drivers and their passengers.

This analysis has focused on one side of the ledger: the question of who pays. But transportation systems have both costs and benefits. Indeed, the access benefits of travel are transportation’s *raison d’être*. So while regressivity can be viewed as a *cost* of road pricing (and of most other ways of paying for roads), pricing confers transportation *benefits* that other transportation finance mechanisms do not. Tolls and taxes can both pay to build a road. But congestion pricing can also reduce traffic delays, fuel consumption, and vehicle emissions, often to a surprising degree. Sales tax finance for transportation, by comparison, does none of these things.

It is widely understood in public finance that a transparent payment mechanism is a good payment mechanism. Those who use scarce public resources—including space on the roads—should pay for what they use, in proportion to what they use, and *know* that they are paying. Knowing that resources have a cost is essential to using those resources judiciously, and our road network will function better when drivers pay the costs of their travel. It is entirely appropriate to worry about the burden tolls place on the poor, but the solution is not to forgo tolls altogether. We should not subsidize *all* drivers (and charge *all* consumers) to help the small number of poor travelers who use congested freeways in the peak hours and peak directions. Rather we should help those who are less fortunate, and see to it that the rest of us pay our own way on the roads. ♦

FURTHER READING

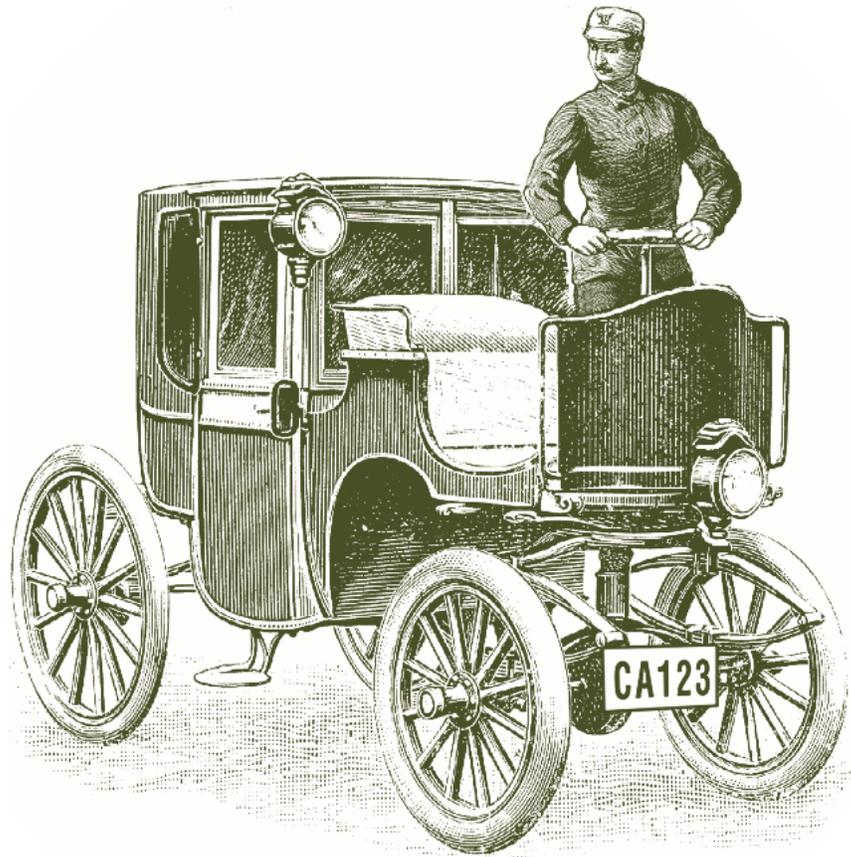
Lisa Schweitzer. 2009. “An Overview of the Empirical Research on Transportation Finance,” Sponsored by the National Academy of Sciences Transportation Research Board as a resource paper for Future Directions in Transportation Finance Policy, Washington, DC, September 1, 2009. Available from the author.

Lisa Schweitzer and Brian D. Taylor. 2008. “Just Pricing: The Distributional Effects of Congestion Pricing and Sales Taxes,” *Transportation*, 35(6): 797–812.

Brian D. Taylor and Rebecca Kalasuskas. Forthcoming. “Addressing Equity in Political Debates over Road Pricing: Lessons from Recent Projects,” *Transportation Research Record: The Journal of the Transportation Research Board*.

Brian D. Taylor and Alexandra T. Norton. 2009. “Paying for Transportation: What’s a Fair Price?” *Journal of Planning Literature*, 24(1): 22–36.

Matthew Barth and Kanok Boriboonsomsin. 2010. “Traffic Congestion and Greenhouse Gases,” *Access*, 35(Fall): 2–9.



On-Street Parking Spaces for Shared Cars

BY ANDREA OSGOOD

IN ADDITION TO THEIR MANY ADVANTAGES, cars also cause problems: traffic congestion, air pollution, energy consumption, and even reduced mobility for those who don't own a car. *Carsharing* is a new form of vehicle ownership that can help address these problems. Membership in a carsharing organization increases access to cars but also encourages judicious use of them.

In essence, carsharing converts the high fixed costs of owning a car (purchase price, insurance, taxes, and maintenance) into smaller units—the per-hour or per-mile price of driving a car. By spreading the fixed costs of a car over many users, carsharing makes automobile travel an option for those who cannot afford to buy their own vehicle. But because users pay a high marginal cost for every hour or mile they drive, carsharing also gives members a strong incentive to drive less. In this way, carsharing can both increase mobility for people who might otherwise be carless and also reduce auto travel among members who previously owned their own car. This reduction in auto travel carries a host of benefits to society, from reducing local traffic congestion to slowing global climate change.

WHERE WILL THE SHARED CARS PARK?

The largest barrier to expanding carsharing is often finding and financing parking spaces. An effective way for cities to encourage carsharing, therefore, is to offer carsharing firms free or discounted parking. Cities are in a unique position to offer these much-needed parking spaces because they control a large and ubiquitous supply of curb spaces that they can make available to carsharing organizations on favorable terms.

Free or discounted parking in any location, off-street or on-street, will help support carsharing. On-street spaces, however, offer three special benefits for shared cars.

Visibility. Shared cars are not hidden away in off-street lots, but are placed on streets where everyone can see them. This visibility increases the general awareness of carsharing, and may also remind car owners of the inconvenience and hassle of parking their own car.

Convenience. Dedicated curb spaces are nearly as luxurious and worry-free as valet parking or a private garage near one's front door. When returning home, these dedicated parking spaces allow members to simply pull up to the curb and leave the car. Drivers do not have to worry about finding a space, or about being late because they have to cruise around the block. Most shared cars are located in dense areas with scarce and expensive parking, precisely the areas where residents who own cars but do not have off-street parking spend quite a bit of time cruising the streets in search of a spot to park.

Availability. On-street spaces are often the main source of parking in some areas, and car ownership is difficult in these areas as a result. These places are natural targets for carsharing, but without city partnership, carsharing organizations would be unable to expand in these places because they too would have no place to store their cars. ➤



Andrea Osgood received her MA in Urban Planning at UCLA, and currently works on transit-oriented development for Eden Housing. This article is drawn from her MA research at UCLA, which won the Nevill A. Parker Award in 2007 from the Council of University Transportation Centers (andrea.osgood@gmail.com).



DESIGNING AN ON-STREET PARKING POLICY FOR SHARED CARS

A city that wants to support carsharing by reserving curb spaces for shared cars must develop a policy to allocate the curb spaces. For example, how much, if anything, should the city charge carsharing organizations for the dedicated spaces? Should the spaces be auctioned? What is necessary to manage the dedicated spaces (procuring and installing signage, striping the pavement, and keeping the spaces clean)? To answer these questions, I conducted cases studies of cities that have adopted ordinances to allocate curb parking spaces to shared cars.

When a city dedicates on-street parking for carsharing organizations, it also limits the public's access to the curb spaces. This loss of access, combined with the fact that local jurisdictions would be allowing private companies to profit from a public resource, can make the allocation of on-street spaces controversial. While there is ample precedent for this kind of privatization—cities across the US regularly dedicate sections of streets for taxi zones, hotel and restaurant valet areas, and commercial loading zones—concerns over unfair allocation of public resources are legitimate, particularly if carsharing organizations are allowed to use street spaces at no cost.

In order to diffuse these concerns, any policy that allocates on-street parking spaces to carsharing organizations should be crafted to ensure that the public realizes a return that exceeds the value of these spaces. This return can be realized through direct payments to the municipality, or through other, non-monetary benefits such as reduced air

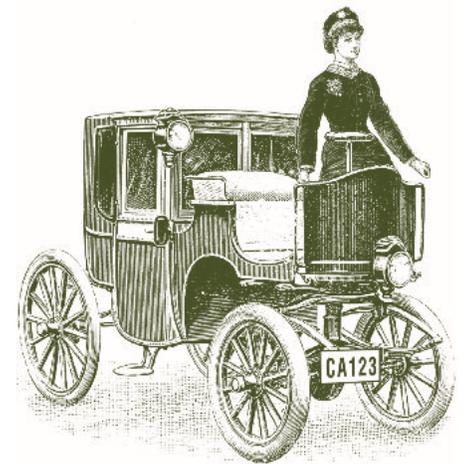
pollution or increased mobility options for low-income populations. Either way, this return should be guaranteed in a privatization agreement that ensures the public gets the best deal possible.

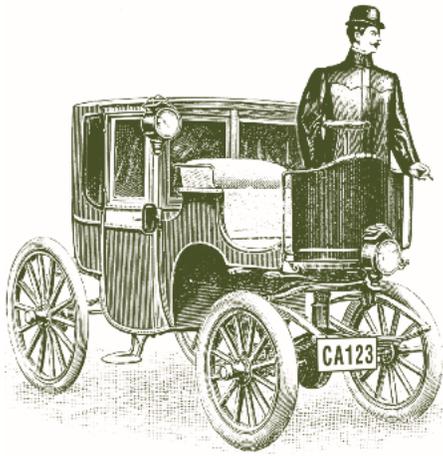
CASE STUDIES OF ON-STREET PARKING POLICY: KEY FINDINGS

Several North American cities are currently drafting, or have already implemented, on-street parking policies for carsharing. These jurisdictions include Arlington County, Virginia; San Diego, California; Seattle, Washington; Portland, Oregon; Vancouver, British Columbia; and Washington, DC. In their approach to parking for carsharing, these cities adopted a range of policy approaches. In what follows I summarize the key findings of my case studies that examined these approaches.

