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ISSUE TEN / 2006

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from the editor

FIFTY YEARS AGO, TRANSPORTATION patterns for most Americans were fairly routine. Most men, corporate executives and janitors alike, woke up and took the train or drove to work at the same place each day. Most women went to regular destinations to shop or take the kids somewhere. Cargo moved along predictable routes.

Today's travel patterns are much more complex. A higher percentage of the population, especially women, works. Where they work may vary from day to day—whether we're talking about an information worker who telecommutes one day and flies to Amsterdam the next, or a day laborer who waits every day for a shuttle to transport her to a different job site. Though women still do most of the work of raising kids and shopping, men share in some of this work, generating a wider range of trip patterns; and instead of, say, always picking up food at the local grocery store, shopping for food might be a trip to an Asian market one day and a Trader Joe's the next. With the proliferation of e-commerce, increasingly commerce means shipping any good from any origin to any destination. And imports and exports respond to rapid fluctuations in global markets.

An economy that has people and goods moving every which way in complex patterns demands a range of transportation choices, including many new options that did not exist fifty years ago.

Let's start with the most loved and hated transportation mode, the automobile. In a world of flexibility and unpredictability, cars aren't going anywhere. There are simply many trips that will need to be made by automobile. We need to address the challenges of cars—the massive threat of global warming, explained in Hari Osofsky's article, and inequities such as disabled people's lack of access

to car transportation, described by Anne Decker—without dogmatically claiming that they must disappear.

It is tempting to say that in a world of unpredictable transportation choices, cars are all that matter. But, at least as currently structured, relying on cars alone fails our economy. Tens of thousands of different people going random places produces unpredictable traffic jams at all hours—something that Southern Californians have seen for decades and other metro areas are increasingly experiencing—which has devastating economic effects in threatening the simple ability of anything to happen on time.

We simply cannot create the capacity on roads to ensure that car traffic always flows freely. We need to create better options—like the transportation pricing measures Michael Replogle explains and the new forms of bus rapid transit that Mike Sabel reviews. We also need to recognize the central role of air travel in our economy, as John Kasarda discusses, and promote new options for moving cargo, like the Mid-Continent Trade Corridor that Kansas City Mayor Kay Barnes describes.

By creating a range of options for transporting people and goods, we can keep all Americans—rich, poor, children, elderly, and the disabled—moving. We need to move forward with these innovative multi-modal transportation systems to keep our economy growing, and we need to do so in a way that improves our environment. I hope that you enjoy this issue's contribution to the debate on these critical challenges.

Adam Gordon
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I FELT THE NEED TO WRITE IN RESPONSE to Matthew J. Kiefer's article on the Supreme Court's "Kelo" decision. Unfortunately, while Mr. Kiefer's piece on "Kelo" is well-reasoned, it is blind to the crux of the Court's decision. The disturbing aspect of "Kelo" is not that the Court sided with developers so that private property "can be taken by the government and sold to another private owner just to increase jobs and tax revenues." This decision should inspire outrage because it accepts as its premise a notion that is merely every developer's sales pitch. Whenever a new mall, office complex, or other business-related project is built, its proponents argue the project will "create jobs" and be generally "good for our area's economy." In reality, undertakings like these often simply shift jobs from one locale to another. A new mall may be built, for instance, and stifle its competition: the old mall. True, jobs may have been created for the construction workers who built the new mall, but those jobs last for several months, or a couple of years if winter weather gets in the way. Meanwhile, the jobs that exist inside the mall were usually juggled from one place to the next. In the best case scenario, perhaps a new mall would create a handful of jobs if it were bigger than the old one and had more attractions that needed to be staffed. However, creating a small number of jobs does not revitalize an area's economy, and it does not justify usurping property rights as if the US were the USSR. I do not think that the person who was born in her home in 1918 should move simply because command cen-

tral told her to. (At the same time, the developers are more than smart enough to modify their projects if they encounter a few hold-outs.) Mr. Keifer is right that the "Kelo" decision focuses on the democratic process. Distressingly, the Court did not rigorously examine the developers' argument that its plans will benefit New London. "Kelo" is not, in fact, "misread as endorsing the taking." What "Kelo" does is to validate the most hackneyed—and usually unsubstantiated—arguments that developers make for their projects and extend them to an extreme in which developers can gain almost total power to make a profit at private property owners' expense.

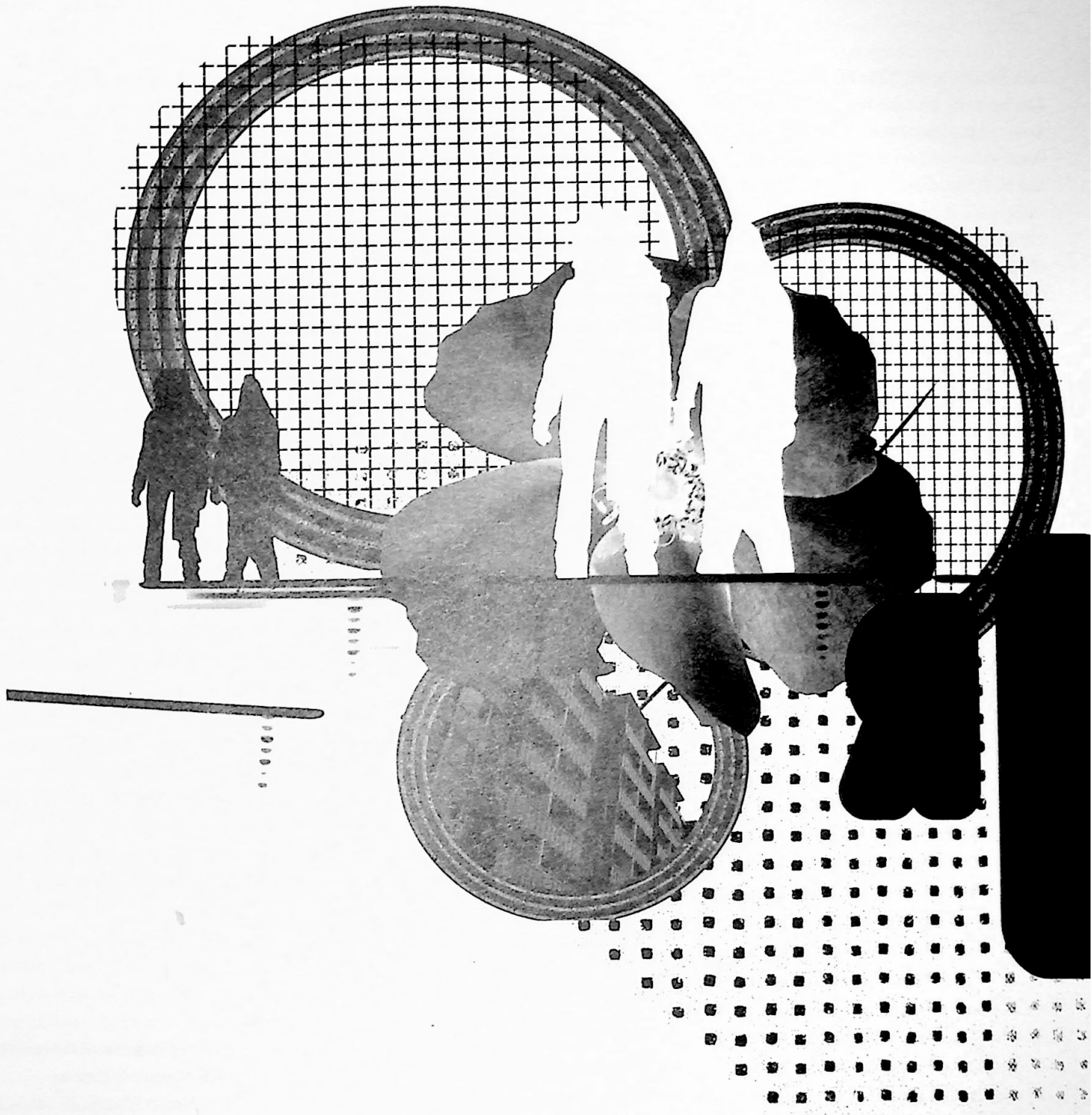
James P. McNamara, Washington, D.C

opposite page:

FUTURE SHOES

The future of transportation will be about walking. In fact, the urban landscape will be so dense it will leave no room for vehicles. In cities people will only be able to get around by foot. —Michael Jakob

departments



Kansas City: The Corridor to the Future

MANY ARE SURPRISED TO LEARN America's next great trading port is located some 1,500 miles away from the Pacific Ocean and more than 900 miles from the Atlantic Ocean. Despite its inland address, Kansas City, Missouri, will soon be home to the first ever foreign customs inspection office on United States soil; a new Mexican Customs Clearance Facility, and thus an expanded international trade corridor between the U.S., Mexico, and Canada is poised to open next year with Kansas City as the focal hub.

Why are political and business officials eager to establish a customs facility, essentially a trade port, some 800 miles from the Mexican border? Not long after President Bill Clinton signed the North American Free Trade Agreement (NAFTA) in 1994, a number of public and private organizations forged partnerships to make use of existing transportation infrastructure in order to strengthen or establish trade corridors that crossed international lines. Chief among them are North America's Super Corridor Coalition and its recently amalgamated partner, the North American International Trade Corridor supporters. The two projects are working to improve transportation and trade relations along what they call the North American Mid-Continent Trade Corridor—from Manitoba province in Canada, through the Central U.S., down to the states of Michoacan and Colima in Mexico—encompassing the two largest border crossings in the U.S.: Laredo, Texas, and Detroit, Michigan. Kansas City, the major intermodal hub at the heart of the corridor, disperses goods from Canada and Mexico throughout the U.S. and can serve as an alternative trade port as trade growth begins to choke coastal ports and customs facilities in Texas.

As more cities recognize the need to seize control of their own economic destinies, our trade corridor is a novel example of pro-action. According to a June 2005 U.S. Census Bureau report, the international trade deficit in goods and services has ballooned to \$57 billion. As the trade deficit continues to expand and companies move their operations overseas, cities must define niche markets that give them a reason for existence in the global economy. For Kansas City, this has meant promoting ourselves as an international trade center. We are aggressively advancing our vision of the North American Mid-Continent Trade Corridor to solidify Kansas City's role as a transportation, logistics, and distribution hub for the country.

A History in Transit

In order to understand how Kansas City has moved to the forefront of NAFTA trade, one must first understand that the city has always identified as a center of trade. Kansas City began as a supply outpost for those headed west on the Oregon and Santa Fe Trails. After the Civil War, a Congressional act that authorized the construction of a Missouri River bridge ensured Kansas City's future as an urban trade center for the region. With the advent of the railroad, Kansas City became a major rail hub for the trans-continental transport of goods.

Stephen Blank, an international business professor at Pace University in New York City, and managing director of the PanAmerican Partnership for Business Education, says the Kansas City area has long been a fundamental link in the country's freight transportation system. He cites the 1995 Intermodal Freight Strategies Study which indicates that 80 million tons of freight moved to and from the region, and approximately 50 percent of

all eastbound intermodal freight originating in California passed through the Kansas City area alone.

In transportation circles today, Kansas City may be best known for being located at the crossroads of three of the nation's major interstate highways, I-29, I-35, and I-70. We are also situated along the largest navigable inland waterway, the Missouri/Mississippi River System. We are home to the second-largest rail center in the country, and our airport moves more air cargo each year than any other air center in the surrounding six-state region. The converted 1,400-acre Richards-Gebaur Air Force Base serves as an intermodal trade facility, called the International Freight Gateway. And with over 10,000 acres, the city boasts more Foreign Trade Zone space—where foreign goods can be stored before formally subjected to customs—than any other American city. Kansas City also has SubTropolis, the world's largest underground business complex with nearly 5 million square feet of leasable space, allowing for the ample storage of a huge volume of distributable goods.

Blank says these infrastructure advantages, coupled with the city's colorful trade history, make Kansas City the ideal location for the international corridor and proposed customs site. I would also say we are fortunate to have cooperation from both the private and public sector in this endeavor, a critical component of the city's progress to date.

Providing an Alternative to Crowded Ports

The North American Mid-Continent Trade Corridor allows Kansas City and its partners to market themselves jointly to businesses in Mexico, Canada, Asia, and other international locations seeking shorter distri-

bution times and lower costs. Some of the major Pacific ports—Long Beach and Oakland, California, and Tacoma and Seattle, Washington—are already suffering logjams that will likely only get worse as trade volume and terrorism-related security mandates increase.

Consider the prognosis for three of the country's four largest ports: in 2003, Los Angeles, Long Beach, and Oakland collectively handled 13.7 million twenty-foot equivalent units (TEUs—a standard measure of cargo container capacity); by 2020, the American Association of Port Authorities predicts that amount will explode to 40.8 million TEUs, largely from growing Pacific Rim trade. And the U.S. Department of Transportation predicts that by 2020, the nation's 360 ports will handle more than double the tonnage levels collectively handled in 1996. U.S. ports currently accommodate roughly 99 percent of the country's overseas trade by weight and 61 percent by value. If trade volume forecasts prove correct, not only will those ports have to grow even more efficient at processing cargo, but increased congestion will require—and businesses will surely be looking for—alternative distribution centers, such as the one we are designing in Kansas City.

Two trade partnerships with Mexican port cities were necessary to connect Kansas City with Pacific markets and make it a competitive alternative to West Coast trade portals. In January 2005, we forged a non-binding partnership with Mexico's deep-water Pacific port, Manzanillo in the state of Colima, that allows for containers to be unloaded and inspected in Kansas City or Manzanillo, sealed, and then delivered directly by rail to the other city, bypassing inspection delays at the Texas-Mexican border. And an agreement signed in March with the port of Lázaro Cárdenas, in the state of Michoacán, allows goods from Asia to travel to their ships-to-rail terminal and then travel to Kansas City to be distributed throughout the U.S. A condition of the agreement allows shippers to move as many containers as they would like for a single \$55,000 bond—as opposed to the previous “through bond” of \$100,000 per container. Consequently, the Lázaro Cárdenas-Kansas City corridor could be considerably less expensive than the traditional trade portals of Long Beach or Los Angeles.