- *Legislative structure.* Setting aside street space for a private organization requires legislative action. In general, cities break the legislative mechanism into two parts: (1) an ordinance or other official action by a governing body, and (2) the administrative details. The first component sets out broad parameters for the policy, including key political provisions, and then delegates authority to another department to establish the administrative details of the program, which can be updated and modified as necessary.
- *Fees.* Few cities initially charged carsharing organizations for on-street spaces. As carsharing operators have become more established, however, several cities—such as Vancouver, Portland, and Washington, DC—have moved toward revenue-neutral fee structures; the city sets a fee for each space to defray the public costs of their program and to recoup any lost meter revenue.
- *Signage and demarcation of spaces.* Several cities use orange “Options Zone” poles (first developed in Portland) to designate their on-street carsharing spaces. These brightly colored poles include images meant to highlight alternative transit options such as biking and walking. When combined with brand-neutral marketing brochures and places to secure bikes, these poles help the public to learn more about carsharing and facilitate the use of bikes to get to and from shared cars. Tow-away signs and pavement markings appear to be the most effective way to ensure that other drivers do not mistakenly park in carsharing spaces.
- *Results.* Cities often provide multiple forms of support to carsharing organizations, so isolating the effect of providing on-street parking spaces can be difficult. However, evaluations have consistently shown that carsharing membership increases as more vehicles are added, and that members who previously owned one or more cars reduce their vehicle travel and/or sell a car.

The growth in carsharing can greatly benefit even those who do not participate in it. One study found that each shared vehicle removed 9 to 13 other vehicles from the road. Fewer vehicles can lead to significant reductions in traffic congestion, air and water pollution, and parking infrastructure. ➤





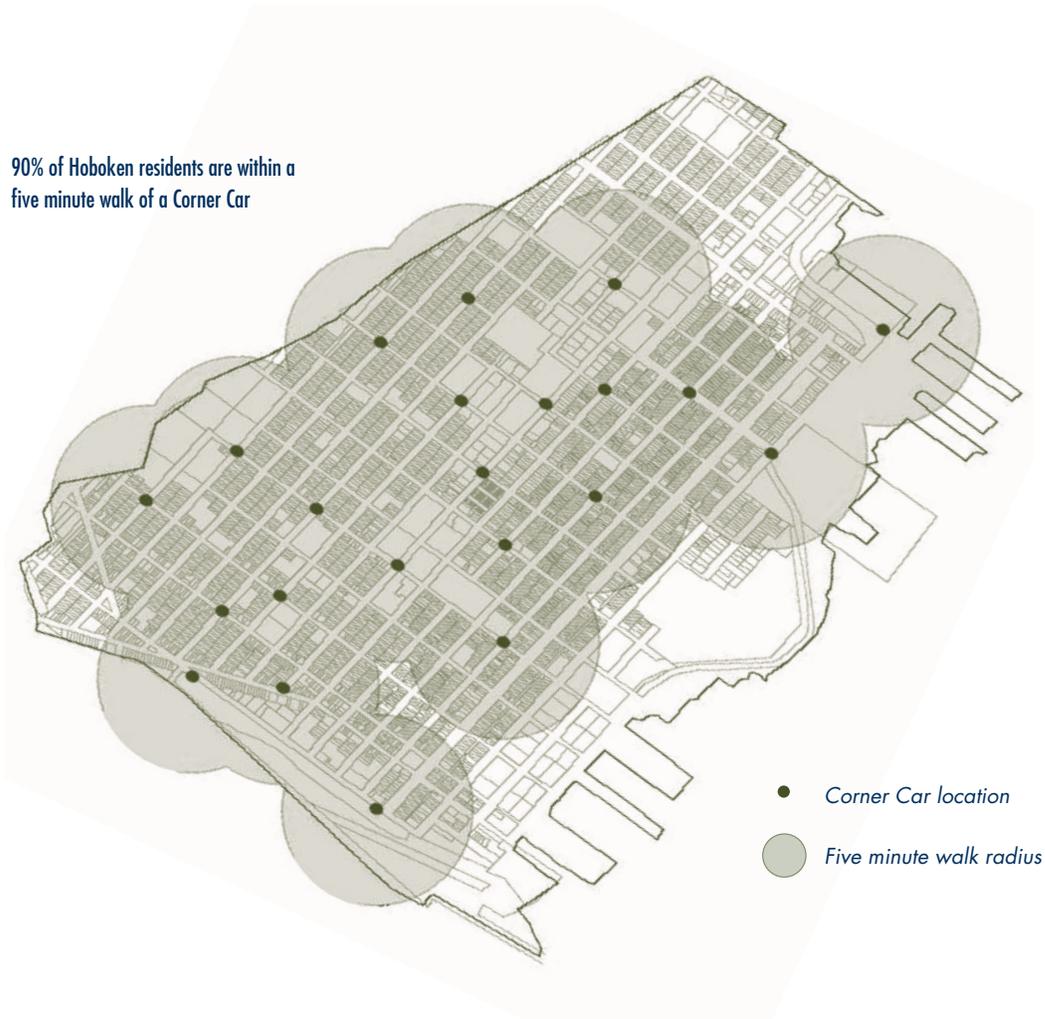
PLANNING FOR SHARED CARS

Cities can go beyond responding to carsharing companies' requests for on-street parking spaces and proactively plan the location of these spaces. Hoboken, NJ, has established its citywide Corner Cars program that places shared cars in on-street spaces at corners throughout the city so that 90 percent of the population lives within a five-minute walk of at least one carsharing location.

Because each shared car in Hoboken has been estimated to replace 17 private vehicles, dedicating the corner spaces to shared cars can increase the availability of on-street parking for everyone else. According to Hoboken's Transportation and Parking Director Ian Sacs, "Instead of taking on millions of dollars in taxpayer debt for structured parking, residents who switch to carsharing will save thousands of dollars. It's the 21st Century solution to contemporary urban parking woes."

Hoboken requires the fleet of shared cars to maintain an average of 35 miles per gallon. If each shared car replaces several privately-owned cars that have lower fuel efficiency, the on-street Corner Car program can significantly reduce the city's carbon footprint.

90% of Hoboken residents are within a five minute walk of a Corner Car



RECOMMENDATIONS

Any policy that dedicates on-street spaces for shared cars must have a mechanism to verify and ensure the benefits of carsharing, particularly if local jurisdictions choose not to charge a market-based fee for these spaces. A valid verification mechanism can address concerns about privatization and also ensure that the public realizes a return on its investment. The following provisions should be included in any agreement between cities and carsharing organizations:

- *Ensure that vehicles emit minimal pollutants.* Require that all vehicles parked in on-street spaces meet the EPA's ultra-low-emissions-vehicle standards, or vary the fees based on the emissions profile of each shared car parked.
- *Ensure increased mobility for low-income populations.* Require a certain number of vehicles in low-income neighborhoods.
- *Verify benefits.* Require that the carsharing organizations provide annual travel behavior data on their members to the municipality.
- *Ensure expansion—not just subsidization.* The city's investment should help carsharing organizations expand, not simply reduce their current operating costs. Many carsharing organizations have at least some vehicles parked in off-street private locations, and a poorly-designed agreement could allow the organizations to move these cars from off-street spaces (paid) into the on-street ones (free). The organization gains substantially when this happens, but the public doesn't. To prevent this sort of outcome, cities should mandate that any cars parked in private off-street lots remain there for a period of time after the street spaces are dedicated.

CONCLUSIONS

On-street parking spaces for shared cars will encourage the growth of carsharing because on-street spaces create extra value in two ways. First, the time savings and convenience of on-street spaces can attract new members to carsharing organizations. Second, the great visibility of shared vehicles prominently parked on the streets will serve as advertising that can show the benefits of membership.

Some drivers may oppose dedicating on-street parking spaces to shared cars because it will reduce access for privately-owned cars. Nevertheless, carsharing's benefits are well established. If carsharing reduces vehicle travel, particularly at peak hours, it can reduce traffic congestion, air pollution, and energy consumption. It can also increase mobility for a city's poorest residents. Reducing the on-street parking available to privately owned cars might even encourage more people to become carsharing members, creating a positive cycle that will further increase the benefits of carsharing. Each on-street parking space dedicated to a shared car can benefit many people, including those who do not carshare. ♦

FURTHER READING

Arlington County Commuter Services. 2006. *Arlington Carshare Program*. Department of Environmental Services, Division of Transportation Website (http://www.commuterpage.com/pdfdocs/ArlCo_CarshareReport_2006.pdf).

Robert Cervero, Aaron Golub, and Brendan Nee. 2007. "San Francisco City CarShare: Longer-Term Travel-Demand and Car Ownership Impacts," *Transportation Research Record, Journal of the Transportation Research Board*, no. 1992: 70–80.

Clayton Lane. 2005. "PhillyCarShare: First-Year Social and Mobility Impacts of Carsharing in Philadelphia, Pennsylvania," *Transportation Research Record, Journal of the Transportation Research Board*, no. 1927: 158–166.

Elliott Martin, Susan Shaheen, and Jeffrey Lidicker. 2010. "Carsharing's Impact on Household Vehicle Holdings: Results from North American Shared-Use Vehicle Survey," presented at the Transportation Research Board Annual Meeting, Washington, DC, 2010 (<http://pubsindex.trb.org/view.aspx?id=911080>)

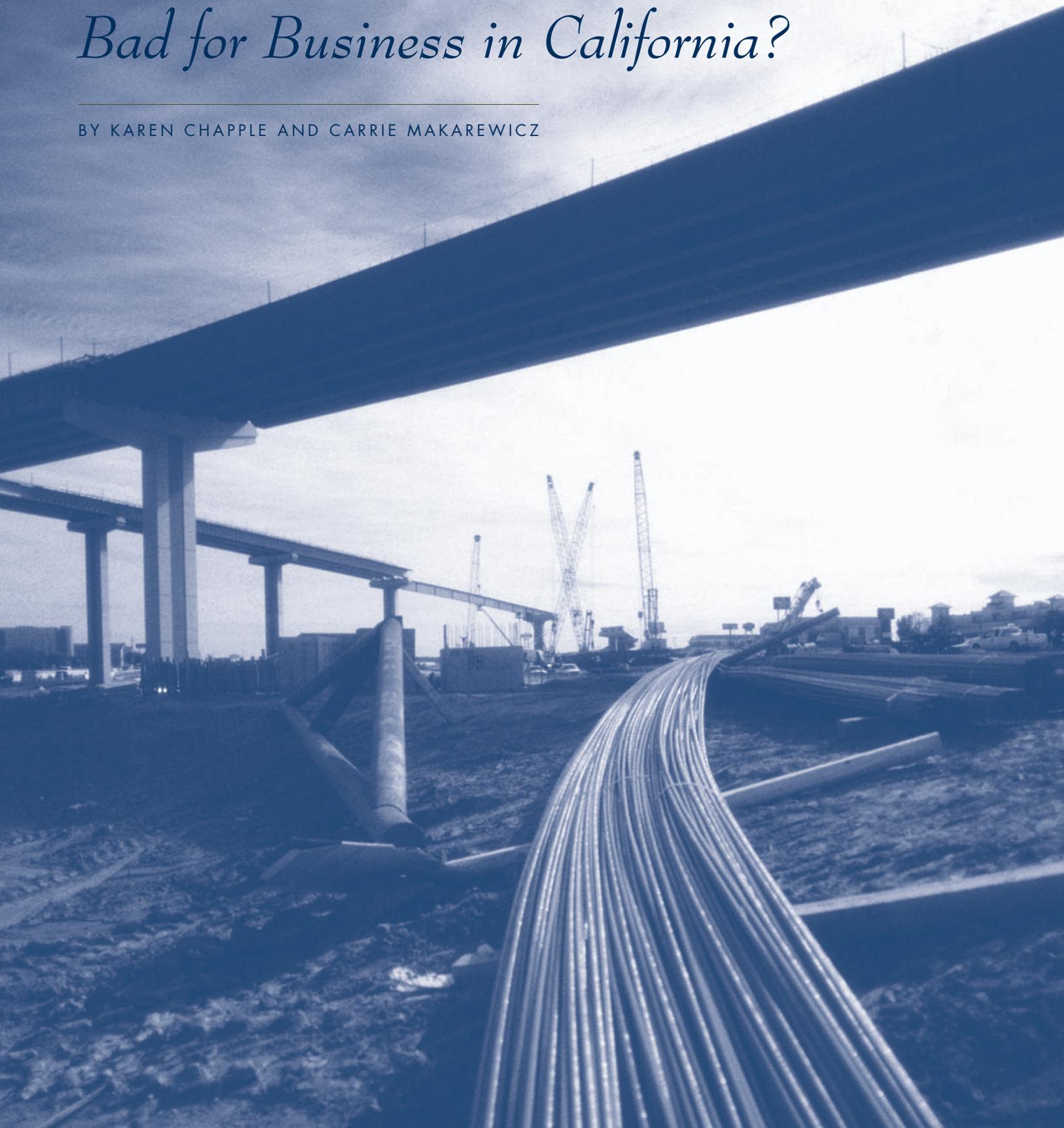
Adam Millard-Ball, Gail Murray, Jessica ter Schure, Christine Fox, and Jon Burkhart. 2005. "Car-Sharing: Where and How It Succeeds," TCRP Report 108 for the Transportation Research Board.

Susan Shaheen, Adam Cohen, and Elliot Martin. 2010. "Carsharing and Parking Policy: A Review of North American Practices and San Francisco Bay Area Case Study," Forthcoming in *Transportation Research Record*.

Ian Sacs, 2010. "Parking Garages Are So Last Century," Planetizen, June 17 (<http://www.planetizen.com/node/44698>).

RESTRICTING NEW INFRASTRUCTURE: *Bad for Business in California?*

BY KAREN CHAPPLE AND CARRIE MAKAREWICZ



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LANNERS THROUGHOUT CALIFORNIA are preparing to implement SB 375, a law that requires metropolitan planning organizations (MPOs) to consider the impact of land use decisions on climate change, and requires that future planning decisions reduce greenhouse gas emissions. Among other provisions, the bill encourages municipalities and developers to concentrate infrastructure and development in urban areas or close to public transit hubs in order to reduce vehicle use. The bill also includes a number of provisions to better coordinate the provision of housing and transportation infrastructure.

SB 375 could have profound effects on California's cities. If MPOs and local governments change their housing, transportation, and land use plans in response to the law, then infrastructure funds, private investment, and housing will likely be steered into more compact patterns, and development will occur primarily in places where it already exists.

What will compact development patterns mean for business and job creation? Firms, like households, have been decentralizing for decades, largely because of falling transportation and communication costs. As a result, the conventional wisdom is that the suburbs and exurbs are "business friendly," and that the ease of locating outside central cities has allowed businesses to expand more rapidly than they would have in the urban core.

If business growth depends on the ability of firms to move to outlying areas, then SB 375, in its effort to help the environment, might harm the economy. Infrastructure planning that encourages infill development, and that constrains public funding for new roads and interchanges in outlying areas, could limit the growth of businesses in California. Indeed, the idea that SB 375 might stifle economic growth seems to be the consensus among many of the state's major business players. The California Chamber of Commerce, the California Manufacturers and Technology Association, the General Contractors of California, and the California Retailers Association all opposed the bill. Lobbyists for these groups raised concerns that the bill would hinder investment in new infrastructure and leave projects that don't support infill vulnerable to lawsuits. Opponents also argued that SB 375 would increase the cost of any development that significantly increases auto traffic. The developers of these projects would need to pay for their own infrastructure. Developers faced with these new infrastructure costs might pass them on to end users, thereby increasing the costs for their tenants. Or they might scale back or forgo projects, which would limit location options for businesses and drive up costs region-wide.

Are the opponents of SB 375 correct to be concerned? Does business growth in California in fact depend on the ability of firms to relocate outward, particularly to places in need of more transportation infrastructure? A look at California business growth patterns—by studying more than three million records of business relocations, startups, and expansions over a fifteen-year period—suggests the reality is more complicated. First of all, inhibiting business relocation is not a big concern, because most businesses never >

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relocate. Almost all employment growth occurs when new businesses are formed or when firms expand where they are, not when an existing business moves somewhere else. And while it is true that new businesses tend to start in places with plentiful infrastructure, it is not clear that infrastructure is the decisive factor in the location decision. Location decisions appear instead to be driven by concerns about the labor force (for some firms, the availability of a college-educated workforce, for others, the presence of low-wage labor) and housing (often the concentration of newer, owner-occupied housing in the area). Further, there is little evidence that new firms necessarily prefer the suburbs over central cities. If we compare central cities and suburbs that have roughly the same level of infrastructure, three times as many growing firms locate in the central cities as choose the suburbs.

None of this is to say that infrastructure isn't important; firms overwhelmingly prefer to be near highways and airports. But transportation infrastructure isn't everything, and it certainly isn't the only thing. In the remainder of this article we first review what researchers know about firm location, and then discuss our own research on business expansion in California.

WHAT WE KNOW ABOUT LOCATION, RELOCATION, AND INFRASTRUCTURE

Planners, economists and regional scientists have amassed a large body of research on the factors that influence business location and relocation decisions. A firm's location depends on the costs and benefits associated with a particular place. Transportation infrastructure is a benefit: it improves access to suppliers and customers, and to employees and potential employees. But transportation infrastructure is just one consideration, and a lot of research suggests that the presence of a good workforce is more important than the presence of a highway. Firms that require skilled labor tend to locate in places that have amenities skilled people find attractive: good schools, cultural and recreation opportunities, high-quality housing, and transit. Businesses that rely on low-wage labor, by contrast, tend to locate near large groups of immigrants and in places with plentiful rental housing. To the extent they can, all businesses try to distance themselves from dis-amenities like congestion, crime, pollution, and high local taxes.

Although policymakers sometimes worry that a poor "business climate" will drive business away, most evidence suggests this fear is overblown. Once firms establish in a specific location, only a small percentage of them ever move, mainly because moving requires large amounts of money, time, risk, and uncertainty. And when a firm does move, it may be a mistake to assume that it does so out of dissatisfaction with its current location. Some researchers suggest mergers, acquisitions, and takeovers are often as much the cause of a move as is the local business or physical environment.

By themselves, then, limits on new suburban and exurban infrastructure should be unlikely to harm California's economic growth. If the law prevented new infrastructure in places with large labor forces and plentiful housing (i.e., large population centers), that might be different, but that is the opposite of the law's intent.

TRACKING BUSINESS GROWTH IN CALIFORNIA

Business growth can be measured in two ways: by counting firms, and by counting jobs. The Dun and Bradstreet National Establishment Time Series (NETS) data for California lets us do both. Dun & Bradstreet reports annually on almost all the registered firms in California. We focused on firms with at least two employees, of which there were about

FIGURE 1

Major transportation infrastructure in California



1.5 million active in California in 2005, and of which there were just over 3 million between 1990 and 2005. Of the firms active in 2005, a slight majority, 56 percent, were in the state’s 91 central cities, while 41 percent were in suburbs or other non-central-city parts of metropolitan areas. Only two percent of the firms were not in an MSA and not in a central city. The two largest regions, the nine-county Bay Area and three-county South Coast (Los Angeles, Orange and Ventura counties), were home to almost two-thirds of the state’s firms. Figure 1 displays the regions, jurisdictional boundaries, and major infrastructure we used for our analysis.