In order to make use of these treaties, Kansas City had to ensure appropriate physical infrastructure would be available. In April 2005, Kansas City Southern rail company (KCS) purchased a controlling interest in *Transportación Ferroviaria Mexicana* (TFM), bringing the “NAFTA Railway” into existence: a single 1,300-mile railroad system comprised of KCS, TFM, and The Texas Railway Company—all under common leadership—that connects the Central U.S., Central Mexico, and Mexico's Pacific seaports.

The City of Kansas City enacted these agreements in conjunction with MexiPlex and SmartPort, Inc. The MexiPlex is our business complex, operated by the Kansas City-Mexico Business Development Office, which houses a Mexican consulate, the Hispanic Chamber of Commerce of Greater Kansas City, and international trade and tourism offices. It also serves as a nexus for Mexican and U.S. businesses and city governments to establish and strengthen relationships. SmartPort is a non-profit corporation created in 2001 to promote the Kansas City metropolitan area as America's “Inland Port Solution.” SmartPort is helping turn Kansas City into an international trading center by increasing business for the transportation and logistics industries and by developing more efficient trade routes around the Kansas City hub for traded goods, such as agricultural commodities and retail merchandise.

Negotiations are continuing with officials from Winnipeg to solidify our ties with Canada by adding a Winnipeg/Manitoba liaison office in Kansas City. Future plans also include strategic partnerships with Montreal, Quebec, in order to connect the North American Mid-Continent Trade Corridor with the Quebec-Ontario-Midwest corridor, through which passes approximately 60 percent of shipments to destinations outside the province of Quebec.

Today, our city patiently awaits final approval from the federal Customs and Border Protection Agency for the first foreign customs facility on American soil, the Mexican Customs Clearance Facility. As officials sort through delicate issues of sovereignty and security, we anxiously anticipate the corridor's economic benefits. “Right now there is some \$400 billion in trade between Mexico and the U.S.,” said Mexican Secretary of For-

eign Affairs Luis Ernesto Derbez during a recent diplomatic visit to Missouri. “But with a Mexican Customs Facility in Kansas City and the progression of a new trade corridor, I suspect that number is likely to double.”

The Future

The prospect of future labor disputes, the threats of terrorism, and ever-increasing cargo volume has forced our nation's importers and exporters to search for new ports of call.

Kansas City's integrated inland port is trying to establish itself as an alternative to existing facilities. But this new alternative has its critics. Some activists have condemned the project for the same reasons that international trade projects are always criticized: that any increase in trade hurts the American economy, causes job losses in the U.S., and contributes to the national deficit. Moreover, some worry that existing West Coast ports who fear losing market share will protest the Kansas City depot. Finally, there is the concern that security measures will be light and that terrorists will be able to take advantage of land-based ports by accessing the cargo as it is being loaded or moved.

I am hopeful that these criticisms will prove to be unfounded. Our objective in building a port is not to steal market share from existing West Coast facilities, but instead to promote additional growth and expansion of U.S. trade with countries abroad. Proponents of the trade corridor are enthused that unions have so far supported the project. The Teamsters, for example, see potential for additional work from a predicted economic boom for businesses both directly and indirectly affiliated with transportation logistics: drivers and operators, security, motors, and maintenance and repairs. With regard to security, new cargo tracking methods, such as geographic tracking, and other transportation security measures, such as x-ray analysis, are being implemented.

As we have learned from the past, integration in the new global economy comes from complete commercial, economic, political, and cultural integration. With our strategic position in the heart of America, and as the hub of the North American Trade Corridor, Kansas City intends to be an integral part of the global marketplace for years to come. ●

Health by Design: The Crusade for Healthier Cities in the Sacramento Valley

ALONG INTERSTATE 80 IN CALIFORNIA'S Sacramento Valley, sprawling suburbs spring from the fertile agricultural land that has long been the economic and cultural center of the region. New developments of track homes and super-stores are named for the crops they supplanted: Walnut Grove, Wheatland, and Oran-gevale. Signs lining the freeway from San Francisco advertise spacious homes from the low-\$300,000s and, as one billboard puts it, a "better, easier life." As Bay Area residents flee San Francisco's disappearing jobs and soaring housing prices, Sacramento, lying just seventy miles to the east, braces for unprecedented growth. More than a million additional housing units will be needed in the six-county, 10,000-square-mile Sacramento Valley region to accommodate the 70% population growth expected over the next twenty years. Growing pains are inevitable.

The usual cast of builders, city planners, advocates, and homeowners are the loudest voices in the disputes about development in the Sacramento Valley. But a new voice has been vying for recognition: the voice of the public health and medical community. Health experts argue that city planning and development is integrally related to many of the most pervasive health epidemics in our country, including asthma, obesity, and diabetes. These experts are particularly worried that the Sacramento area—which claims some of the worst air in the nation and a prevalence of obesity and diabetes above statewide averages—stands at a crossroads of unprecedented growth and public health crisis. The role that urban development plays in shaping the health of the community is beginning to infiltrate planning discussions, but the question remains: is there room for a public health perspective on the future growth of the Sacramento Valley?

Public Health and the Built Environment

The idea that certain cities breed healthier citizens is not a new one. For decades, sociologists and planners have investigated how housing density and land use might connect to sanitation and mental health. As far back as 1926, in *Village of Euclid v. Ambler Realty*, the U.S. Supreme Court cited public health protection as one of the basic responsibilities of local governments when it came to issues concerning land use and zoning.

It is fairly intuitive that what we do with the land, water, and air around us has health implications. It was not until the relatively recent epidemic of childhood obesity, however, that a small group of academics and public health officers began to take a scientific look at the relationship between city planning and human health. They found that traditional risk factors, such as poor diet and lack of exercise, were only part of what was causing the 74 percent increase in obesity nationwide over the past ten years. Housing characteristics, land-use patterns, and transportation choices were also found to be influential when it came to what many have called the "fattening of America."

The links between land use and health were further explored and legitimized by a 2001 article published in the esteemed *Journal of the American Medical Association*. This article looked at the effect that decreased auto traffic during the 1996 Atlanta Olympic Games had on ozone levels and asthma attacks. The study demonstrated that a 22 percent decrease in auto traffic (in part resulting from improved public transit during the Atlanta games) resulted in a 41 percent drop in emergency room visits due to asthma attacks. Over the past few years, entire issues of the *American Journal of Public Health* and the *Journal of Urban Health* have been dedicated to discuss-

ing and documenting the growing body of evidence linking the built environment and human health. Once indices measuring sprawl were shown to correlate with the prevalence of obesity and asthma, the public health community started to expand their definition of 'risk factor'. The built environment—the space, buildings, roads, parks, and infrastructure we interact with—has now become a variable in many major medical studies.

A "Junk Science"

In his Sacramento office directly across from the lush lawns of the state capitol, Dr. Richard Jackson, California's Chief Health Officer, reflects on the field he helped to create. During his tenure as one of the directors of the Centers for Disease Control, Dr. Jackson, a pediatrician by training, developed much of the initial research linking the built environment and human health. "The first article I wrote [on the relationship between health and the built environment] was lambasted. I was attacked for espousing junk science." Since then, developers and politicians have continued to attack him for his "junk science."

Jackson sees California, and the Sacramento Valley in particular, as "a laboratory for looking at health and the environment." He intends, however, to go beyond just looking to doing something notoriously rare in public health circles: turning research into practice. His first and most ambitious goal has been to facilitate dialogue and cooperation between public health officials and planners.

Getting the two groups to talk to one another, it turns out, is easier said than done. Dr. Glennah Trochet, Sacramento's Public Health Officer, believes that the sprawling growth in her county will create more auto traffic, thereby worsening air quality in a valley that, according to the American Lung Associa-

tion, already has the seventh worst air in the country. However, she has done little to coordinate her worries with other county officials because, she says, "The county public health officers can't talk to the planners." She says she cannot even set up a meeting with a planner in her county because she "wouldn't even know what to talk about. You can't have a dialogue without the same language."

Dr. Jackson is trying to move beyond such barriers. In his first year on the job, he has encouraged county and local health officers to train staff in issues of the built environment, and his office is planning a seminar for city planners and public health officials to network and coordinate planning efforts in the region.

One group more than willing to talk with public health officials is the advocacy community. For years, advocating for smart growth and sustainable development seemed an uphill battle to many in the Sacramento Valley. The election of Gov. Arnold Schwarzenegger, known to enjoy big houses and big cars—he is often called the Hummer Governor, owning seven in total—only increased fears that high-density, mixed-use developments and improved bike and pedestrian infrastructure would be even harder to accomplish in Sacramento.

Walt Seifert, executive director of the Sacramento Area Bicycle Advocates, has noticed over the past few years that an increasing number of public health officials are attending conferences and seminars, educating advocates on the links between the built environment and health. As a result, his organization, which sits on a number of city and regional

planning committees, has attempted to use public health arguments in advocating smart growth policies: "Any scientific argument I can use, especially a strong public health argument, is welcomed." Mr. Seifert, however, is skeptical of the influence this has had on city planning. He worries that the city council and board of supervisors don't see public health as their job. "I think they recognize the problem," says Mr. Seifert, "but they don't see themselves as a part of the solution."

Meeting Demand?

When it comes to building healthy cities, where does the responsibility lie? Do developers have an obligation to build cities that are, according to epidemiologists, healthier? Many developers in the Sacramento Area feel that they are simply meeting public demand. After all, if the market rewards the development of large, single-family housing, it is difficult to blame developers. And if people end up living a ten-minute drive from the nearest shopping center, as is the case in the Sacramento exurb of Roseville, it is typically the result of zoning ordinances and not developer preference.

It is hard to get anyone from the major building corporations in Sacramento to talk about the human health implications of the developments they construct. Either they simply are not aware of the implications, or they do not believe it is their job to know. One developer (who spoke under the condition of anonymity) believes there are only a few factors that truly influence what developers end up developing: city officials, housing prices, and lawsuits.

When it comes to building cities, he stated, "We need to get the elected officials to stop telling the developers to do the wrong thing."

As for housing prices, current zoning ordinances make it hard to build neighborhoods that are healthy by design, thus meaning that supply is far below demand. Neighborhoods like Sacramento's midtown—where storefronts are filled with shops and markets and every street has a tree-lined bike path and light-rail station—are the most expensive in the region. "You can't have equity, you can't have prosperity without affordable housing," the developer says.

And what about lawsuits? Many developers already over-engineer their projects to protect themselves from liability. Safety is one factor that litigation has forced developers to consider, but those safety concerns have traditionally been limited to issues like whether or not a building will fall over, or whether the building was erected on top of a retired toxic waste dump. Perhaps developers in Sacramento won't become proactive about building healthier cities until an obese resident, blaming sprawl for his infirmity, brings suit. Unless that hypothetical becomes reality, the impetus for change must come from either the pocket-books of homeowners or the laws of their elected officials.

MPO to the Rescue

Fortunately for Sacramento, the city has an award-winning metropolitan planning organization (MPO) to sort out its growing pains. This past year, the Association of Metropolitan



Planning Organizations named the Sacramento Area Council of Governments (better known as SACOG) the best large MPO in the United States, and the Federal Highway Administration presented SACOG with a Transportation Planning Excellence Award. SACOG's primary job is to manage the Metropolitan Transportation Plan (MTP), which outlines the spending of \$22.5 billion in federal funds for the 6 counties and 22 incorporated cities of the Sacramento Valley. With the blessing of nearly all city and county governments in the region, they have expanded their role to develop a comprehensive blueprint for growth in the region.

As MPOs go, SACOG is unabashedly proactive in envisioning growth that works. Their blueprint for the region includes high-density, multi-use housing, centered on mass transit hubs, bike lanes, and safer pedestrian infrastructure, and improved parks and recreational facilities. Former SACOG Chair and West Sacramento Mayor Chris Cabaldon said, "We've decided to take control of our future, rather than watch from the sidelines as traffic increases, air quality worsens, and open space disappears."

Although many public health officials and advocates would have liked to see human health concerns assume a more prominent role in SACOG's plan, this organization has gone a step further than most MPOs in viewing urban development as public health work. They have a committee focusing specifically on air quality issues. And SACOG is planning a symposium with the University of California at Davis Medical Center that will bring together public health officials, architects, planners, and builders to discuss the impact of land use, planning, and transportation on human health.

This increased interest in health may come partly from strong concern expressed in a recent series of public meetings held as part of developing the metropolitan plan.

Over 1,500 people in Sacramento attended 38 community workshops organized by SACOG, during which neighbors sat over coffee, cookies, and satellite maps and highlighted certain parts of the city with multi-colored pens. At the conclusion of the public comment period, air quality was one of the most commonly raised issues.

Making Healthy Living Easy

Still, those involved with the meetings represent only a small fraction of the total populace. Most people living in Sacramento are painfully aware of the worsening air quality in the region, but few recognize that the way their area is growing will contribute to the problem. Demand for single-family homes in sprawling communities is high, and for good reason. When compared to the city center, housing prices in the new suburbs are considerably lower, the homes are newer, and there is a feeling of freedom and space. Ideally new smart growth developments should be made more affordable and appealing so that such developments can meet market demand. But doing so will require changes in zoning to entice builders to construct such developments—which in turn requires public support. Such support may be more forthcoming if the public better understands the link between worsening air quality and choices made about development.

In essence, public health is about making healthy living easy. Prevention, the heart of public health, is best accomplished when it is passive. For example, fluoridation of the water supply as a method of preventing cavities is a public health intervention built into the infrastructure of our daily lives. It requires almost no public effort or education and thereby makes being healthy easy. Developing cities that are by design healthier could be a similarly important public health development. By designing cities that are walkable, with safe pedestrian corridors and centralized multi-use developments, we design cities that promote resident activity and thus lead to less obesity. By designing cities with better mass transit and bicycle lanes, we design cities with less air pollution and incidence of asthma.