From 1990 to 2005, the largest source of business growth (accounting for 60 percent of new firms and 47 percent of new employees) was startups. The second largest contributor to growth was expansions (29 percent of firms and 36 percent of employees). The relocation of firms—either from within California or from other states—generates only a small share of growth (about 11 percent of firms and 17 percent of employees). ➤

THE IMPORTANCE OF INFRASTRUCTURE TO FIRMS THAT RELOCATE

When firms do relocate, they almost always move to the same type of place, i.e. from a central city to a central city or from a suburb to a suburb, and many stay within the same city or county (Figure 2). Only seven percent of relocating firms moved to a different region, and only four percent left California altogether. So very few regions saw their economies suffer because firms moved out, and still fewer saw their regional economies gain because firms moved in. In most of California's local jurisdictions, fewer than 5 percent of the existing businesses are the result of relocations. Only in a small handful of jurisdictions, primarily in the Imperial Valley and the state's rural northeast, do relocations account for between 16 and 27 percent of the existing businesses. The firms that move into these places are disproportionately likely to be in the agricultural, construction, manufacturing, or public administration sectors. And the high share of relocations in these places is primarily an artifact of their low initial number of firms, not because a large number of firms chose to move there.

The facts that firms rarely move, and that when they do they tend to stay near their initial location, suggest that the presence or absence of infrastructure is probably not a driving force in location decisions. Certainly infrastructure is important, but our analysis suggests that relocating firms also search for a good pool of labor, and a housing stock that suits the preferences of those potential employees. Hence firms that relocate to central cities often do so because the cities are closer to more rental housing, which can support a younger or lower-wage workforce. Firms moving to the suburbs, by contrast, will have increased proximity to owner-occupied housing and lower residential densities, which may help them meet their employees' housing and lifestyle preferences.

FIGURE 2

Where do firms go?

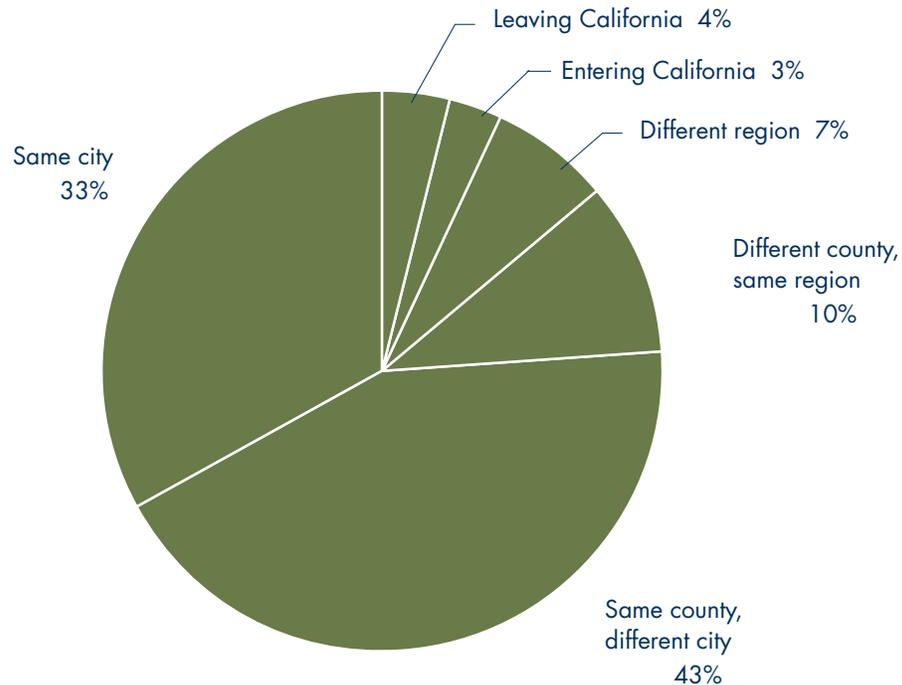
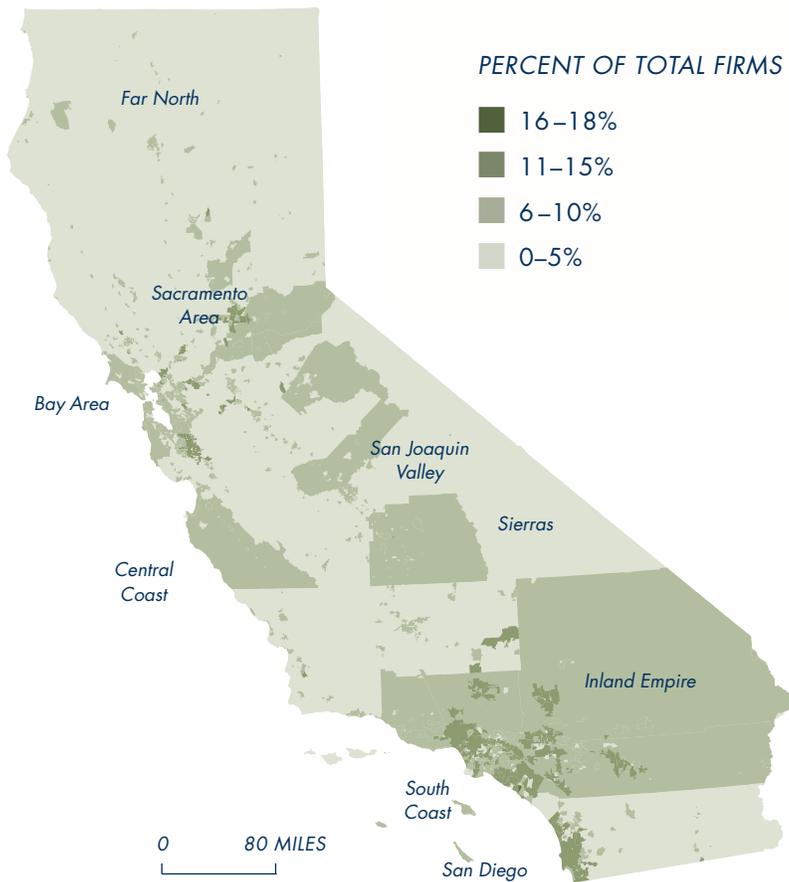


FIGURE 3

Startups as a percent of total firms by jurisdiction



THE IMPORTANCE OF INFRASTRUCTURE TO STARTUPS

In every sector except agriculture a newly-formed firm is more likely to locate where there is at least one highway or interstate, as well as a major airport. Figure 3 shows that startups are concentrated in California’s populous coastal regions, and in the central cities of the Central Valley. And there is a correlation between infrastructure and employment. New firms tend to be small; most have ten or fewer employees in their first year. Even so, in seven of the ten major industries, firms that start up in central cities near highways and airports employ more people than similar firms in jurisdictions that lack highways and airports.

As with relocations, however, housing and labor markets also contribute to a new firm’s location decision. In particular, the presence of immigrants in central cities plays an important role for startups—much more so than it does for relocations. The urban concentrations of immigrants in central cities might explain the disproportionate share of startups that begin in central cities, rather than suburbs, since immigrants provide inexpensive labor for business startups, often start small businesses themselves, and provide a large consumer base for other startups. ➤



THE IMPORTANCE OF INFRASTRUCTURE TO FIRM EXPANSION

Expanding firms are concentrated mostly just outside core urban areas, and like start-ups they are often within 10 miles of airports, highways and interstates. Some growing industry sectors—like manufacturing and wholesale firms, and Finance, Insurance and Real Estate (FIRE) firms—are more likely than others to concentrate in jurisdictions crossed by highways or within 10 miles of an airport. For example, almost two-thirds of expanding manufacturing and wholesale firms locate near transportation infrastructure, as do 59 percent of FIRE firms. And the most rapidly growing firms tend to be in infrastructure-rich areas: for instance, almost three-quarters of the new jobs that result from expansion in the manufacturing, wholesale, and FIRE sectors concentrate near highways and airports. The industry sectors less likely to look for close proximity (less than 10 miles) to highways and airports are agriculture, public administration, and construction, probably because of sensitivity to land costs, as well as proximity to their residential base of customers.

Our analysis shows that expanding firms, like new firms and relocating firms, also base their decisions on the type of housing available, and (like startups) many firm expansions take place near large populations of immigrants.

In sum, there is no denying that firms locate near transportation infrastructure. In 2005, nearly all firms (98 percent) were in cities crossed by highways or interstates, and within ten miles of a major airport. The preference for infrastructure remains if we examine increases in employment; 72 percent of all new jobs (and 61 percent of firms) develop in jurisdictions with local and interstate highways and that are less than 10 miles from a major airport.

On the surface, the fact that most firms are close to transportation infrastructure could lend credence to fears about SB 375. If businesses want to be close to transportation infrastructure, then restricting the expansion of that infrastructure could, logically, restrict the expansion of businesses as well. But our analysis suggests this is not the case, for two reasons. First, the most dynamic firms are located in the most urban areas of each region. If we compare central cities and suburbs that have the same level of highway and airport infrastructure, growing firms (whether expanding in place, starting up, or relocating) are three times more likely to locate in central cities than suburbs—even though overall just 56 percent of firms are in central cities. This suggests that the type and level of infrastructure needed to support fast business growth can be found in dense, already-built areas, not just in outlying greenfields. Second, our research shows that proximity to a major airport is one of the most important determinants of firm location. With or without SB 375, the state is unlikely to construct more major airports in the near future, for a host of reasons. So most business growth will probably take place near the 13 major airports we already have. And even if California did build a new major airport, it seems unlikely that it would do so in an undeveloped area. Airports are built where the demand for their services is highest, and this tends to be in or near areas that are intensively-developed now (10 of the state's 13 major airports are along the heavily-populated coast).

CONCLUSION

Fears that environmental legislation might impede economic growth are nothing new, and should not be cavalierly dismissed. Increased environmental protection often involves tradeoffs, and businesses do sometimes lose when the environment gains. In the case of SB 375's infrastructure restrictions, however, concerns about a chilling effect on business appear to be unwarranted. There is little doubt that expanding firms prefer to be near transportation infrastructure, but the recent history of California shows that firms can expand and stay close to infrastructure without leaving dense, already-populated areas. The businesses that have contributed to the majority of growth within the last 15 years have not been expanding on the urban periphery in search of new, undeveloped sites with little infrastructure and no highway. Rather they seek sites with existing major infrastructure that has been in place long enough to attract other city amenities, an ample labor force, and appropriate housing for their workers. In short, businesses can't expand without access to infrastructure, but businesses *can* get access to infrastructure without migrating to the periphery. Our analysis suggests that if anything, firms would like to see more (and more varied) housing options in areas that are already-developed. If this is the case, then by encouraging infill development SB 375 could very well help, not hinder, California's economic growth. ♦



FURTHER READING

Aleid Brouwer, Ilaria Mariotti, and Jos N. van Ommeren. 2004. "The Firm Relocation Decision: An Empirical Investigation," *The Annals of Regional Science*, vol. 38, no. 2: 335–347.

Karen Chapple, Sara Hinkley, and Carrie Makarewicz. 2008. "Business as Usual in California's Suburbs?: Exploring the Dynamics of Firm Relocation, 1990–2005," presented at the joint Congress of the Association of Collegiate Schools of Planning (ACSP) and the Association of European Schools of Planning, Chicago IL, July 6–11.

Paul Gottlieb. 1995. "Residential Amenities, Firm Locations, and Economic Development," *Urban Studies*, vol. 32, no. 9: 1413–1436.

Genevieve Giuliano. 2004. "Land Use Impacts of Transportation Investments: Highway and Transit," In *The Geography of Urban Transportation*, Chapter 9.

Andrew Haughwout. 1999. "State Infrastructure and the Geography of Employment." *Growth and Change*, vol. 30, no. 4: 549–566.

Jed Kolko and David Neumark. 2007. *Business Location Decisions and Employment Dynamics in California*. (Public Policy Institute of California). Available from www.ppic.org.

Chad Shirley and Clifford Winston. 2004. "Firm Inventory Behavior and the Returns from Highway Infrastructure Investments," *Journal of Urban Economics*, vol. 55, no. 2: 398–415.

Vibrant Sidewalks in the United States

Re-integrating Walking and a Quintessential Social Realm

BY ANASTASIA LOUKAITOU-SIDERIS AND RENIA EHRENFEUCHT

As A TRANSPORTATION MODE, walking is healthy for individuals and beneficial for the environment. Fifteen years ago, the US Surgeon General highlighted the importance of walking for exercise as a means of combating obesity, diabetes, and other diseases. Since then, a wealth of studies published in public health and medical journals have extolled the virtues of walking. Moved by concerns about climate change, energy, and congestion, transportation planners now view walking as an inexpensive and enjoyable activity that could replace short auto trips, thus reducing congestion and fossil fuel consumption. Yet despite the general consensus that walking brings many benefits, policymakers still aren't sure how to increase the amount of walking people actually do. One of the most obvious approaches is to improve pedestrian infrastructure. Walking is harder in places without good sidewalks, and the sidewalks in many cities are in terrible disrepair. Many other places have no sidewalks at all. But good sidewalks, while important, will not by themselves lead to more walking. Changes in the built environment are a necessary but not sufficient condition for a pedestrian-friendly city.

Urban areas where people enjoy walking have more than just a functional pedestrian infrastructure. Sidewalks are not like major streets, many of which are designed solely to move cars. Sidewalk users are more exposed to their environments than drivers, both because pedestrians are not encased in vehicles and because they move through their environments more slowly than do people in cars. For this reason sidewalk users also require more *from* their environments. A successful sidewalk is more than just a route for getting from Point A to Point B; it is also a place to abide, to meet others, and to participate in neighborhood life. Urban sidewalks, as Jane Jacobs once argued, are a city's "most vital organs," where people experience city life, enjoy neighborhood rhythms, and watch what goes on. Pedestrianism—moving on foot, in a wheelchair, or with other mobility devices—is only one dimension of the sidewalk experience. Sidewalks thrive as multi-use environments, not as pure pedestrian thoroughfares.

Many sidewalks in US cities lack the people and variety of activities that characterize sidewalks in Europe, Asia, or Latin America, but this was not always the case. Nineteenth and early twentieth century US sidewalks were vibrant spaces. As policy-makers began to perceive sidewalks exclusively as transportation infrastructure, however, they used the goal of unrestricted movement as >

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a justification to restrict other activities, including public speaking, vending, socializing and loitering. Removing these activities sapped the sidewalk of life and vitality. The singular view of streets and sidewalks as transportation routes, later combined with policies that overwhelmingly favored motorists over pedestrians, inadvertently made walking a less critical dimension of urban living.

Planners who want to reinvigorate pedestrian spaces today face a difficult challenge. Building infrastructure alone will not work, because people are more likely to walk in areas that host a diversity of uses. Some uses, however, potentially conflict—a panhandler and a shopper can occupy the same space, but the panhandler might make the shopper uncomfortable. Planners have tried to finesse this problem by encouraging *certain kinds* of uses, and by encouraging pedestrianism only in *certain places*, creating upscale pedestrian hubs and leisure destinations. These efforts at control often raise hard questions about democracy and legality, and in any event are rarely effective ways to encourage more walking. We propose that more people will walk or roll in wheelchairs when sidewalks are spaces that accommodate the full range of activities that make cities interesting.

In the remainder of this article, we first discuss how a singular focus on sidewalks as spaces of movement contributed to the decline of sidewalk life, and to walking as well. We then examine ways that cities will perpetuate this problem if they continue responding to urban complexity by providing spaces with narrow programs. Finally, we outline five purposes of sidewalks—movement, encounter, confrontation, survival and beauty—and argue that, unlike with automobiles, it is complexity, rather than uninterrupted movement that is central to vibrant pedestrianism.

THE RISE OF THE SINGLE-PURPOSE SIDEWALK

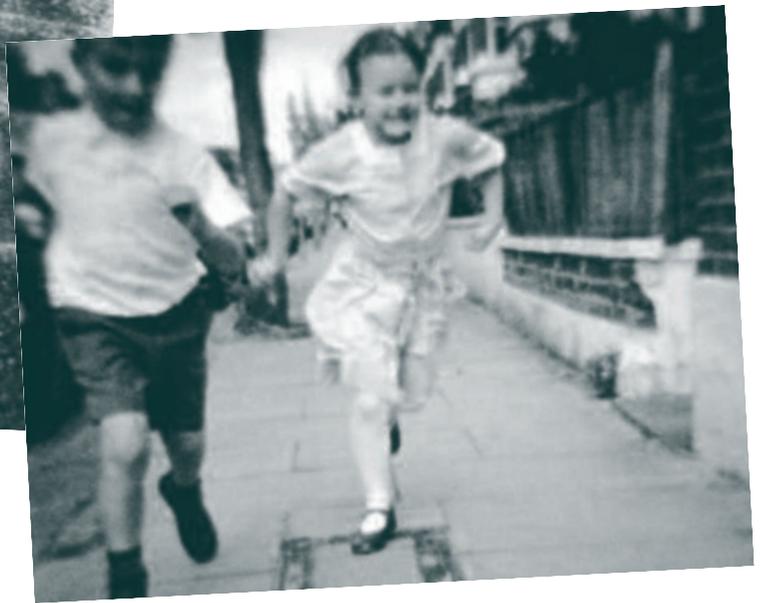
In the 19th century, curbs and sidewalks became common along heavily traveled city streets. These early sidewalks were often constructed by the abutting businesses and property owners. By the century's end, sidewalks had become important elements of the urban infrastructure, and thousands of miles of sidewalks had been paved in American cities. Because sidewalks were often paved before the rest of the street, they were the easiest place to walk, and the easiest place to carry out various economic and social activities. In commercial areas, sidewalks extended the realm of adjacent shops; shopkeepers displayed their merchandise on sidewalks and stored deliveries and overstock on them as well. Street peddlers made a living outdoors while street speakers and newsboys conveyed information to passersby. Sidewalks were also a realm for social encounters where friends, acquaintances, and strangers mixed. The sidewalks were thus both a route and a destination; a way to move through the city, but also a place of commerce, social interaction, and civic engagement.

As sidewalks proliferated, municipalities began to standardize them. Cities specified sidewalk dimensions, construction standards, and materials to ensure consistency and durability. At the same time, cities began to standardize streets and to require durable paving for the roadbed and travel lanes. With this standardization, the nature of the urban sidewalk began to change, and its range of uses began to contract. Municipal engineers began to focus narrowly on efficient transportation and the importance of clean streets. Cities prohibited abutting property owners from using the sidewalks as extensions of their businesses, and the courts—when businesses challenged cities—upheld the cities' authority to do so. In the process, walking for transportation became sidewalks' primary purpose and the pedestrian the primary user. The pedestrian's unobstructed mobility justified subsequent municipal restrictions on

other sidewalk activities. Consequently, the pedestrian became the sole “public” for whom the sidewalks were provided.

Cities applied a similar logic to streets. The advent of local planning further changed the street from a locally-oriented public space to a transportation corridor. Municipalities developed public paving projects whose primary goal was traffic movement. In the late 19th century pedestrians grumbled about the hindrances that blocked sidewalks; by the turn of the century pedestrians found they had *become* the hindrance, regarded by local planners as “obstructions” to the automobile. The sidewalk shifted from being the most *convenient* space for walking to the only *legitimate* space for walking. As pedestrians became “encroachers” into the roadbed, they were viewed as a source of accidents and congestion. City councils restricted pedestrian crossings to intersections, required pedestrians to obey traffic signals and instituted fines for jaywalking.

As automobiles proliferated in the early twentieth century, newspaper editorials blamed pedestrians for accidents because they defied the rules of the road and walked into moving vehicles. “The dumb pedestrian really is pretty dumb,” a columnist from *Westways* magazine wrote in 1937. “As a pedestrian the average man is not very bright.... As an incorrigible individualist, the pedestrian is intellectually inferior to the motorist in his traffic conduct.” As early as 1912, urban infrastructure trade magazines such as *American City* advised widening streets at the expense of sidewalks. Pedestrians were banned from streets to make room for cars, and a myriad of activities were banned from sidewalks to make room for pedestrians. But the sidewalks had never been about walking alone, and so in the process of creating an efficient transportation system, public officials, municipal engineers and the courts also enervated sidewalk life. ➤



TOO MUCH CONTROL

When cities redefined sidewalks as transportation corridors, they also gave themselves another reason to control sidewalk life. Anything that impeded pedestrian circulation could be restricted or prohibited. Cities throughout the nation issued ordinances to regulate sidewalk activities including loitering, panhandling, street vending, public speaking, and expressions of political dissent.