According to Dr. Jackson, "every planner, developer, and architect needs to see that they have a critical role in public health." In the Sacramento Valley, city officials, planners, and developers are beginning to see their actions as such. There's still a long way to go, but at least it's a start. ●

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Clashing Visions of a Third World Metropolis: Can Jakarta Work For All its Citizens?

INDONESIA'S CAPITAL, JAKARTA, IS, LIKE many Third World metropolises, a painful montage of extreme wealth and poverty. Luxury apartment buildings shoot above streets of small, ramshackle homes, huge mall complexes cast their shadows over vendors and beggars plying their trade on sidewalks and buses, and Mercedes-Benzes drive past trains with passengers stuffed into cars and sitting on roofs. While the Jakarta special district government announces plans to facilitate the building of 200 malls, half-finished highway ramps and unfinished skyscrapers stand as architectural reminders of the Asian economic crisis.

Jakarta is one of the most densely populated places on earth. Numbers vary, but by one estimate, the greater urban area of Jakarta encompasses some 21 million people—or nearly ten percent of Indonesia's population—making it the densest part of one of the densest islands (Java) in the world. The city's infrastructure and services have not kept pace with the community's needs. Eighty-five percent of new housing stock is informally assembled by the poor, who are often squatting on land to which they have no legal right. Those lucky enough to have homes or apartments are unlikely to have access to city water (which is not potable) or a formal sewage sys-



tem, and getting a phone line installed can involve years-long waits. Land titles are often unclear; people occupy land for generations without investing time and money in acquiring a land certificate. And when people do not legally belong to a neighborhood unit, they cannot get identification cards, which in turn means that they cannot legally enroll their children in school, get married, or draw on government assistance for the poor.

Like many other Third World cities, Jakarta faces countless challenges to development, such as generating funds, attracting good jobs, and building sufficient infrastructure. Perhaps the biggest obstacle to Jakarta's development lies in the combination of a morasse of corruption, a lack of political will, and the city's own image of what the city should look like. Jakarta wants to build a shining City of Tomorrow, following the vision of a tightly controlled, spacious, clean metropolis pioneered 80 years ago by Le Corbusier. Unfortunately, as governments around the world have learned, there's a problem with this vision: it doesn't actually work. This can only be more true in a context where the government displays a lack of interest in the voices or needs of any of its citizens, let alone the poorest. A group of Jakarta's poorest citizens is trying to get the government to realize its folly before Jakarta moves past a point of no return. To do so, they must first establish something that goes against the grain of Indonesian government: that poor people actually have a valid, important contribution to make to the city and to the political process.

A Bastard Child of Modernity

In Indonesia, poverty is often thought of as a rural phenomenon, as something that happens on the periphery of development, in

areas without telephones, paved roads, and electricity. Jakarta occupies a particular space in the Indonesian imagination as the incarnation of nationalism and of modernity, not as a place in which tens of thousands of people build makeshift homes under toll roads.

The state and city governments have based development plans on this fantasy of modernity. Jakarta's current land use plan, "Jakarta 2010," which was passed in 1999, speaks of putting Jakarta "on a par with developed Metropolises in the world... inhabited by an affluent, educated, and accomplished multicultural community in a sustainable living environment." It excludes the poor by omission from its vision of the city. The previous land use plan that was to run from 1985 through 2005, more openly disdained the poor: a 1994 book produced by the city government to promote Jakarta and explain the development plan openly describes the city's inhabitants, particularly those who have migrated to the city from elsewhere, as "low quality."

M. Berkah Gamulya, Advocacy Coordinator of the Urban Poor Consortium, refers to the government's vision of the "beautiful city" as "the bastard child of an illicit affair between the state and capital." "It's an outdated concept of modern," he explains in frustration. "They're trying to imitate the West, but these ideas are already out of fashion there. They're just interested in what the city looks like, the appearance—wanting it to be like Singapore with fountains, monuments, and big buildings—without thinking about social or economic realities."

Jakarta's governments and developers have willingly employed any means necessary to implement this vision of modernity. Government agencies routinely allow violations of the plan in order to achieve this vision or

cater to particular interests (often those who are willing to hand them envelopes of rupiah). If a developer wants a piece of land, new certificates suddenly appear showing that the developer has owned the land for decades, and residents can be evicted.

NGO activists and academics claim that, in the new plan, instead of addressing these code violations, the city has changed the code to embrace the violations. Jakarta 2010 heralded popular participation as one of its main principles, but the drafting process included virtually no participation from Jakarta's citizenry nor from the architecture and planning professional communities. And rather than providing "low quality" residents with the resources to become the "affluent, educated, and accomplished" citizens it dreams of, the government's aim has been to drive them away. City propaganda promotes a clean, modern "city without slums"—and accomplishes this goal by prohibiting street vendors and becak (bicycle rickshaws) from plying their trade or living on the scraps of land where they have made homes.

Municipal infrastructure investments have similarly aimed to hide or remove the poor. Flyovers and toll roads let cars and buses soar over poor neighborhoods without a glance. Housing projects rise far from poor residents' current homes and jobs, pushing the poor to abandon central neighborhoods for far-flung settlements, while new, more central housing developments boast rents and utility payments unaffordable to even middle-class families. The city is struck by annual floods that swamp all classes of home and can wipe out the assets of low-income families, but the government never makes contingency plans or enforces rules that would prevent the building of villas on cool hillsides that used to absorb water rolling down from the mountains.

Most egregiously, Jakarta's notorious governor, Sutiyoso, has taken to forcibly evicting low-income families: more than 16,000 families have lost their homes since 2000. A recent presidential decree that gives the government the right of eminent domain for the first time brings the prospect of even more evictions: whereas before the state had to negotiate with—or, more often, threaten and extort—local landowners into giving up land for government projects, they now have the legal right to take land for public projects.

They must first establish something that goes against the grain of Indonesian government: that poor people actually have a valid, important contribution to make to the city and to the political process.

Sutiyoso is a holdover from the autocratic regime of President Suharto, called the "New Order," that ruled Indonesia from 1966 until the reformasi movement of 1998. The New Order was characterized by military rule, persecution, and corruption. Although a democratic government has taken power, and despite current President Susilo Bambang Yudhoyono's anti-corruption drive, little has changed within Jakarta. Because Jakarta's city council re-elected Sutiyoso in 2002, before many electoral reforms had taken effect, he will not face another election until 2007.

Helping the Urban Poor Fight Back

In 1997, when reformasi was brewing and the monetary crisis was beginning to take its toll on families' purchasing power, the Urban Poor Consortium (UPC) was founded to help Jakarta's poor voice their needs. Ari Ujjianto, who first joined UPC in 2002 and is now its Research & Development Coordinator, says the organization has an alternative vision for Jakarta: not a "city without slums" but "a city for all people." "The poor, the rich," he says, "should all live in Jakarta, not be marginalized, and all have access to resources." He sees becak drivers and women selling snacks and cigarettes at streetside kiosks as a necessary part of the Indonesian economy, creating work opportunities and affordable goods and services where there would otherwise be even more dire poverty.

The UPC takes the view that the poor should be full citizens, with rights and responsibilities that equal those of the rich. The organization's strategy to effect this vision has evolved over time. The group first made themselves well known by exposing corruption in the distribution of foreign aid

intended for poor families. They then mobilized thousands of poor people to demonstrate for the rights to their livelihood, most famously in a campaign to preserve the right to drive becak within city limits. The state responded to this campaign with violence; becak were seized, and activists received threatening visits and phone calls. In 2002, UPC and the becak drivers took the government to court. The drivers represented themselves in court, which was itself a strong statement in a country where the poor are generally depicted as at best hapless objects of comedy and pity and at worst dirty and stupid. The trial court found that the governor, police chief, and military chief of Jakarta had violated the law. It ordered them to stop seizing becak and to make a financial settlement.

The victory was overturned on appeal, which is a closed process highly vulnerable to pressure from above and bribes from all sides. Despite this defeat, the UPC had put urban poverty in the spotlight and had proved that the urban poor could speak for themselves. UPC, however, had devised its strategies in response to crises like evictions and the prohibition on becak, and did not have strategies for sustaining their work over a longer period—especially once the shock of state violence and defeat impaired their ability to mobilize large numbers of people to respond to evictions and other threats.

"The people were traumatized," explained Ujjianto. "Before, UPC could call a demonstration for the next day and get 8,000 people; after the trauma, it was hard to get 500."

New Strategies for Building Power

Wardah Hafidz, UPC's charismatic founder, realized it was time for new strategies that were ongoing and not merely

responsive. She invited a South African community organizer to teach UPC about a savings group model being used there to strengthen and organize women. "The savings groups collect three things," explains Ujianto: "they collect money, they collect people, and they collect information." One woman in each of the several dozen groups serves as the collector. She makes daily rounds during which she collects deposits and learns who has sick children, who has no running water, who is in danger of eviction. Then at weekly meetings, the group discusses these problems and strategies to address them. While UPC still helps communities with land struggles, particularly the mass evictions that continue throughout greater Jakarta, the savings groups have become an important complementary strategy. As Ujianto puts it, savings groups are a more "feminine," domestic mode of organizing than the "heroic" demonstrations and land occupations that get activists' blood flowing. This mode builds groups that stay together whether there is an immediate threat or just the daily challenges of poverty and marginalization.

This is crucial because, as Ujianto points out, "the strength has to come from the poor people themselves. Without them, UPC is nothing." As an NGO staffed mostly by recent college graduates and other educated activists, and funded by international sources, UPC's legitimacy depends on developing grassroots groups and leaders. Its organizers work to encourage poor people to redefine their own role in the city. "One of the duties of the organization," Ujianto says, "is to build their feeling of confidence so that the poor feel like they are equal with the other inhabitants of the city." UPC pushes the poor to meet directly with the governor and government ministers in whatever clothes they own and normally wear. Together the women in the savings groups visit the confusing, intimidating, gleaming bank buildings that rise above the streets of Jakarta to open joint accounts. In order to avoid internalizing and reenacting state oppression and society's bias against the urban poor, Gamulya explains, "we have to change the discourse that exists at all levels, and the behaviors not only of the state but of ourselves."

Despite their unusually strong commitment to these ideals of fundamental social

change, UPC is not doctrinaire in its use of tactics, believing that networking is important alongside more traditional grass-roots strategies. UPC does not hesitate to build connections with architects, politicians, government ministers, religious leaders, local leaders, international NGOs and foundations, or other parties that can support its mission. Networking has also involved the formation of a national network to replicate UPC's work in a dozen cities around the country. With the help of one international organization, UPC is training local leaders in Jakarta and the other cities to document evictions' true costs: homes, assets, community ties, access to school and jobs, and time and money spent to find new sites or rebuild on the old sites. As Thohir explains, the government fails to recognize that evictions will never successfully realize the government's goal of eradicating the poor.

"Communities have their own way of dealing with evictions," he says. "These people don't want to go back to rural areas where there are no jobs... They just move [within the Jakarta metropolitan area]; the evictions just use up money."

Jakarta in the Global Context

Jakarta needs to function for all its residents, Ujianto points out. This does include some current city goals, such as making the streets cleaner and safer. The city's current approach, however, is neither humane nor efficient. Unfortunately, Jakarta's approach to development is being replicated throughout Indonesia. Smaller cities' mayors see Governor Sutiyoso's work as a shining example of development, and are outdoing themselves to build malls, ban street vendors, and raze poor neighborhoods.

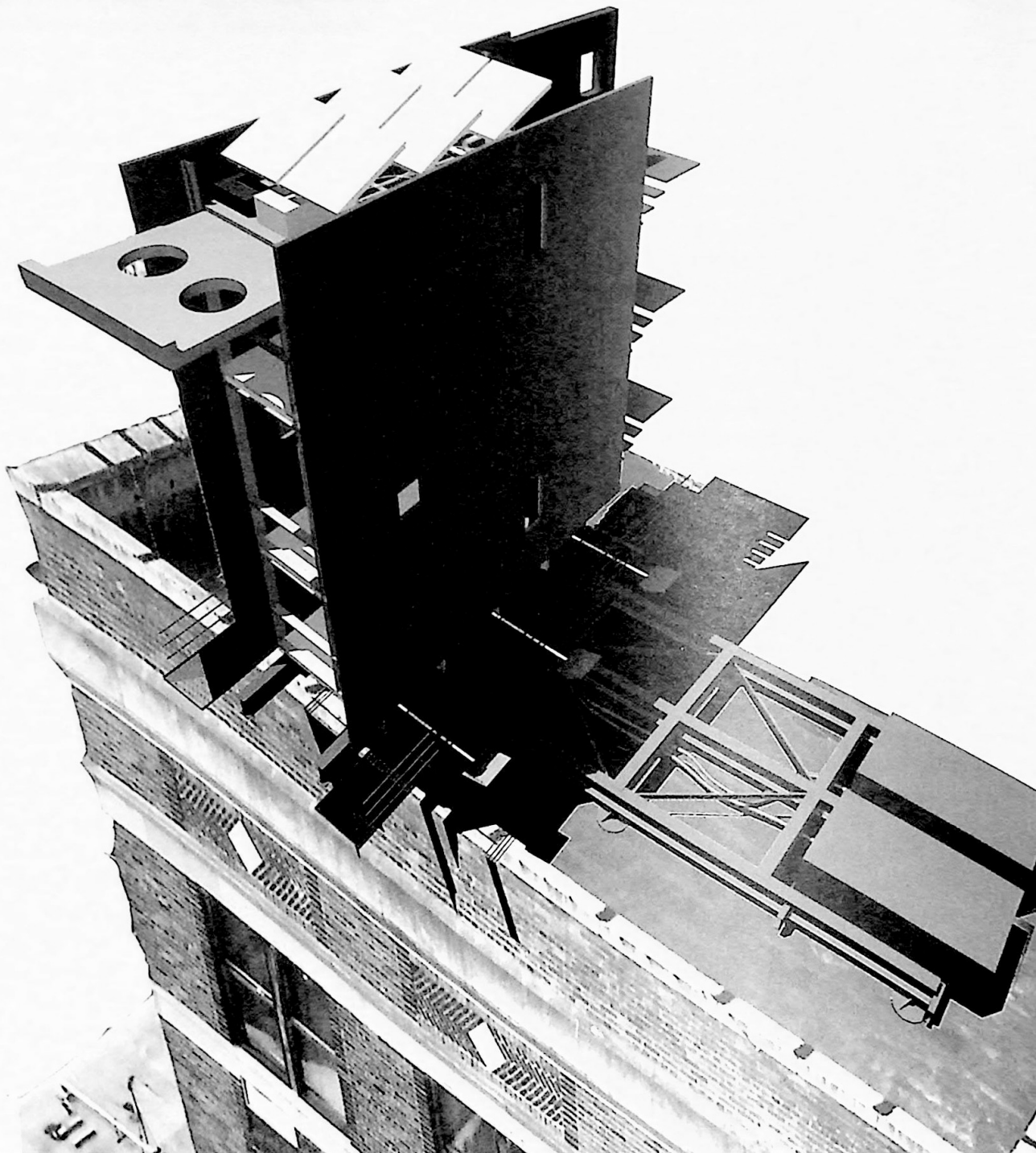
The same trends are at work in cities throughout the Third World. A 2003 report from the United Nations Human Settlements Program, *The Challenge of Slums*, reports that one-third of the global urban population live in slums. Mike Davis writes that more than half of residents of cities in developing countries illegally occupy land. Ken Fernandes, Coordinator of the Asia & Pacific Programme of the Centre on Housing Rights and Evictions (COHRE), says that what is happening in Jakarta is "absolutely similar" to what is happening in other Asian cities.

"There is very little understanding of the informal sector," he explains, so "governments try to ignore or destroy it rather than absorb or integrate it." Cities see their salvation in foreign investment and big infrastructure projects like expressways, but do not address the problems that cause the influx of migrants into the cities or those people's needs once they arrive. *The Challenge of Slums* links these developments to the International Monetary Fund's Structural Adjustment Programs of the 1980s. The report describes these programs as being "deliberately anti-urban in nature" due to a desire to reverse a perceived urban bias in previous policies.

Through regional and global networks, UPC staff and community leaders compare notes and share strategies with their counterparts in countries like Malaysia and Thailand. In these countries, unlike some other ASEAN states such as Burma and Laos, NGOs and grass-roots community groups have the political maneuvering room to push for change.

Whether the government is responsive to their efforts is, of course, a separate question. UPC's creative use of grassroots, networking, and transnational strategies gives the organization a power beyond what its numbers or financial resources would suggest. Its image of what Third World cities should be involves profound change in conceptions of the urban poor, which in turn suggests a very different vision of what a city can be. Achieving its vision could start with basic steps that most people—including the urban middle class—could support, notably a more transparent and participatory approach to urban planning and policy making. Though Governor Sutiyoso is entrenched until 2007, local elections planned for the next few years for lower offices offer hope that officials may find it in their own interest to respond to constituents' needs. If not, UPC will continue to win incremental victories like postponing evictions and helping families save money for emergencies. But without fundamental change in the city's approach to development and its conceptualization of its citizens and the city's obligations to them, Jakarta will remain a cautionary tale of Third World urban growth gone wrong. ●

Designing the Affordable House of Tomorrow



*Adaptive Re-use
by Steve Raiké (Bear Creek, PA)
Image courtesy of SECCA*

THE ARCHITECTURAL PROFESSION HAS long been blamed for keeping its head in the clouds instead of democratizing its skills and designing for those in need of better housing. Architects are not always attentive to pressing social and economic problems: most architectural firms would sooner design mansions and museums than tackle the problem of affordable housing. Though Modernist architects tried to address this challenge at various points throughout the 20th century, their best designs remained in the realm of exhibitions and experiments; in the end there was no revolution in building housing for working-class families. Now America sits at the edge of an affordable housing crisis: a growing number of households pay more than 50 percent of their income for housing, and population is projected to increase 48 percent by 2050. We must find a way to generate a vast number of sound, affordable, and desirable housing units.

Since 1994, the Southeastern Center for Contemporary Art (SECCA) in Winston-Salem, North Carolina has set out to raise awareness of pressing social issues through its Artist and the Community program. The program was initially a residency program for artists who produce new work on issues critical to the local community. In 2002, David J. Brown, SECCA's Senior Curator, took the program to a broader scale with an international design competition for a prototype affordable house. Brown had become concerned with the rise of housing prices in his region and noted that the existing housing stock was aging, declining in quality, and lacking in character. The HOME House Project, as it was called, aimed to "turn the model inside out": instead of letting conventional building methods and archaic housing types dictate design, the competition would empower architects and artists to devise new design strategies to address the housing problem. The HOME House competition aimed to establish a new national housing model that would showcase advances in the field of sustainable design and to implement this model through new partnerships enabling "creative applications of affordable design."

Habitat for Humanity is the most well-known builder of affordable housing. Its model house, however, is poorly designed,

and because it relies on volunteers and donations rather than standard development practices, Habitat has not proven to be an economically sustainable solution to the shortage of affordable housing in America. SECCA thus charged its competitors with transforming the Habitat model into one that can be replicated efficiently and that could one day become completely self-sustaining. The competition called for the design of a home for low- to moderate-income families within specific parameters for an unspecified site in Winston-Salem. An impressive number of architects submitted 442 designs for a 900-square-foot, two-bedroom house with no garage, one bathroom, and a covered entrance, sited on a typical 140-foot by 60-foot lot and with a working budget of just over \$100,000.

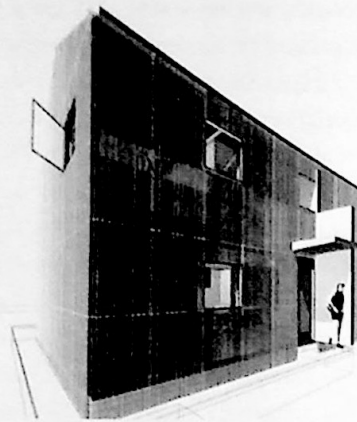
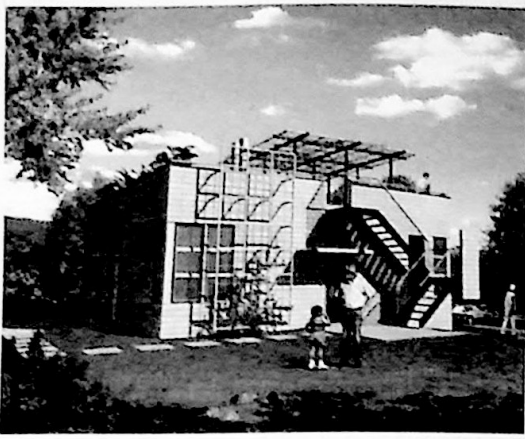
The design entries that received awards of merit have been published in a book from MIT Press and are now on view through 2006 in an exhibition traveling nationally. They reflect a broad cross-section of ideas, types, and technologies. Some architects and artists simply updated traditional housing types, such as the Southern vernacular "dog trot" or the "cracker house," with site-specific and passive solar technology. Other competitors broke with convention to propose innovative construction techniques—borrowing from other industries or pushing the boundaries of new technologies—as well as new housing types that address the needs of contemporary, non-nuclear families.

Several designs employed a modular approach, giving their houses flexibility to respond to the changing needs, desires, and aspirations of the client family. One such entry, the House of Ivy, can be configured into single units, duplexes, or townhouses as needed. Another entry, the FrameWork House, is a traditional housing form that open-endedly incorporates recycled materials, giving homebuilders their choice of different colors and materials to suit their neighborhood or the homeowner's taste and interests. Any houses built according to this design can be individualized in numerous ways, such as including colored recycled aluminum in the facade, creative use of paint remnants, employing a friend or family member's masonry skills, or incorporating salvaged building materials.

New methods for prefabricated, off-site construction techniques were the most widely used means among the entries for making designs flexible. While it was not required in the competition brief, many entrants recognized the value of prefabrication for increasing energy and cost efficiency; the FrameWork House, for instance, was largely composed of Structural Insulated Panels (SIPs), which have traditional building materials like plywood for their surface but an insulating material like polystyrene for their core, integrating both functions in one product which can be easily assembled on-site. More importantly, prefabrication, many entrants recognized, could potentially lead to more innovative designs. Today's housing market thrives upon a standardized kit of parts, typified by light-frame wood construction, standard dimensions, and off-the-shelf products available at big-box retailers. While housing standardization is economically efficient, it stifles the technological and material advances seen in other industries. Many proposals in the HOME House Competition attempted to adapt these advances to systems of prefabrication, and in the process improve the aesthetics often lacking in standardized parts.

Prefabrication can be done well or not so well. Ikea's furniture is a successful example, while the monotony of Levittown—when first constructed, anyway—is perhaps less inspiring. Competition jury member Steve Badanes, professor at the University of Washington and founder of the Jersey Devil architects/builders, noted that while prefabrication can save time and money in on-site labor, it was more important that the designs be "intelligent, and not just a cookie-cutter box being shipped to a site—it still must respond to the culture and climate of a particular site and region. We were looking for houses that responded to [Winston-Salem]." Site-specific designs that are anything but generic allow the home to flexibly respond to the client, program, and the local climate, culture, and vernacular language of architecture.

As the HOME House Project progresses, six of the designs that successfully responded to the feel of Winston-Salem will actually become built reality. Sustainable Housing, LLC, a company formed to build the winning designs at market-rate prices, will put them up for sale. The city council has already voted



Left: *Passive Solar Design* by Rado Ivanov (Studio R22, Alexandria, VA) Image courtesy of SECCA
 Right: *Gradient House* by Beth Blostein (Blostein/Overly Architects, Columbus, OH) Image courtesy of SECCA.

to approve the zoning request for four houses. The first houses are expected to be priced a bit beyond the affordable range, but will give the developers the opportunity to “work with the designers and builders to learn more about actually building the designs so we can tell where costs can be cut without sacrificing the original intent of the program,” says Sustainable Housing’s Bill Benton.

Beth Blostein of Blostein/Overly Architects in Columbus, Ohio, has been working with Sustainable Housing, LLC, to construct her winning design for the Gradient House. The Gradient House employs a layered, exterior skin comprised of translucent polycarbonate panels, a textile veil for shading and cooling, and a prefabricated greenhouse structural system, to create a spacious home for a family of four that is private but full of natural light. The greater significance of this house is the adaptability of its design to a range of climates. When built, the flexible design of the Gradient House will demonstrate on the ground how design can democratize access to livable and inspirational housing.

The HOME House Project’s experiment is already serving as a model for other regions of the country. After the touring exhibition traveled to El Paso, for instance, the commu-

nity there launched a grassroots effort to create a similar competition—the HOME House Project El Paso—inviting local designers and architects to use the data from Winston-Salem’s competition to produce new designs suitable to the locale. The goal is not only to build new units, but to initiate affordable, sustainable design in the city.

Technology is rapidly changing the world of design, and design competitions, innovative architectural practices, and architectural education have begun to apply new materials and technologies to critical social problems. Elizabeth Alford, Lecturer in the Master of Architecture program at the University of Texas at Austin, feels that “the real thrust is towards widening architecture’s range; reaching more clients/consumers by taking on design of houses for people who typically wouldn’t be able to afford an architect... Architects are trained to design exquisite objects, and designing an affordable house is more about designing a process, or system. You think more like a product designer, more about communication with the public.” The HOME House competition is thus part of a larger re-imagining of the architect’s place in culture and construction, a reexamination necessary to address social needs through design.

The most important lesson from SECCA’s experiment is that the problem of affordable housing can be solved with style. The price tag of many of the groundbreaking houses in the HOME House Project will only become more affordable as more people—potential homeowners as well as developers—come in contact with and appreciate these new models for living, and as higher production volume leads to greater efficiency in the construction process. Both homeowners and the housing industry stand to benefit, but it will take the collaboration of many designers, developers, craftsmen, policy makers, and community leaders to adapt good design on a larger scale. ●

2006 schedule for the HOME House exhibition:

Jan. 16 - Apr. 15: Museum of Design, Atlanta, GA

Jan. 28 - Apr. 30: Fredrick R. Weisman Art Museum of Art, U. of Minnesota

May 5 - Jul. 30: Contemporary Art Center, Cincinnati, OH

Jun. 29 - Sep. 24: Plains Art Museum, Fargo, ND

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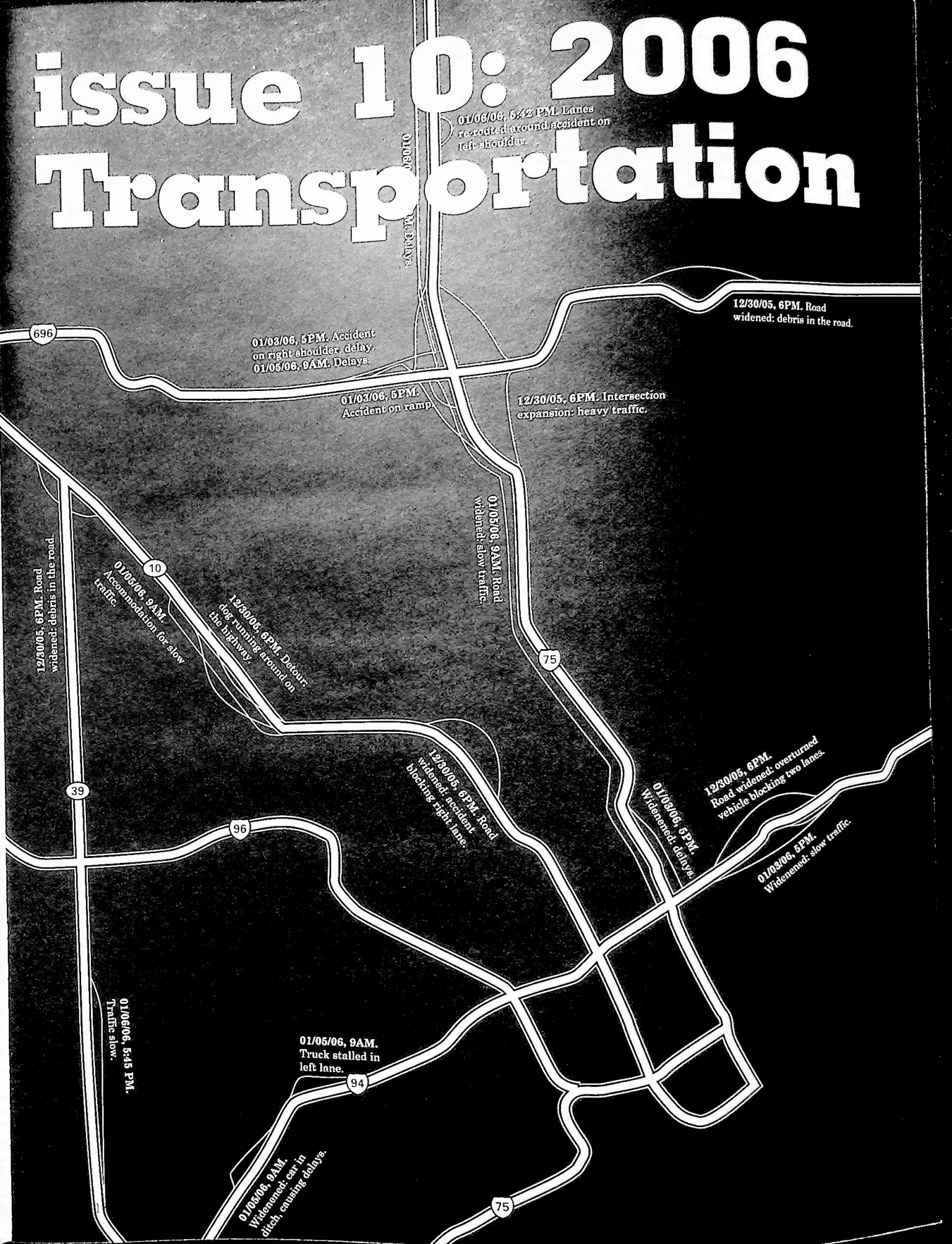
HYPOTHETICAL ELASTIC HIGHWAY MODEL ACCORDING TO DETROIT AREA TRAFFIC REPORTS FOR 12/30/05, 01/03/06, 01/05/06, AND 01/06/06.

The Hypothetical Elastic Highway Model is a “Toyotist” response to highway construction. It follows a logic of production that responds immediately to market demand. Under this model, the highway adapts itself to heavy traffic by “growing” extra lanes off to the side of the road. If an accident blocks a couple of lanes of traffic the Elastic Highway can re-route itself around the mess. This hypothetical model relies on highways constructed out of some kind of flexible material that can be expanded and re-shaped speedily. It also relies on laborers being available to do the re-shaping. Those laborers could for example be temporary workers on hourly wages who waited near highway ‘hot spots’ during rush hour to adjust the road’s shape as necessary.

In the spirit of New York’s Robert Moses and Detroit’s mayor Albert Cobo, the Elastic Highway Model calls for a clearing of space around expressways to make way for flexibility. Much like Moses’ and Cobo’s highway programs displaced thousands of people and brought entire neighborhoods to ruin, the Elastic Highway Model would inevitably impact those structures along highway routes. But, to quote Cobo’s response to complaints from families forced to relocate because of Detroit’s new expressways, “That’s the price of progress.” (Detroit Free Press, March 16, 1954)

— Danielle Aubert

issue 10: 2006 Transportation



01/08/06, 5:42 PM. Lanes re-routed around accident on left shoulder.

0108010
McDelany

01/03/06, 5 PM. Accident on right shoulder, delay.
01/05/06, 9 AM. Delays.

12/30/05, 6 PM. Road widened; debris in the road.

01/03/06, 5 PM. Accident on ramp.

12/30/05, 6 PM. Intersection expansion; heavy traffic.

12/30/05, 6 PM. Road widened; debris in the road.

01/05/06, 9 AM. Accommodation for slow traffic.

12/30/05, 6 PM. Detour; dogs running around on the highway.

01/05/06, 9 AM. Road widened; slow traffic.

39

12/30/05, 6 PM. Road widened; accident blocking right lane.

01/08/06, 5 PM. Widened; delays.

12/30/05, 6 PM. Road widened; overturned vehicle blocking two lanes.

96

01/03/06, 5 PM. Widened; slow traffic.

01/06/06, 5:45 PM. Traffic slow.

01/05/06, 9 AM. Truck stalled in left lane.

94

01/05/06, 9 AM. Widened; car in ditch, causing delays.

75

Putting a Price On Driving

CAN MARKET INCENTIVES FIX AMERICA'S TRANSPORTATION WOES?

AMERICA FACES TWO FUNDAMENTAL transportation problems. First, emissions from automobiles, trucks, and planes pose serious threats to public health and the environment. Second, commuters complain about traffic delays that are getting worse every year.

On the emissions front, our country alternates between denial of the problem (for example, claims that global warming is a hoax) and praise for technological solutions to the problem, mainly through new technologies for fuel such as hybrid and hydrogen vehicles. To deal with traffic, spokesmen from the Highway Users Alliance and road-builders suggest the need for more road construction in order to keep up with traffic growth, while environmentalists criticize our failure to improve public transportation.

This dominant debate in America ignores a group of solutions that, while not glamorous, are proven at reducing both emissions and traffic. These solutions harness the power of market allocation of resources and new technologies in order to manage the demand for transportation. In doing so, they offer opportunities for cost-effective near-term progress on both traffic and emissions that go far beyond what talk of a hydrogen economy will likely be able to offer for decades to come.

The Trouble with Cars

With soaring health care costs in the spotlight, many now consider automobile transportation a major source of public health problems. For decades, it has been acknowledged that motor vehicle exhaust contains known or suspected carcinogens. But recent studies show these pollutants can reach dangerous concentrations near many heavily traveled highways, presenting cancer

risks at times an order of magnitude higher than established federal thresholds that require mitigation. According to a 1999 Department of Transportation study, the annual health costs of smog and fine particle air pollutants from motor vehicles were estimated at \$40-60 billion. That amounts to an additional health care cost of \$600/year per household, concentrated among the one hundred fifty million Americans living in poor air quality areas. And that doesn't include the costs of other toxic pollutants from cars, or the over 40,000 deaths annually in U.S. motor vehicle accidents.

Transportation remains the fastest growing source of greenhouse gas emissions and accounts for a third of such U.S. pollution. For automobiles, these emissions are a function of miles driven and fuel economy. Even if recent declines in average motor vehicle fuel economy are reversed by a sharp rise in use of hybrid vehicles and alternative fuels, the United States—the world's largest greenhouse gas polluter—will still fall short of cutting greenhouse gas emissions by the 60 percent needed to stabilize the climate and slow further global warming. That is especially true because other transportation modes with severe impacts on greenhouse gas emissions are expected to grow—total truck mileage is forecast to double in the next twenty years, spurred by global trade, while commercial aviation, which has the highest rate of greenhouse emissions and air pollution per-person-mile traveled of any transportation mode, is growing rapidly, encouraged by subsidies, excess capacity, and consequential low fares. In other words, unmanaged U.S. traffic growth means continued failure in both air pollution and climate control strategies.

Meanwhile, traffic congestion continues to grow. The Texas Transportation Institute's

2005 Urban Mobility Report found that annual delay per rush hour traveler has grown to 47 hours—that means nearly two days sitting in traffic for the average American driving at rush hour. That figure has tripled since the survey started in 1982. Annually, 2.3 billion gallons of fuel are wasted by cars sitting in traffic jams.

A Hydrogen Solution?

Motor vehicles today contribute considerably less pollution thanks to the Clean Air Act, which limited emissions of a range of key pollutants such as nitrogen oxide and carbon monoxide. Since 1970, pollution-per-mile driven has fallen over 90 percent. However, today's motor vehicles still account for a third or more of smog pollution.

Recently adopted U.S. motor vehicle emissions and fuel standards are expected to cut the rate of smog-related pollution-per-mile even further—by four-fifths—over the next several decades. But from 1980-99, vehicle-miles traveled grew 87%. If this growth continues, the extent of motor vehicle emissions that contribute to smog, particulate pollution, and cancer, may decline by 2020, but only by a little more than half, as rising vehicle miles traveled reduce the impact of the cleaner technologies that result from these new regulations.

Rising long-term oil costs, spurred by growing demands for motor vehicles in China and elsewhere, will likely spur more investment in efficient vehicle technologies, including hybrids, fuel cells, biofuels, and encourage the use of lighter, stronger materials. Hydrogen-fueled vehicles remain a distant prospect as high costs and substantial impracticalities pose major barriers to their practical commercialization. Additionally, major questions regarding how to produce

hydrogen remain unanswered. And available substitutes for limited oil reserves are not all good for public health and global warming—new carbon-based fuel sources like gasified coal or continental shelf methane reserves promise ample transportation fuels for decades to come.

The Limits of Public Transportation and Smart Growth

From 1996-2001, U.S. transit ridership growth outpaced the growth rate in driving for the first time in almost a century. This was largely because of the transportation and Smart Growth reforms of 1990s. New federal transportation laws in 1990-91 reduced a longstanding bias that prioritized investment in new highways over transit, walking, and cycling. These reforms brought new accountability for the environmental impacts of transportation decisions, more flexible funding that could be spent improving public transportation, and greater opportunities for public involvement.

A new federal transportation bill passed in August 2005 boosted federal road and transit funding by a third for the next six years. Congress rejected proposals to rollback long-standing environmental protections and instead dedicated more funds for bicycling and planning while requiring greater consideration for resource conservation, public health, and strategies for reducing environmental impacts. Recent spikes in fuel prices may even prompt some states to rethink post-9/11 transit funding cuts and their plans for new highways.

But recent administrative, regulatory, and judicial actions have weakened many of these reforms. The assault on Smart Growth continues as a well-financed lobby reframes the debate to focus on property rights and deregulation. Nationally recognized growth management programs in Oregon and elsewhere have been threatened by initiatives requiring taxpayers to compensate land owners for development restrictions. America's national railway, Amtrak, faces collapse under the White House's threat to end subsidies and the recent firing of David Gunn, a turnaround artist who had brought strong new management to the railroad. And some are using high fuel prices, evacuation con-

cerns, or other issues as a smokescreen to press for more roads and the suspension of environmental laws.

Managing Travel Demand with Market Incentives

Smarter growth and more investment in transit will be a vital part of addressing America's transportation problems, but these alone will not do the job. Neither will technology fixes to vehicles and fuels, as essential as these remain for curbing environment and public health problems caused by pollution. These strategies need to be combined with smarter transportation operations and pricing policies if we are to address the continued growth in demand for travel.

Programs that use transportation pricing to manage demand for travel first gained prominence in the U.S. through the 1991 Intermodal Surface Transportation Efficiency Act, which opened the door for experimentation with market-based incentives such as "congestion pricing", which sets road tolls at higher costs during rush hours, while giving off-peak discounts. Federal law has continued to expand opportunities for using federal transportation funds to introduce toll traffic management, most recently in the August 2005 transportation law which offers several new programs encouraging toll-based road financing and toll-lane-financed public transportation improvements. A number of local initiatives in the U.S. and abroad have shown transportation pricing's effectiveness at reducing traffic and emissions.

In New York, the 2001 introduction of higher peak tolls with a modest off-peak toll discount on Hudson River crossings into

Manhattan shaved 7 percent from peak traffic volumes. Forty percent of toll revenues support Port Authority Trans-Hudson, a rapid rail service between New York and New Jersey. In San Diego, since 1996, single occupant vehicles have been able to pay a fee to travel on I-15's High Occupancy Toll (HOT) lanes, which are free for carpools. These toll revenues support new express bus services. The system has achieved 80 percent approval from corridor residents, who can save 15 minutes or more in these managed lanes. As a result of its success, the system is being expanded. Minnesota, Texas, Virginia, Maryland, Colorado and other states have recently opened or advanced related initiatives to create toll-managed lanes.

Perhaps the most-watched transportation pricing reform in the world is London's congestion-pricing system. Since 2004, to enter a core area of central London on any route, motorists must pay a daily "cordon charge" that pays for improved public transport. As a result, congestion and traffic volumes in the central area decreased by 30 and 15 percent, respectively. Bus use increased by 38 percent, while traffic emissions of nitrogen oxides and fine particulates dropped 12 percent. The initiative's success resulted in the reelection of London's mayor and expanded reforms. Business leaders in New York and other U.S. cities have begun promoting similar initiatives.

Pay-as-you-drive (PAYD) insurance is another promising market incentive to cut traffic congestion by 10 percent or more. PAYD converts a portion of the annual insurance fee into a per mile fee, giving consumers a chance to save money if they drive less. Now offered in some form in four states by

**Transportation pricing is an idea
whose time is come, mainly because
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Will new tolls and congestion charges be used just to finance more highways, resulting in more sprawl and pollution, or will they provide a constructive response to our pressing public health, equity, and environmental problems?

GMAC Insurance, in England, Israel, and in several state-based pilot projects across America, PAYD insurance shows strong promise to help curb congestion, pollution, and safety problems in coming years.

Public transportation improvements combined with marketing and demand management, even without pricing measures, have shown considerable power to reshape travel demand. During the 1996 Atlanta Olympics, for example, Atlanta adopted measures that reduced downtown morning traffic levels by 21 percent. This resulted in lowered peak ozone levels by 28 percent and decreased hospital visits by over 40 percent for children with asthmatic-related incidents. When such improvements are combined with Smart Growth and pricing incentives, even bigger changes result.

The success of these programs in reducing traffic from 7 to 30 percent, reducing emissions, and improving public health has drawn considerable attention from policy-makers throughout America and the world. Transportation pricing is an idea whose time is come, mainly because recent developments in technology and financing have made its efficient, unobtrusive use possible.