By the middle of the 20th century, urban sidewalks were used for fewer activities, and more people spent time in controlled environments like malls. And despite the recent popular and scholarly attention to walking, in a 2003 survey of the ten largest California cities, we found that public officials continued to deploy four strategies that devalued sidewalks as multi-use spaces. First, they de-emphasized sidewalks by developing sunken and raised plazas and elevated walkways. Second, they gentrified select sidewalk segments to make them attractive destinations with shopping, restaurants and bars while making few if any improvements to the remaining sidewalk network. Third, they privatized particular sidewalks through the designation of business improvement districts and by fencing and enclosing outdoor seating. And lastly,



cities sought to contain undesirable sidewalk activities they could not eliminate. We will discuss each of these strategies in turn.

De-emphasis. In downtown and commercial areas, cities let (and sometimes encourage) developers of privately provided plazas and open spaces to use enclosing walls, blank facades, and entrances through parking structures, all of which separate their properties from public sidewalks. Cities nationwide have built underground and overhead spaces—sunken plazas and skywalks—to provide pedestrian circulation that avoids the street. In cities such as Minneapolis-St. Paul, Detroit, Boston and Cincinnati, skywalks link high-rise towers to a network of tunnels leading people from underground garages to office cubicles, allowing workers and visitors to move through the downtown without setting foot on public sidewalks. While initially meant to address harsh winters, skywalks also appear in cities with warm climates such as Dallas, Los Angeles, Miami, San Francisco, and Santa Cruz.

Gentrification. In the last few decades, many municipalities have invested in historic districts and main streets to draw middle class residents and shoppers back to the city. Their efforts include upgrading the streetscape through a mix of public art, street furniture, and decorative lighting, renovating buildings, and converting old warehouses into trendy shops and restaurants. Cities have also enacted ordinances designating some “pedestrian-oriented” districts, and encouraging specific retail uses (cafes, bakeries, restaurants, flower shops, boutiques, bookstores, galleries, art shops) in these districts. Architectural and landscape design guidelines promote specific themes to retain or enhance an area’s historic character. The objective is to increase land value and overall economic viability. In the process, small, independent businesses such as nail salons, tattoo parlors and small food stores are often replaced by chain stores and upscale retailers. The new consumer orientation reflected in the higher prices and more upscale merchandise creates a subtle but effective screening mechanism and makes the sidewalks comfortable for only higher income populations.

Privatization. Many states have enabled Business Improvement Districts (BIDs) in which business owners tax themselves to augment public services or provide improvements for a designated district. Services offered by BIDs typically include sidewalk beautification, cleaning and maintenance, and private security officers. BID security officers ensure that sidewalk activity is not disruptive to businesses. Some urban residents become nuisances if they do not fit the BID’s desired image for the neighborhood.

Fencing a part of the sidewalk for outdoor seating is another form of privatization. Fences are boundaries that separate the privatized realm from public space. This might be required by ordinance, as is the case of California where state law stipulates that alcohol can be served only in enclosed and demarcated areas. While cafes can blend seamlessly into the city sidewalks, as they do in Paris, too often in the US hard boundaries privatize public space and thus preclude different public uses.

Containment. Who has access to which sidewalks is controversial. To contain undesirable uses, cities directly or indirectly sanction activities in one area to keep them out of another. Local governments restrict prostitution to red light districts and homelessness to skid rows. Some cities have extended this logic to street vending, allowing it in some areas while prohibiting it in others. At times, cities have attempted to confine protest events and political speech to officially-approved protest zones.

Some of the strategies above have helped empty public sidewalks of people and activities. Others have encouraged the use of sidewalks, but only by a subset of the population, and in doing so they make the sidewalk less public. ➤



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WHAT DO WE WANT? FIVE PURPOSES OF SIDEWALKS

Sidewalks will become more vibrant and desirable for walking if they can support five purposes: movement, encounter, confrontation, survival and beauty. To do this, we must re-imagine sidewalks as spaces that can accommodate both enjoyable *and* disruptive activities.

Movement. Sidewalks are spaces for travel, so they must be designed and maintained to accommodate this activity well. Pedestrians need protection from the natural elements such as rain and sun. Sidewalks must be accessible to all people. Comfortably moving on foot, in a wheelchair, or with a cane or other walking device requires smooth pavement with adequate width and curb cuts. Street furniture such as benches and lighting make sidewalks safer, easier to navigate, and more comfortable for users who have different purposes and varying levels of physical stamina.

Encounter. As spaces of encounter, sidewalks function best when a diverse range of people use them. On sidewalks, people can greet acquaintances, observe neighbors they have never met, and cross paths with strangers. Urban residents value some fleeting and public interactions, and urban encounters can make cities both intriguing and fun. Ordinary encounters like stopping to chat rarely interrupt traffic flow. Some events, however, override the functionality of streets and sidewalks by blocking traffic, and forcing people to stop, observe, or participate. Processions to celebrate civic, national, religious or secular holidays (such as the Cinco de Mayo, Chinese New Year, Fourth of July, Labor Day, Thanksgiving, Christmas, or Carnival) temporarily redefine the purpose of streets and sidewalks. Spontaneous and planned festivities break the rhythm of everyday life and give collective expression to people's joy, sorrow or aspirations. Parades and other large events disrupt traffic and can make sidewalks impassable. Although they are not neutral events—they insert cultural practices, issues, and interests into public consciousness—they are often accepted because they are temporary.

Confrontation. Some interactions and events are disruptive and intentionally confrontational. Nevertheless, we believe they should be accommodated on democratic sidewalks. Sit-ins and micropolitical acts, such as when African-Americans historically refused to step aside on the sidewalks, are important and protected forms of expression. But not all disruptions are

political. Talking loudly, gathering in groups, or even sitting on a stoop can violate local norms and, through repetition, change an area's character.

Rallies and protests are political events that intentionally disrupt ordinary activities. Although most agree in the abstract that people need access to public space for political speech and events, the immediate effects of many political events irritate those whose trip or day is interrupted. Because unimpeded transportation has been defined as sidewalks' primary purpose, cities have the authority to control the time, place and manner of such events to reduce their disruption.

Survival. Some groups, such as the homeless, street vendors or youth lingering at sidewalk corners, may not intend to be disruptive yet still cause other people discomfort. Most activities that are associated with homelessness, for example, are common—sitting, talking, asking questions and sleeping—but they are perceived differently when the people doing the sitting, talking and sleeping appear to be homeless. Recent conflicts around street vending and day laboring sites have focused on immigrants, eliciting concern from long-term residents about neighborhood change. Although few would argue that anyone should be absolutely banned from sidewalks, many city councils have assumed that causing other people discomfort is sufficient harm to prohibit ordinary activities. For some, however, sleeping, sitting or vending on sidewalks is a mechanism of daily or financial survival, and a rich mix of activities contributes to urban vitality.

Beauty. People like to be in beautiful spaces. Street trees are a way to beautify sidewalks and make them comfortable for walking or waiting for the bus. Trees and other green spaces also provide psychological benefits. In Chicago, residents in the Robert Taylor Homes public-housing development who lived in buildings surrounded by more trees and grass reported fewer incidences of aggressive behavior than those in buildings surrounded by less vegetation. Trees have additional benefits. Shade can decrease repaving costs (by reducing pavement fatigue, cracking, rutting, and other distress) and reduce energy costs to residents (by cooling houses and decreasing the need for air conditioning). Nonetheless, at times, street trees have been banned from long stretches of the sidewalk so as to not hinder the motorists' vision. The urban forest is often a low priority for cities, and few funds are dedicated to maintaining healthy trees along sidewalks.

RE-ENVISIONING SIDEWALKS

Counterintuitive though it may seem, if we wish to encourage walking for transportation, we need to make sidewalks places for *more* than just movement. When sidewalks become both spaces for travel and spaces for living, where people play, stop to talk, vend or buy, and communicate, they become more interesting places to walk. The sidewalks' draw, danger, and opportunity come from the same place: the people who make the public realm unpredictable, interesting, and democratic.

In 1913, Charles Beard wrote that sidewalks "have been likened to the arteries through which flows the life-blood of the city—trade and traffic." But he also maintained that sidewalks were more than that. "They are the meeting places of the people, the playgrounds of the children, the allurements to recreation, and vice. Here persons of all ages and tastes go to meet one another, to talk over the affairs of the day, to be entertained, to eat, to drink, to inspect shop windows, to do marketing, to buy and sell merchandise, and to perform a thousand offices which the exigencies of city life make profitable, healthful, or agreeable... The city sidewalks connect every household." This vision did not last, but we may yet be able to recreate it. ♦

FURTHER READING

Nicholas Blomley. 2007. "Civil Rights Meets Civil Engineering: Urban Public Space and Traffic Logic," *Canadian Journal of Law and Society*, 22(2):55–72.

Nicholas Fyfe (Ed.). 1998. *Images of the Street: Planning, Identity, and Control in Public Space*. London: Routledge.

Anastasia Loukaitou-Sideris and Renia Ehrenfeucht. 2009. *Sidewalks: Conflict and Negotiation over Public Space*. Cambridge, MA and London, England: MIT Press.

Anastasia Loukaitou-Sideris, Evelyn Blumenberg and Renia Ehrenfeucht. 2005. "Sidewalk Democracy: Municipalities and the Regulation of Public Space." In Eran Ben-Joseph and Terry Szwold, (Eds.), *Regulating Place: Standards and the Shaping of Urban America*. London: Routledge.

Fixing Broken Sidewalks

BY DONALD SHOUP

Property has its duties as well as its rights.

—Thomas Drummond

Public infrastructure often decays invisibly, and we are shocked when a bridge gives way or a water main breaks. Sidewalks, however, decay right before our eyes and under our feet. Perhaps because sidewalks fail gradually rather than collapse spectacularly, many cities have neglected sidewalk repairs and have let neighborhoods become less walkable. In Los Angeles, for example, 4,600 of the city's 10,750 miles of sidewalks need some degree of repair at an estimated cost of \$1.2 billion. Despite this backlog, the city fixed an average of only 67 miles of sidewalks a year between 2000 and 2008. Even if sidewalks miraculously stopped breaking, at that pace it would take 69 years to repair all the existing damage.