The Technology and Economics of Transportation Pricing

New technologies, like cheap electronic toll transponders, high-speed readers, and computerized data, support the efficient implementation of pricing incentives with little intrusion on the driving experience. They make it possible to adapt schemes to address local objections, eliminating toll booth backups and creating discounts for certain driver

categories. Thanks to these technologies, states are now able to consider tolling in areas where political realities have prevented progress in the past.

Such technologies also have made transportation pricing more financially attractive—so much so, in fact, that the private sector is becoming interested in entering the market. In 2004, the City of Chicago garnered \$1.8 billion by leasing the Chicago Skyway, an 8-mile, 6-lane elevated toll highway in a 99-year private concession. The revenues retired project debt, supported investments in libraries and home heating assistance programs, and will help support the city's operating budget for years to come. The concession contract limits toll increases and sets various requirements for operation of the road. Many proposals for tolling projects are emerging – potentially amounting to \$40 to \$50 billion in new private investment in highways.

In many places, the question is not whether decision-makers will increase reliance on tolls to finance infrastructure investment, but how those tolls will be imposed and what their revenues will pay for. Will tolls be used simply to build more lanes, maximizing revenues and traffic? Or will they be designed to better manage existing lanes and traffic growth while financing improved transit and roads? Will the concession deals include community benefit agreements to protect the environment, public health, labor, and neighborhood concerns or will such deals sacrifice long-term public interests to balance short-term budgets? Transportation finance is at a crossroads: tolls will either finance massive new road expansion, or will moderate and manage traffic demand

while financing a wider spectrum of transportation choices.

Time for Transportation Pricing

Studies show improved public transportation, walking, and bicycling and support for smart growth, together with time-of-day road pricing, pay-as-you-drive car insurance, and employer commuter incentives, could support robust job and housing growth while slowing growth in motor vehicle traffic in coming years. Experiences from Arlington, Virginia to Portland, Oregon, from Bogota to the Netherlands, effectively show how this can be achieved.

It is time for America to apply the tech fix not just to vehicles and fuels, but also to traffic management. An unusual coalition of road and transit industries, environmental, and government representatives now seek common ground to advance market incentives to better fund and manage America's transportation systems. Will new tolls and congestion charges be used just to finance more highways, resulting in more sprawl and pollution, or will they provide a constructive response to our pressing public health, equity, and environmental problems? Only time will tell. ●

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Balancing Commerce and the Environment

IN AMERICA'S NATIONAL PARKS

FAMOUSLY CANTANKEROUS ECOACTIVIST Edward Abbey railed against the National Park Service in his 1968 classic, *Desert Solitaire*, a memoir about his time spent as a ranger in Arches National Monument. In a section titled "Polemic: Industrial Tourism and the National Parks," Abbey re-dubbed the park "Arches Natural Money-mint" and decried its commercialization.

Of special concern to Abbey was the public's reliance on automobiles to visit the parks and the increased damage to natural landscapes that car traffic brought. Abbey thought that the Parks Department, seeking a higher volume of visitors, sacrificed land management on the altar of commerce. In his less politically correct moments, Abbey suggested that if disallowing cars in the parks meant that the infirm and children would be kept out, so be it. "Children ... need only wait a few years—if they are not run over by automobiles, they will grow into a lifetime of joyous adventure," he wrote. "The aged merit even less sympathy: after all, they had the opportunity to see the country when it was still relatively unspoiled."

Abbey proposed fixing the park system's congestion problems "by the simple expedient of requiring all visitors, at the park entrance, to lock up their automobiles and continue their tour on the seats of good workable bicycles provided free of charge by the United States government." He also advised placing a moratorium on the construction of new roads in parks.

If Abbey railed against the volume of traffic in the parks forty years ago, he must be turning in his grave today. The problem of car abuse in the national parks has become apparent to anyone visiting a high-profile natural wonder in the height of the summer season. For instance, the National Parks Conser-

vation Association (NPCA), an organization which advocates for the parks and the National Park Service, reports that in Great Smokey Mountains National Park in Tennessee, it can take six hours to drive an eleven-mile loop on a heavily visited day. According to the Sierra Club, smog has reduced the visibility of scenic areas by 80 percent. In the Grand Canyon, on busy summer days, 6,000 cars compete for 2,500 parking spots. In Yosemite, adds the Sierra Club, "over an eleven-year study period, bad air levels in the park exceeded those found in many major metropolitan areas, including Atlanta, New York, and Houston."

Steps Toward a Solution

In 1998, the Transportation Equity Act (TEA-21) authorized a federal 18.4 cents per gallon gas tax. From that revenue, \$165 million was earmarked annually for the general use of the National Park Service. The parks authority set aside a small portion of these funds to tackle problems of overuse and congestion.

One of the programs set into motion by TEA-21 money is the National Park Service's Alternative Transportation Program (ATP), which helps parks create and execute alternative transportation plans. The ATP has had notable success in some parks: the NPCA's website cites the stellar example of Maine's Acadia National Park, which implemented a propane-fueled bus system called Island Explorer in 1999. In the first year of the system's use, "the Air Bureau of the Maine Department of Environmental Protection estimates that the program reduce[d] park nitrous oxide pollution by 2 tons, hydrocarbons by 4 tons, carbon monoxide by 32 tons, and carbon dioxide by 522 tons—amounts roughly equal to the output of a small power plant."

But that kind of success story has not been repeated across the spectrum. TEA-21's \$165 million is not enough to implement good public transport at every park. According to the NPCA, America's national parks received only two-thirds of the overall funding they actually need.

Congress, meanwhile, reduced funding for the Alternative Transportation Program. The August 10, 2005, reauthorization of TEA—now called The Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users (SAFETEA-LU)—will dole out \$96.9 million for alternative transportation in parks by 2009. According to the NPCA, however, this figure falls woefully short: "A study released last year by the Federal Transit Authority documented that \$1.6 billion will be needed over the next 20 years to meet the National Park Service's alternative transportation needs such as the development of shuttle bus systems."

Getting On the Bus at Glacier

Glacier National Park, for instance, wants to institute a public bus system that could minimize auto use among the park's 1 million annual visitors, 90 percent of whom arrive in automobiles. Since Amtrak currently serves both sides of Glacier, an eventual goal is to enable visitors to take a train to the park and then connect to a bus, providing the option of a completely car-free experience.

At the moment, however, Glacier can only maintain a minimal public transportation schedule. The park concessioner, Glacier Park, Inc., runs 32 historic red touring buses, the "red jammers," which were built in the 1930s and put back in use in 2001 after being refurbished by the Ford Motor Company—an effort cited by the Alternative Transportation



Glacier National Park

Program as one of its success stories. Visitors can sign up for a guided interpretive tour, at a cost of \$30 to \$75, but with a considerable downside: being stuck onboard for three to five hours.

Hikers now have the additional option of taking the park's "hiker shuttle," which crosses the park making stops at several trailheads. According to Susan Low, the transportation planner for Glacier, "Going-to-the-Sun Road," the dangerously narrow, 50-mile scenic thoroughfare that bisects the park

"needs major rehabilitation work, and so there's an eight- to ten-year construction project we're planning right now. Our environmental impact statement says that we have to offset the negative impacts of the road's construction by starting this new point-to-point system, but we hope it becomes institutionalized and remains part of the park even after the construction is done." To get from one side of the park to the other, however, still takes almost three hours, at a cost of \$16. It takes more money and

time to continue traveling along the east side of the park after transferring to a different shuttle. The cross-park shuttle also only operates four times a day and seats only fifteen passengers.

Low and her fellow planners are also researching ways to run those buses on alternative fuel to reduce park pollution problems. "We're looking at different types right now, from electric hybrid buses to biodiesel," she says. Like Acadia's Island Explorers and buses in use at Zion National Park, the red jam-



mer buses use dual propane/gasoline engines. Propane has fewer emissions than gasoline, but is still not a very clean energy source and is much less fuel-efficient.

Naturally, the problem becomes the funding gap. "We think [the program is] going to cost about a million dollars a year to run, not including the cost of the buses," says Low. "We're looking at different alternatives, one of which would be an entry fee addition." (The current entry fee is already \$20, steep by national park standards, with an additional

cost for the shuttle.) Another option is to create a concession pass which would be part of a package deal to be sold by participating hotels and retail merchants. The park could also raise transportation fares, but Low says, "if we completely charge what it costs, it would be too expensive and nobody would even ride it."

Glacier has taken up Abbey's bicycle idea on one level—employees can bike from building to building with free bikes provided by the park. But the program has not been extended to visitors.

Learning From Urban Parks

While Low and her colleagues contend with the logistics of ferrying large numbers of people across expansive vistas, urban parks, striving to preserve their historic sites and the feeling of a bygone downtown, have found that congested surroundings can work to their advantage. Their methods of dealing with transportation problems are instructive for cities trying to bring visitors to attractions via public transport.

Lowell National Historical Park, in Lowell, Massachusetts, is a favorite site for schoolchildren on field trips and tourists looking to learn about the mill culture of 1800s New England. A trolley system was put in place in the 1980s and runs on about a mile and a half of track. It runs from downtown Lowell into the park, connects the visitor center with the exhibit sites, and eventually links up with boats that take visitors out to the canals and interpretive sites that are situated on the water. Visitors can also travel most of this route by foot, and the park has been working to expand the area people can walk to by building a river walkway.

The Alternative Transportation Program has recognized the Lowell site for successfully shifting visitors' transportation of choice to the park's system of historic trolleys and canal boats. Part of this success is due to the fact that people who visit simply don't have other options. "You could drive, but there's no parking," says the Lowell National Park planner Chris Briggs. "You could drive around in circles for a while until you find a place at a meter. It's much quicker just to use the trolley." All of the trolley stops are also located close together, which makes getting where a visitor wants to go painless.

Relatively affordable because of the modest amount of ground to cover, the trolley

system was constructed with money appropriated from the Department of the Interior, and the maintenance and upkeep costs, Briggs says, "now come from our annual operating budget." Pending a feasibility study, the park now plans to extend its trolley system to connect with the major public transportation hub in town—the commuter rail. "Right now people can take the train to the terminal and then get on the downtown shuttle bus to get downtown," says Briggs. "What we're proposing is that the trolley could replace that shuttle bus, and it would provide the direct connection, so that people could get on right off the commuter rail and come to the park." For cities with major attractions, such as stadiums or aquariums, Lowell's plan might be instructive—make the transportation linkage to your attraction as simple as possible, and then people just might take the train instead of a car.

In Lowell, as in Glacier, the use of alternative transportation to preserve the beauty and well-being of the land, or the historic site, becomes increasingly desirable as the visitor volume goes up. Abbey's years of observation as a park ranger led him to write that the Park Service slogan—"Parks Are For People"—"decoded, means that the parks are for people-in-automobiles. Behind the slogan is the assumption that the majority of Americans ... expect and demand to see their national parks from the comfort, security, and convenience of their automobiles." Changing that mindset is now a major challenge of the national parks. The question remains whether parks can find a way to adequately fund their efforts. ●

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Not Your Parents' Bus Transit

ARE NEW BUS RAPID TRANSIT SYSTEMS WORTH THE EXPENSE?

THE ELECTRIC MOTOR OF LIGHT RAIL vehicles makes a distinctive high-pitched whir, letting people know their ride is approaching. From Portland to Dallas to Baltimore, cities have built light rail systems as an alternative to higher-capacity, extremely high-priced subways and commuter trains. Yet light rail is still expensive, costing municipalities billions of dollars to build, and in the few cities that have built lines, most taxpayers still prefer the convenience of driving to work.

During the mid-1990s, the U.S. Federal Transportation Administration (FTA) began searching for a more cost-effective alternative to light rail. The result was Bus Rapid Transit (BRT). Boston, Cleveland, Houston, Las Vegas, Los Angeles, Miami, and Pittsburgh all have already implemented BRT, with many other cities exploring possible systems.

BRT is not your average bus line. Increased-capacity buses run along car-free busways, exclusive bus lanes in mixed-vehicle traffic, and simplified express service routes. Large shelters or stations are constructed at every stop, fares are pre-paid, and new technologies such as traffic signal prioritization and satellite vehicle tracking keep the vehicles moving along quickly. BRT-enthusiasts tout the vehicles as faster and more comfortable than traditional city buses. Moreover, because BRT is trackless, it allows cities to change routes over time—something not possible with trains.

Though BRT differs in obvious ways from light rail, BRT's greatest success comes when it most closely resembles rail systems. This means bus lines with names or colors instead of numbers, running along a limited number of key corridors. In Los Angeles, for example, shiny BRT buses now run between the San Fernando Valley and North Holly-

wood on the 14.5-mile Metro Orange Line, a formerly abandoned railroad right-of-way that is completely separated from traffic. The 60-foot long, low-noise Orange Line vehicles have aerodynamic styling and wide doors, and carry more people than a typical city bus.

Opened in October 2005, the route includes thirteen stations, spaced at one-mile intervals.

Similarly, the Miami-Dade Transit Agency opened the South Miami Busway in 1997 on a thirteen-mile, 100-foot-wide right-of-way alongside the heavily congested U.S. Route 1 highway. As a result, ridership increased by 250 percent from the conventional bus routes that had served the area, to 15,000 riders per day. Roosevelt Bradley, the Director of Miami-Dade Transit, said, "When you see cars on U.S. 1 moving 5 mph or less and our buses zoom by at 35 mph or greater, it tells a story." Miami-Dade Transit is planning on purchasing what Roosevelt calls sleek, "futuristic-looking," high-capacity buses to attract attention and distinguish BRT even further from conventional buses.

The BRT systems in Miami and Los Angeles work wonderfully—but they also have permanent stations, separate right-of-ways, and buses that resemble light rail vehicles. And the more a BRT system resembles light rail, the closer it comes to having light rail capital costs. In Los Angeles, the new Orange Line BRT cost approximately \$22.8 million per mile. Cleveland's Euclid Corridor BRT system, opened in 2003, was even more expensive at \$29.7 million per mile. On the other hand, according to a U.S. General Accounting Office study, the capital costs of light rail projects in thirteen cities averaged \$36.4 million per mile—and so, while BRT lines do cost less, the savings are not always significant. Other bus systems, such as express buses, can cost drastically less. Los

Angeles, for instance, implemented the express Metro Rapid service on Wilshire Boulevard for a cost of \$200,000 per mile.

In Boston, residents of the city's South End neighborhood came out strongly against their 2.4-mile mixed-traffic section of the Silver Line BRT project. Despite an impressive 85 percent increase in ridership since the Silver Line opened in 2002, some South End residents disparagingly refer to the Silver Line as the "48" (the number assigned to the conventional bus previously serving the same route). In a way, the 60-foot long, high-capacity buses appear to be victims of their own success: ridership increases have led to overcrowding at peak hours and regular complaints of long waits. Silver Line critics contend that light rail, which can provide higher capacities in dense urban areas, is what Boston really needed.

Dennis Hinebaugh, the Director of the National Bus Rapid Transit Institute, disputes that light rail is the answer to BRT capacity problems. "It's nice to say you can build light rail instead of BRT to handle more riders," said Hinebaugh, "but nobody has done that and there's no light rail in this country running at full capacity." He points to Bogotá, Colombia, where a vast BRT network carries approximately 1 million people per day. While this capacity is impressive, most U.S. riders would probably not put up with the cramped conditions endured by Bogotans.

Not that BRT, with a potentially inescapable image problem, may ever reach a point where under-capacity is the norm in this country. According to Ron Utt, a Senior Transportation Fellow at the Heritage Foundation, BRT may not catch on here simply because riders don't like buses. Utt described the recent debate over the pro-

posed 23.5-mile Dulles Corridor BRT project that would have served northern Virginia. He said the project was defeated because, "Despite strong advocacy for BRT, it was so unfashionable... There is the romance of the rails that attracts people. Nobody ever talks about the romance of buses."

Some BRT advocates see the systems as an interim step that can convince the public of the benefits of public transit, spurring commitments of larger investments in light rail. A 2001 U.S. General Accounting Office report suggests that BRT is an effective way to establish a mass transit corridor, secure a transit right-of-way, and build ridership to the point where an agency can prove that light rail justifies the costs. In Houston, 30 percent of BRT riders surveyed had not used transit before—suggesting that BRT may be luring drivers to mass transit. And many transit agencies—including Miami, Pittsburgh, Los Angeles, and Boston—are at least entertaining the use of BRT as an interim step on the way to light rail. Rex Gephardt, Director of Regional Transit Planning for the Los Angeles MTA said, "When you've met your [BRT capacity] limits, your only option is light rail. And that's exactly what the feds want to do with BRT: use that concept for transit agencies to justify rail as opposed to agencies just writing a report that justifies it."

BRT can be a useful transit system, especially if a city is just starting to invest in mass

transit rather than seeking a permanent solution to its transportation problems. And transit officials believe that permanent transit systems, whether BRT or light rail, can help to influence a city's economic development. That said, it remains to be seen whether BRT will have a major role in urban development in the United States, and, even if it does, whether it will provide a sufficient long-term solution to transportation challenges. ●

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To Drive or Not To Drive

FOR SOME DISABLED AND ELDERLY, THAT'S NOT EXACTLY THE QUESTION

IMAGINE BEING DISABLED OR ELDERLY—and feeling trapped in your home. Last year, I surveyed 800 people in a California homecare program about their transportation patterns and challenges. They told story after story about being cut off from social networks, hospitals, and work, offering a devastating snapshot of immobility experienced across the country.

The survey respondents live in Contra Costa, a county across the bay from San Francisco with everything from small post-industrial cities to suburbs and agricultural areas. All the respondents receive care through California's In-Home Supportive Services (IHSS) program, the largest homecare program in the country, with counterparts in other states. Overseen by the state government, adminis-

tered by 58 counties, and funded in part by federal block grants, IHSS spends more than \$3 billion a year on 360,000 clients with disabilities or frailty because of age. Clients generally have very low incomes.

The IHSS clients I surveyed had disabilities ranging from sight and hearing loss to paralysis, dementia, and disease. Compared to the Contra Costa population overall (according to the 2000 Census figures), the clients were more likely to be older (median age of 67 years old versus 36), African-American (30 percent vs. 9 percent), female (71 percent vs. 51 percent), and living alone (40 percent vs. 24 percent).

The Americans with Disabilities Act of 1990 declared in its sweeping statement of purpose that the "Nation's proper goals

regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for such individuals." However, while new doors may be opening, many people have no way of getting to them. Despite the critical help that IHSS offers, the clients consistently say that they need more transportation assistance in order to live as others do.

Many face the most fundamental transportation constraint of all: they have no way to leave home. As a 91-year-old, unmarried, African-American client summed up her situation, "Can't afford taxi, bus, or BART [Bay Area Rapid Transit]. Can't walk. Don't have a car." One-tenth of those surveyed go out "almost never," and the vast majority leaves less than once every three days. Another cli-

ent wrote, "I don't go anywhere or do anything. I can't afford to [and] I don't get around very well."

Clients were asked where, in the past month, they could not go because they lacked transportation. About 28 percent said they could not get to a family member's or friend's home because they had no way to get there; 26 percent to a grocery store; 23 percent to a doctor or hospital; 20 percent to a drugstore; 19 percent to a place of worship; and 15 percent to a social or community center. I also asked the clients who, if anyone, went with them to social events. Seventy respondents skipped the multiple-choice question entirely, writing comments in the margin that showed I had forgotten a brutally important answer choice: "I don't go to social events," they said. "I don't go because of age and illness." "Don't remember." "No social event." "I don't go to social events because there is no one to help me get there and back." Several thought it had been at least two years. Another had not been in twenty years.

Stuck Without a Car

Unlike most commuters these days, very few—about 6 percent of—IHSS clients "always" drive themselves when they leave home, and only one-fourth even owns cars, compared with more than 90 percent of Contra Costa householders. Many clients no longer can drive themselves because of financial or physical constraints: "When I became disabled I lost my home and my car," wrote one client.

Yet cars still matter to them: more than half of clients "always" leave home by getting a ride, and about the same number considers being driven the ideal way to get around. Supporting these findings, when asked in a 2003 study what characteristics in a caregiver were "extremely important" to them, 40 percent of California respondents said "having a car." Clients prefer caregivers with cars both for rides and so that caregivers can respond quickly in times of need.

Why are rides in cars so desirable? To begin with, using public transit can be difficult. When asked what problems they have with buses and trains, a quarter of clients said they have to wait too long at stops: "Never know when the bus will arrive. Cannot read schedule and no place to sit and wait."

They also noted that vehicles are uncomfortable—the train is "too bumpy, causes extreme back pain"—and that bus and train fares cost too much, as do many other modes of transportation, such as taxis and paratransit vans. Others cannot climb stairs in stations, transfer, or "get my scooter on the bus." All these problems are compounded by long and frequent trips: "I have a lot of appts. [appointments], hospital is 40 miles away." Car rides are also faster, which is especially important during emergencies, such as for the client who gets a ride "if it's at the middle of the night (ER)."

Moreover, driving can be the only feasible way to reach some destinations in Contra Costa, as is the case in many other American cities, towns, and rural areas. Clients described on their surveys how far they lived from eight key destinations, such as hospitals, stores, places of worship, and transit stops, and I found that transportation problems are significantly more likely to prevent those who live in more remote or otherwise less accessible neighborhoods from getting to doctors' offices and hospitals, places of worship, grocery stores, and family or friends' homes. Clients in those areas also are less likely to leave home as often and more likely to say that their community has no mass transit stops, that stops are too far from their homes, and that buses and trains do not go where the clients need to go. Even clients with transit close to home sometimes have trouble walking to stops ("it feels like a mile when I have arthritis in my knees," one reported), but longer distances are especially hard for those who need places to rest, more time to cross streets, and smooth sidewalks. Although other studies have found that non-disabled drivers can experience increased mobility in lower density areas, such as suburbs, many of my findings suggest that, for those with physical impairments who do not drive, the reverse is true.

Unfortunately, clients cannot rely on being driven by others. Almost half of all clients live alone, which makes it more difficult to get an impromptu lift to go buy food, for example. A recent Contra Costa focus group concluded that working family members, especially in the county's suburban areas, do not have time to take seniors where they want to go. Seniors and the disabled do not want to

burden others, so they pick and choose what favors they request. Researchers, including those mining the 2001 Nationwide Household Transportation Survey, have found that seniors and the disabled abandon social, religious, and recreational trips first when they have to rely on rides from others. Even getting a ride can cost money: one client described having to "mak[e] sure I have gas money for someone to take me to my doctor appointments, store, etc., because I only get SSI [Supplemental Security Income] to live on."

No magic solution exists for these problems. Yet the findings highlight the need for continued action. In 2003, California's Gov. Schwarzenegger unsuccessfully proposed cutting homecare services for 75,000 clients and lowering homecare workers' pay to the minimum wage and has made similar proposals since then. Instead of moving backward, we should be planning ahead.

Allowing Homecare Workers to Provide Transportation

California, as well as other states, should increase the transportation funding available to homecare workers and should amend the IHSS rules that overly restrict the transportation help they can offer. Facilitating the direct provision of transportation to clients promises to be both efficient and effective: caregivers are already in the clients' homes, they know where clients need to go, and many are personally invested: 55 percent of those I surveyed are related to their clients. Moreover, transportation expenses and commute time contribute to high IHSS job turnover. "The pay [\$9.50 an hour] is not so good to be spending in transportation," noted one homecare worker. Another felt that "the client situation is stacked against me when it takes an hour plus to simply get to my client's home."

IHSS homecare workers currently are paid to go with clients to medical facilities and on a limited number of errands, as long as the help fits into the narrow category of providing accompaniment, or personal assistance, such as aid getting in and out of cars. But caregivers are not supposed to give transportation help that falls instead in the "chauffeur" category, as a Contra Costa pamphlet calls it. Moreover, they are not sup-

posed to use their own cars to take clients places, which puts the vast majority of clients in a bind because they do not own cars. Caregivers also are not paid for the time they spend waiting for clients at appointments, which means that they sometimes have to leave their clients at destinations or wait without pay until they're done. One worker complained about having to spend her limited personal money on "public transportation to assist/shadow my client to outings (school, family, grocery store, hospital, etc.)." Nevertheless, many IHSS homecare workers feel compelled to put aside their job descriptions and help in whatever way they can.

Therefore, homecare workers should be paid for the time they spend waiting for clients at necessary destinations; able to use their own cars to transport clients; reimbursed for gas and mileage; and, if necessary, given transit passes or loans to purchase cars. In Contra Costa, progress on these issues may continue to come from the homecare workers' union, the Service Employees International Union (SEIU).

Letting the Disabled and Senior Citizens Get Around Themselves

Many clients also would love to get around independently if they could, but to do so they need better van services, transit passes, loans for cars, and money for vehicle maintenance. They also need public transportation designed around their physical limitations. Local and state agencies should continue putting such improvements among their top priorities.

Transportation is only part of the solution. City planners also can continue exploring incentives for developers to build affordable housing, including housing targeted to seniors and the disabled, near public transit and other key destinations. The reigning wisdom is that everyone wants the suburban dream of backyard space and fewer neighbors—and many people do. But when I asked IHSS clients, "Would you want to live in a neighborhood with more people if it meant being closer to shopping, medical, and social services?," more than half said yes, including many who already live in the higher density parts of Contra Costa. Their physical and income constraints help explain their

answers: "Doctors are too far to walk to. Grocery outlet closed down last year." "It was not as bad until they stopped bus service except for weekday mornings and evenings." "Hoping to relocate to a more mobile independent access [area]—shopping without any assistance and feel safe."

Similarly crucial are national policies to fund mass transit for seniors and the disabled and to support caregivers programs. Such efforts would follow in the footsteps of large-scale legislative action such as the Americans with Disabilities Act of 1990 (ADA), the Older Americans Act (OAA) reauthorization in 1992, the Family and Medical Leave Act of 1993 (FMLA), and the New Freedom Program funded by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005.

While many of these measures will be expensive in the short-term, they also promise to save money. For example, by facilitating timely medical care, the measures could help prevent or treat clients' health problems. They could decrease workplace disruptions for family members and the demand for expensive emergency transportation services in response to clients' transportation crises. They also could increase clients' contributions to their communities, the importance of which California recently recognized by allowing clients to receive IHSS assistance at their jobs.

The non-monetary benefits to the frail elderly and the physically disabled are clear, but many benefits exist as well for those who are fully mobile. Many would appreciate using more comfortable public transportation, having amenities such as smoother sidewalks, and being able to choose affordable housing close to necessary services. For some, the measures will decrease worries about friends and family members who otherwise would be more isolated. Even more selfishly, each of us could become disabled at any instant, and we all lose mobility over time—if we wait to address these problems, we may be the ones who wake up one day with no way to get to work. ●

Full text of this paper is available on the Social Science Research Network (SSRN) at <<http://ssrn.com/abstract=870866>>

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Along the Tracks

A TALE OF TRANSIT AND DEVELOPMENT

TRAINS HAVE ALWAYS BEEN A KEY component of the development of America's West. During the frontier days, trains were the steel-grinding, coal-burning, whistle-blowing behemoths that hauled freight and passengers across the open country. Much as these early trains shaped Western growth industries like mining and ranching, a new kind of train—light rail—has begun to shape modern urban development. More and more former frontier towns—Denver, Portland, Salt Lake City—have found that with the influx of millions of people come major transportation and land use issues similar to those first tackled by their eastern counterparts generations ago. While East Coast cities tended to use subways and commuter rail to address these problems, Western cities have increasingly turned to light rail, usually built at street level along fixed routes, to move urban dwellers in, out, and around their booming metropolises. Across the West, the notion of automobile transportation and freeway construction providing the sole answer to transportation and land use problems has mostly been abandoned—even in cities like Houston, Phoenix, and Los Angeles where new rail construction would have been unthinkable a generation ago.