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THE AMERICANS WITH DISABILITIES ACT

Broken sidewalks make the city less accessible, especially for the blind and those who use wheelchairs, canes, or walkers. Accessible sidewalks have emerged as an important legal issue since the US Ninth Circuit Court of Appeals ruled in 2002 that the Americans with Disabilities Act (ADA) applies to sidewalks. In 2003 the US Supreme Court declined to overturn the Ninth Circuit ruling.

A class-action suit, *Barden v. City of Sacramento*, had alleged that Sacramento violated the ADA by allowing its sidewalks to fall into disrepair. The court ruled that the ADA covers “anything a public entity does” and any “normal function of a governmental entity.” To settle the case, Sacramento agreed to dedicate 20 percent of its annual transportation budget for up to 30 years to make public sidewalks accessible. Specifically, the settlement requires, “Changes of level of greater than ½ inch, whether caused by tree roots or any other deterioration or displacement of the surface of the Pedestrian Right of Way, will be remedied by providing a ramp with an appropriate slope or by creating a level path of travel.”

Similar ADA lawsuits have since been filed against other cities, including Los Angeles. How will these cities find all the money needed to repair their sidewalks when they already face fiscal hard times? Some cities have adopted a new strategy that doesn’t cost the city anything: require owners to repair broken sidewalks before they sell their property. ➤

WHO SHOULD PAY TO REPAIR SIDEWALKS?

Requiring sidewalk repairs before sale will make the city more accessible, but critics may object that cities are simply shifting the responsibility for repairs onto property owners. In California, however, property owners are already responsible for sidewalks. California's Streets and Highways Code states, "The owners of lots or portions of lots fronting on any portion of a public street shall maintain any sidewalk in such condition that the sidewalk will not endanger persons or property and maintain it in a condition which will not interfere with the public convenience." Property owners also pay for sidewalk repairs in many other states. A survey of 82 cities in 45 states found that 40 percent of the cities require property owners



to pay the full cost of repairing sidewalks, 46 percent share the cost with property owners, and only 13 percent pay the full cost of repairing sidewalks.

Los Angeles followed the state code until 1973, when federal funds became available to repair sidewalks at no cost to property owners. Because of this federal funding, the city assumed responsibility for most sidewalk repairs. Three years later, when the federal funds ran out, Los Angeles was left with no sidewalk repair program. Then, in 1978, California voters adopted Proposition 13, which limited property tax rates, and public funds became even scarcer.

By 1980, when the city attempted to reinstate the previous policy of citing property owners for damaged sidewalks and requiring them to pay for repairs, owners objected to the "new" mandate and the city halted citations. Because the city was short of money, it began to make only temporary asphalt patches to cracked sidewalks or—more often—did nothing at all. The resulting sidewalk decay led to the current state of serious disrepair.

REQUIRING SIDEWALK REPAIRS AT THE POINT OF SALE

How does a point-of-sale strategy work? Before any sale, the city inspects the sidewalk fronting the property. If the inspector finds that damage or displacement of the sidewalk creates an unsafe condition, the owner must pay to fix it before completing the sale. Piedmont, California, for example, requires, "New sidewalks and/or driveways must be constructed if required by the superintendent of streets . . . in conjunction with the sale of real property." Piedmont's ordinance mandates repairs if the vertical displacement of a break is $\frac{3}{4}$ of an inch or less, and reconstruction if the vertical displacement exceeds $\frac{3}{4}$ of an inch. Pasadena, California, has a similar at-sale sidewalk repair program.

Point-of-sale programs like those in Piedmont and Pasadena have several advantages beyond complying with the ADA. First, the city does not require owners to pay or do anything until they sell a property. The sale then provides the cash to pay for required repairs. Sellers fix only the sidewalk fronting their own property, so they can see exactly where their money is going.

Second, sidewalk repairs are gradual but inevitable because about half of all properties are sold at least once every decade. The property turnover rate is similar throughout most cities, so the sidewalks are repaired everywhere in a city at roughly the same rate.

Third, sidewalk repairs can increase a property's "curb appeal" and thus increase its market value. A property's value will increase not only because of its own sidewalk repairs but also because of all other nearby repairs. Everyone can benefit if property owners accept the obligation to repair their own sidewalks before selling their property.

Fourth, the city does not have to raise taxes to pay for sidewalk repairs. The city even saves money because of fewer trip-and-fall lawsuits. Among claims against the city for trip-and-fall incidents on Los Angeles sidewalks between 2001 and 2007, 36 percent of the incidents occurred in front of properties that had been sold within the previous five years. Los Angeles paid \$1.4 million to settle the claims for these incidents, which were preventable unless the sidewalks cracked in the five years between the last property sale and the trip-and-fall incident.

Finally, sellers include absentee owners and residents who are leaving the city. Their sidewalk repairs will leave the city in better shape for everyone who remains.



HOW DOES A POINT-OF-SALE PROGRAM WORK?

To manage a point-of-sale program, a city can require that the escrow documents at sale include a certificate of compliance with the sidewalk ordinance. The process starts when an owner requests the city to inspect a sidewalk. If the sidewalk is in good repair, the inspector issues a compliance certificate. If the sidewalk is damaged, however, the inspector estimates what the city would charge to repair it. The owner has several options at that point.

First, the owner can pay the city to repair the sidewalk. The inspector then issues a compliance certificate and the city makes the repairs. Second, the owner can accept a lien on the property for the estimated cost of the repairs. The inspector then issues a compliance certificate and the city makes the repairs; the city is repaid for the lien plus accrued interest at sale. Finally, the owner can choose to have a private contractor perform the work. In that case, the owner or contractor requests a permit and completes the work; the city inspects the work, and if it is satisfactory the inspector issues a compliance certificate. ➤



If the next owner intends to redevelop the property, repairing the sidewalk at sale may be premature. In this case, the city can allow the seller to shift the responsibility for repairs to the buyer. The city can inspect the property at the end of a specific time period after the sale (such as one year), and cite the new owner if the required repairs have not been completed.

Piedmont charges \$30 for issuing a certificate of compliance, which is the city's estimated cost of making the inspection. The inspectors can enter the records into a geographic database that shows the condition of sidewalks throughout the city. The point-of-sale program can be part of the city's plan to make its public sidewalks accessible, and the point-of-sale database will show the city's progress toward meeting the plan's goals.

Condominiums present a potential hitch in the process. Who would be liable for sidewalk repairs when a unit is sold—the unit's owner or the condominium association? One solution is to exempt individual units but require condominium associations to repair their sidewalks within a specified time after the ordinance is adopted, with periodic inspections to ensure continued compliance.

MICRO-LOANS FOR PUBLIC INVESTMENTS

Sidewalk repairs in Los Angeles typically cost between \$1,000 and \$1,500. If owners pay the city before it makes the repairs, the city will have idle funds to invest between the payments and the repairs. A city can also go beyond the basic point-of-sale plan by offering to repair sidewalks *before* sale and receive payment *at* sale. The city will, in effect, lend owners the money to pay for sidewalk repairs for as long as they continue to own the property. Owners can repay all or part of the debt before they sell the property, and any remaining debt is due at sale. If owners pay a market interest rate on the debt, the government loses nothing by accelerating the repairs.

Some cities already allow property owners to defer paying special assessments, with interest, until they sell their property. This option to pay at sale has several benefits. First, the program increases public investment without any public subsidy. The city runs little risk of borrowers' defaulting on the debt for sidewalk repairs because cash is available from the sale of the property when the debt is due. A public lien is senior to any mortgage, so even if property values decline and the owner has no equity, the city will be repaid in full. Where land values are high, and sidewalk improvements increase them further, most owners will have more than sufficient equity to repay the cost of repairs, plus accrued interest, at sale. Owners who wish to avoid the interest expense can always opt to repay the debt before sale.

Second, deferring payments until sale has a strong political advantage. Finding the cash to repair the sidewalk *before* sale could be difficult for many owners, but allowing owners to pay at sale will eliminate any cash-flow problem. Cash from the sale gives owners the ability to pay. Elected officials can thus vote for a point-of-sale requirement with a clear conscience.

Third, the deferment option will allow the city to cite property owners whose severely damaged sidewalks create an immediate danger to pedestrians. Requiring prompt repairs in these cases will increase public safety, remove barriers to persons with disabilities, and reduce claims from trip-and-fall lawsuits without creating a financial hardship for either property owners or the city.

Fourth, the requirement to repair at sale, combined with the ability to delay payment until sale, may spur some owners to make repairs as soon as a sidewalk breaks. They may repair early because (a) they want the safe sidewalk they will eventually have to provide anyway, (b) they expect repairs will be more expensive later, (c) they want to avoid trip-and-fall injuries, and/or (d) they want to increase their property value.

THE SPEED OF REPAIRS

How fast will a point-of-sale program repair a city's sidewalks? How long will it take, for example, before half the broken sidewalks have been repaired? We can answer this question by examining the history of property sales in a city. I used data from the Los Angeles County Assessor to find the last sale date for every property in the City of Los Angeles. Half of the 768,922 properties in the city changed ownership at least once between January 1, 1995 and December 31, 2006. If sidewalks fronting the sold properties are as likely to need repair as sidewalks fronting all properties, a point-of-sale program adopted at the beginning of 1995 would have repaired half the city's broken sidewalks in 12 years, much faster than the current pace of repairs. ➤

*Cash from the
sale gives
owners the
ability to pay.*



PUTTING CITIES BACK ON THEIR FEET

In 2002, the US Ninth Circuit Court ruled that the ADA applies to public sidewalks. As a result, cities must develop transition plans to ensure that their sidewalks are accessible. In this case, as in many others, what is good for people with disabilities—repairing broken sidewalks—is also good for everyone else. The ADA will force cities to do what they should be doing anyway: maintain their public infrastructure.

To ensure a steady flow of sidewalk improvements, cities can require property owners to fix their sidewalks when they sell their property. Before any real estate is sold, the city will inspect the sidewalk fronting the property. If the sidewalk is in good condition, the owner will not be required to do anything. If the sidewalk is broken, the city will require the owner to repair it before selling the property and the owner can put off paying for the repairs until sale.

Deferring the obligation to fix sidewalks until sale will help gain voters' approval, and enforcing the obligation at sale will help ensure owners' compliance, both of which will contribute to a successful program. Only property owners with broken sidewalks will pay anything, they will pay only for the cost of repairing their own sidewalks, and they will not have to pay until they sell their property. Because about half the city's broken sidewalks will be repaired each decade, all residents will be able to say, in the words of Danish urban designer Jan Gehl, "How nice it is to wake up every morning and know that your city is a little better than it was the day before."

A better world often arrives in small steps, but we need reasons to take these steps. With a point-of-sale program, all property owners will have to do their part, sooner or later. Walkable cities need good sidewalks, and requiring sidewalk repairs at sale will help put cities back on their feet. ♦

This article is abridged from a forthcoming publication in the *Journal of Urban Planning and Development*, with permission from the American Society of Civil Engineers.

FURTHER READING

Class Action Settlement Agreement, *Barden v. City of Sacramento*. 2002. (www.dralegal.org/downloads/cases/barden/settlement.pdf).

Donald Shoup. 1994. "Is Underinvestment in Public Infrastructure an Anomaly?" in Gareth Jones and Peter Ward (eds.), *Methodology for Land and Housing Market Analysis*, London: UCL Press, pp. 236–250. (www.spsr.ucla.edu/dup/people/faculty/shoup/IsUnder-investment.pdf).

Donald Shoup. 1996. "Regulating Land Use at Sale," *Journal of the American Planning Association*, vol. 62, no. 3, Summer, pp. 354–372. (http://shoup.boi.ucla.edu/Regulation_at_Sale.pdf).

Donald Shoup. 2010. "Putting Cities Back on Their Feet," *Journal of Urban Planning and Development*. vol. 136, no. 3, September.

All papers are available at www.uctc.net/research/facultypapers.shtml.

Faculty research papers

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A Preliminary Analysis of the Environmental Impacts of the Clean Truck Program in the Alameda Corridor, CA.
March 2010

Gunwoo Lee, Soyoung (Iris) You, Mana Sangkapichai, Stephen G. Ritchie, Jean-Daniel Saphores, Oladele Ogunseitan, Roberto Ayala, R. Jayakrishnan, and Rodolfo Torres
Assessing the Environmental and Health Impacts of Port-Related Freight Movement in a Major Urban Transportation Corridor.
March 2010

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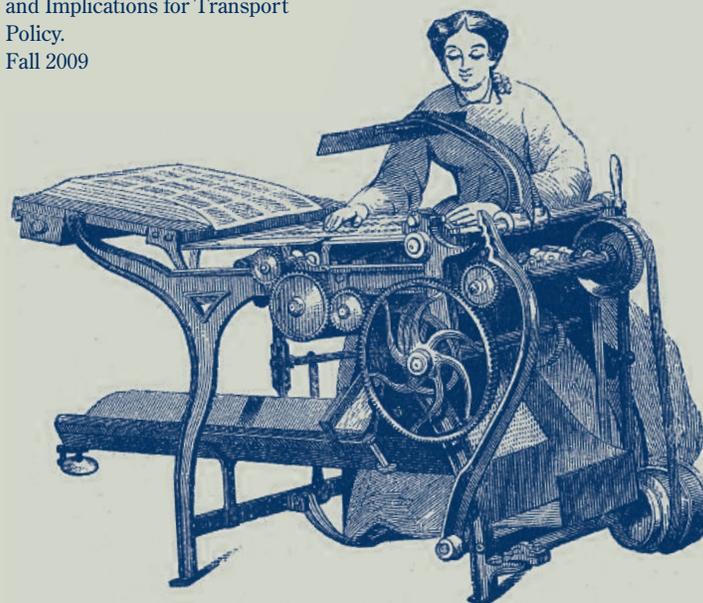
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Policy Briefs

The Price of Unwanted Parking.

Re-pricing Highway Pavement Deterioration.

Are TOD's Over-Parked?

B O O K S

Please contact the publishers for information about the books listed here.

Boarnet, Marlon and Randall Crane
Travel by Design: The Influence of Urban Form on Travel
(Oxford University Press, 2001)

Garrison, William L., and David Levinson
The Transportation Experience: Policy, Planning, and Deployment
(Oxford University Press, 2005)

Hall, Peter Geoffrey
Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century
(Blackwell Publishers, 2002)

Jacobs, Allan B., Elizabeth S. Macdonald, and Yodan Y. Rofé
The Boulevard Book: History, Evolution, Design of Multi-Way Boulevards (MIT Press, 2002)

Loukaitou-Sideris, Anastasia and Renia Ehrenfeucht
Sidewalks: Conflict and Negotiation over Public Space.
(MIT Press, 2009)

Shoup, Donald C.
The High Cost of Free Parking
(Planner's Press, 2005)

Shoup, Donald C.
Parking Cash Out (Planning Advisory Service, 2005)

Sperling, Daniel and James Cannon, eds.
Driving Climate Change: Cutting Carbon from Transportation
(Elsevier Academic Press, 2006)

Sperling, Daniel and James Cannon, eds.
The Hydrogen Energy Transition: Moving Toward the Post Petroleum Age in Transportation
(Elsevier Academic Press, 2004)

Sperling, Daniel and Deborah Gordon
Two Billion Cars: Driving Toward Sustainability (Oxford University Press, 2009)

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Peter V. Hall

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Robert Cervero

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Gian-Claudia Sciara

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Elizabeth A. Deakin

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Douglas Kolozsvari and Donald Shoup

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Sandi Rosenbloom

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Randall Crane and Daniel G. Chatman

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Susan Handy

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Elizabeth A. Deakin

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Melvin M. Webber

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Aaron Golub

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Jill Cooper

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Jennifer Dill

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Michael Southworth and Eran Ben-Joseph

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Elizabeth A. Deakin

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Anthony Downs

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Paul Ong

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Martin Wachs and Ann Brach

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Paul Sorensen and Brian Taylor

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T.R. Lakshmanan and Lata R. Chatterjee

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Paul Craig

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Pravin Varaiya

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Joan Ogden

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Timothy Lipman

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Frank S. Koppelman

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Brian D. Taylor

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Elizabeth Macdonald

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Matthew Dresden

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Eric A. Morris

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Songju Kim and Martin Wachs

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Daniel Baldwin Hess

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Melanie Curry

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John D. Landis

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Daniel Sperling

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Douglas Houston, Jun Wu, Paul Ong, and Arthur Winer

Stuck at Home: When Driving Isn't a Choice
Annie Decker

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Mel Webber: 1920 - 2006
Melanie Curry

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Martin Wachs

Flexible Transit, the American City, and Mel Webber
Robert Cervero

Skeptical Optimism in Transportation and Planning Research
Brian D. Taylor

Melvin M. Webber: Maker and Breaker of Planning Paradigms
Sir Peter Hall

Teaching with Mel
Elizabeth Deakin

Learning from Mel
Jonathan Richmond

Melvin Webber and the "Nonplace Urban Realm"
Michael B. Teitz

Beyond ITS and the Transportation Monoculture
Daniel Sperling

The Mel Webber Index
THE ACCESS ALMANAC: Love, Lies, and Transportation in LA, Again
Charles Lave

ACCESS 30, SPRING 2007

Change Happens
Melanie Curry

From Horse Power to Horsepower
Eric A. Morris

Beyond the Automobile?
Sir Peter Hall

Cruising for Parking
Donald Shoup

Dispatch from Sydney: Transport in the Land of Oz
John Landis

THE ACCESS ALMANAC: The Incredible Shrinking Energy R&D Budget
Daniel M. Kammen and Gregory F. Nemet

ACCESS 31, FALL 2007

Urgent Action Required
Melanie Curry

For Whom the Road Tolls: The Politics of Congestion Pricing
David King, Michael Manville, and Donald Shoup

If Cars Were More Efficient, Would We Use Less Fuel?
Kenneth A. Small and Kurt Van Dender

Fuel Economy: What Drives Consumer Choice?
Tom Turrentine, Kenneth Kurani, and Rusty Heffner

The Intersection of Trees and Safety
Elizabeth Macdonald

Smarter Parking at Transit Stations
Susan Shaheen and Charlene Kemmerer

ACCESS 32, SPRING 2008

California's Growth: An Uncertain Future
Michael B. Teitz

California Futures: Accommodating Growth in an Era of Climate Change and Rising Fuel Prices
Elizabeth Deakin

The Challenge of Urban Transportation in California
Elizabeth Deakin and Robert Cervero

A Strategy for Infrastructure: The California Infrastructure Initiative
David E. Dowall and Robin Ried

California's Housing Problem
Cynthia Kroll and Krute Singa

ACCESS 33, FALL 2008

Transportation Planning as an Integral Part of Urban Development: The Emerging Paradigm
Elizabeth A. Deakin

Multimodal Transportation in California: Connecting Planes, Trains, and Automobiles
Adib Kanafani

Planning Water Use in California
William Eisenstadt and G. Mathias Kondolf

Integrating Infrastructure Planning: The Role of Schools
Deborah McKay, Jeff Vincent, and Carrie Makarewicz

Transportation Infrastructure and Sustainable Development: New Planning Approaches for Urban Growth
Marlon G. Boarnet

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Transportation Technologies for the 21st Century
Elizabeth Deakin

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Daniel M. Kammen, Samuel M. Arons, Derek M. Lemoine, and Holmes Hummel

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Lee Schipper

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Daniel Sperling and Sonia Yeh

Intelligent Transport Systems: Linking Technology and Transport Policy to Help Steer the Future
Elizabeth Deakin, Karen Trautenberg Frick, and Alexander Skabardonis

ACCESS 35, FALL 2010

Access moves to LA
Michael Manville

Traffic Congestion and Greenhouse Gases
Matthew Barth and Kanok Boriboonsomsin

Airport Congestion Management: Prices or Quantities?
Jan Brueckner

Moving Los Angeles
Paul Sorensen

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