Light rail has the potential to transform the transportation habits of hundreds of thousands of users. Additionally, by decreasing congestion, conserving fuel, and reducing emissions, transit creates a public good that benefits even those who choose not to use it. Already, light rail has had a significant impact in the West. In some places, like Portland, it has affected new development, with Metropolitan Area Express (MAX) light rail lines expanding into previously undeveloped areas and shaping those areas' characteristics. In other areas, such as Los Angeles,

where the Gold Line connects downtown to Pasadena, light rail has focused on convincing commuters who utilize highway corridors—in this case the 110 freeway—to alter their travel patterns. And finally, some light rail lines, like the ones that compose Salt Lake City's TRAX system, have spurred reuses of existing developed areas—in the form of increased density and changes in land uses near stations.

Perhaps the most ambitious Western light rail plan is in Denver, where voters in 2004 approved a \$4.7 billion system expansion that will include 119 new miles of light rail and 18 miles of bus rapid transit. These plans present an historic opportunity to reshape Denver's development patterns. Denver's expansion is being compared by many to the commitment by Washington, D.C. to develop the Metrorail system starting in the 1970s. Washington's experience demonstrates just how much a transit system can transform a metropolitan area's land use.

A Growing Need for Transit

Already considered one of the most congested cities in the United States, according to the Texas Transportation Institute, the Denver metropolitan region is expected to gain almost one million new residents and approximately 600,000 new jobs by 2025. Along with this predicted population growth, the weekday vehicle miles of travel are expected to increase by 64 percent, from 58 million miles in 2001 to 95 million miles by 2025. This congestion poses a threat to the region's vaunted quality of life, which spurred the region's growth.

The Denver region has attempted to use light rail as a tool to cope with its projected rapid population expansion, while reducing the area's dependence on the automobile.

Light rail was first implemented in 1994 and for years stagnated at two rail lines. Just three years after the system first opened, a proposal called "Guide the Ride" would have funded a major expansion. However, this proposal failed to obtain the necessary public support, receiving 42 percent of the vote in a referendum of Denver metro-area voters. According to Theresa Donahue of Transit Alliance and Elena Nunez of Environment Colorado, "after Guide the Ride went down, the [pro-transit] coalition decided to change strategies, instead of just going for the 'home run' of a regional transit system, they decided to 'just hit singles' and pursue a few smaller transit victories." Towards this end, the coalition promoted the election of pro-transit members to the Regional Transportation District (RTD) board and launched a region-wide transit education campaign.

From these small building blocks, the pro-transit coalition grew. In 2004, the coalition scored a major victory with voter approval of a \$4.7 billion expansion, dubbed Denver FasTracks. RTD Board Chairman Bill Elfenbein attributes FasTracks succeeding where Guide the Ride had failed to the plan being "greatly enhanced and much better defined," along with having "much more community response." If the 12-year project is completed as planned, 119 miles of new light rail and commuter rail and 18 miles of new bus rapid transit will be constructed, along with 31 new Park and Ride lots and the conversion of Denver Union Station (DUS) into a truly multimodal facility. After the planned upgrades to DUS are completed, the station will provide access to regional and local bus service, Amtrak, Greyhound, the new Downtown Circulator, and almost all of the FasTracks transit corridors.

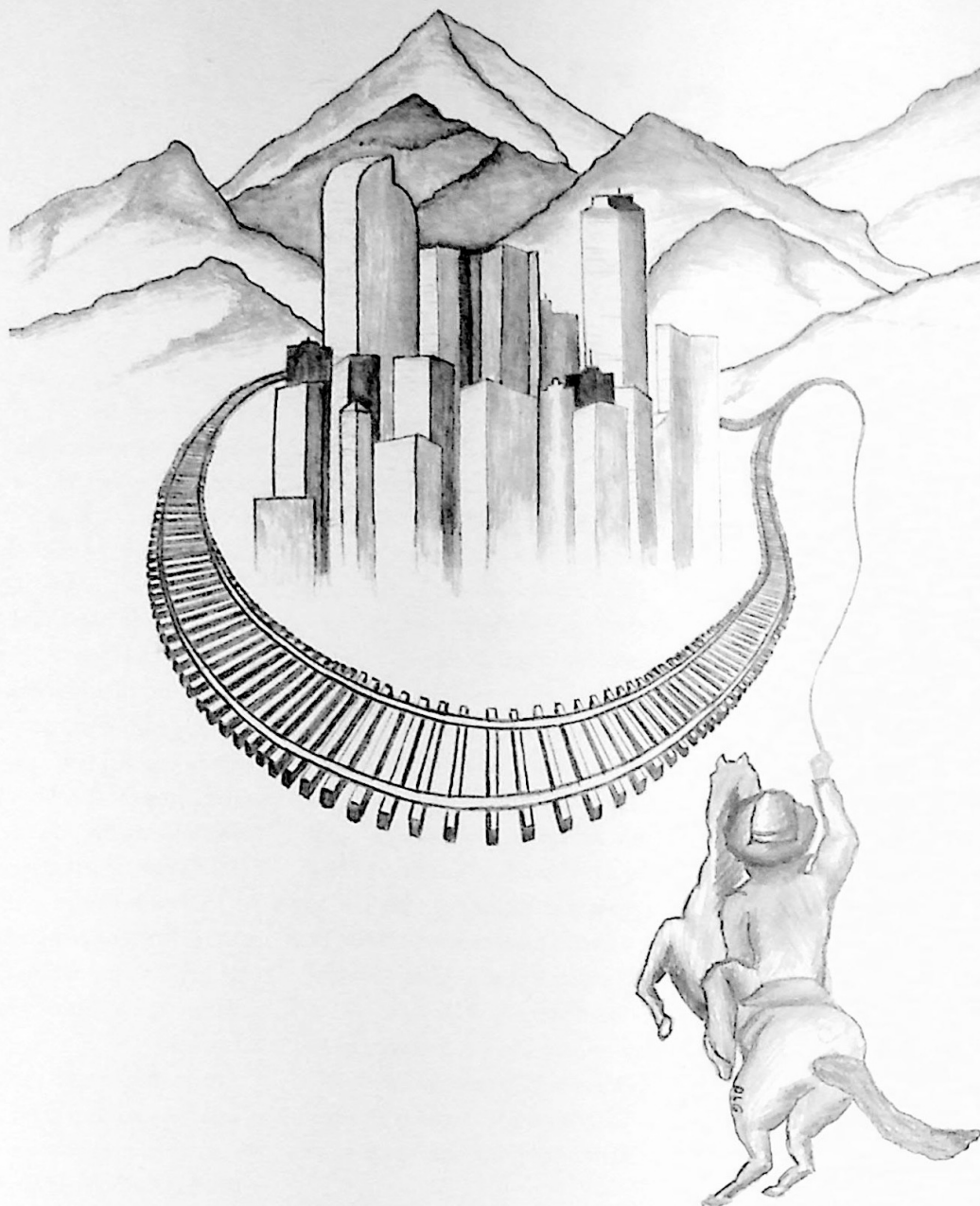


Illustration by Dennis Goodknight

A Comparative Approach

The Washington, D.C. Metrorail system opened its doors in March 1976, and has since grown to become the second largest rail transit system in the United States, currently consisting of 86 stations and 106 miles of track. The original purpose behind creating a rail transit system in the nation's capital was to shuttle federal government employees to their jobs in the downtown core; this group of riders today makes up nearly half of peak-hour ridership. Over the years, the Metro-

rail's importance to the greater-Washington, D.C. region has broadened, with total trips in fiscal year 2004 reaching 190 million, and private housing and employment patterns increasingly being shaped by the system.

In many metropolitan areas, transportation planners find themselves in a position of reacting to sprawl and its related congestion problems, producing public transportation systems that fail to capitalize on their potential to shape future development patterns and instead try to get people living amongst

sprawl to use transit. Some Metrorail stations—Shady Grove, at the northwest end of the Red Line in Maryland, for example—have followed this example, focusing on herding commuters from surrounding areas to massive park-and-ride lots. But along most of the Metrorail, Washington-area planners have taken a different route, encouraging stations to serve as catalysts for development or redevelopment of surrounding neighborhoods.

Perhaps the best example is the growth of the Rosslyn-Ballston corridor in Arlington,

Virginia. Prior to the arrival of the Metrorail Orange Line in 1979, the two square mile area that makes up the Rosslyn-Ballston corridor was a low-density commercial center with decreasing retail sales and a declining population. In fact, the corridor lost approximately 36 percent of its population during the 1970s. The arrival of the Orange Line and a concerted effort by the county government to spur development has changed the composition of the area dramatically. This bustling corridor now contains roughly 30 million square feet of commercial development and contributes an average of over 80,000 weekday trips to the Metrorail system. In addition, Arlington, in large part due to the Rosslyn-Ballston corridor, boasts a population density (about 7,700 people per square mile) that exceeds the densities of cities such as Seattle, Minneapolis, and Pittsburgh.

The recent opening of the New York Avenue Station on the Metrorail's Red Line illustrates Washington's commitment to using transportation projects to stimulate development. The new stop was the first infill station, located between two existing stations and not at the end of a line, added as part of a system expansion. The station, located north of the U.S. Capitol, is in an area home to industrial sites, train yards, and low-density development in a crime-ridden neighborhood. The result of a public/private partnership aimed at attracting new development in an otherwise blighted part of Washington, the plan appears to be working; the Bureau of Alcohol, Tobacco, and Firearms has begun construction of its new headquarters adjacent to the station, and XM Satellite Radio has decided to expand its current headquarters nearby. However, the decision to build the station was not without risk: it has not yet attracted the forecasted volume of passengers, but it has shown an upward trend.

Washington's successes and difficulties can provide lessons for Denver's planners. According to Bill Elfenbein, chair of the Regional Transportation District, "we do know already that the growth patterns will follow the path of the FasTracks project. Most of the suburban cities are planning their growth along the FasTracks corridors, as is the city of Denver." Indeed, the Denver region may follow the example of Arlington County, countering the negative aspects of

rapid population and employment growth, by focusing on transit-oriented development (TOD) at many of the planned rail stations. These projects can promote the increased use of transit by residents and help to reduce the number of overall vehicle miles traveled. "RTD is doing everything to help with the coordination of the TOD projects that are being planned in each corridor," Elfenbein adds. The agency currently has a staff position dedicated to guiding the coordination of TOD projects and ensuring that the city works with all neighborhoods and corridors, and not just with those that already contain higher density development. "We want to help guide good development of TODs which means working directly with each city and developer as needed."

As Washington is doing with New York Avenue, Denver also has an opportunity to use transit to revitalize flagging neighborhoods. One portion of the FasTracks project calls for extending transit southeast towards the Lone Tree area in an attempt to spark development in this historically low-income and low-density neighborhood. In addition to providing residents in the region who do not have access to a vehicle with affordable transportation, this effort, known as the Transportation Expansion Project (T-REX) could potentially bring new life to an area that has been traditionally depressed and lacks development that is dense, diverse, and well-designed. Expected to be open in December 2006, this corridor southeast of Denver is under construction by the RTD and the Colorado Department of Transportation, and as of 2005, construction continues to be done on budget and on time. The line in its whole will be 19.1 miles and will include thirteen new stations. Lone Tree is currently just one of many low-income neighborhoods in metro Denver that suffers from a problem identified by representatives of Transit Alliance and Environment Colorado: "a lack of good transit options between the parts of the region with the most affordable housing and the parts of the region with the strongest job growth. FasTracks helps to address that disconnect by increasing bus and rail service between housing and employment centers."

"Pioneering" Transit

While not a perfect comparison—the two

cities are different in many ways—Washington's transit experience can teach Denver's planners how to foster development through transit. Traditional transit development has focused primarily on creating systems where a significant number of riders already exist. But the region's planners, who have already eclipsed traditional hands-off Western approaches to growth in managing complex projects such as the Coors Field baseball stadium and surrounding development, should carefully consider their ability to shape development patterns in a prospective manner. This "pioneer" model is inherently risky; it requires a substantial initial investment in hopes of a future payoff that may or may not be realized. In the end, however, understanding and effectively harnessing the complex and varied relationship between transit and development might just help win the showdown between sprawl and well-reasoned growth. In any case, it will be a mean duel. ●

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Transporting Climate Change

THE ENVIRONMENTAL RIGHTS IMPLICATIONS OF LOCAL CHOICES

GLOBAL CLIMATE CHANGE HAS BECOME a very local problem for the Inuit. In the Arctic, average temperatures are increasing around twice the average global rate. The results have included increasing precipitation, thawing permafrost, melting glaciers, and rising river flows and sea level. These environmental changes threaten Inuit hunting culture, food security, and health. For example, the wildlife herds and marine and freshwater fisheries, from which they obtain food, have significantly diminished in size.

Climate change has a devastating impact on vulnerable populations around the world—not just on those who live in the Arctic. Island states face rising sea levels, changes in rainfall patterns and prevailing winds, and variability in wave action. Alpine communities, such as those in and near Nepal's Sagarmatha [Everest] National Park are

endangered as melting glaciers create alpine lakes that overflow their boundaries. The Intergovernmental Panel on Climate Change has concluded that although some areas might experience beneficial impacts from climate change, most parts of the world will likely experience detrimental effects.

In December 2005, the Inuit Circumpolar Conference filed a petition with the Inter-American Commission on Human Rights claiming that the U.S. approach to climate change violates their human rights. The petition argues that the United States contributes a substantial portion of the world's greenhouse gases, but is not taking adequate measures to limit its emissions.

The Inuit have grounds for concern over U.S. emissions. In his 2001 speech discussing the U.S. withdrawal from the Kyoto Protocol, President Bush acknowledged that the

United States produces almost 20% of the world's manmade greenhouse gases. Moreover, the U.S. contribution to climate change is predicted to grow. The U.S. Climate Action Report – 2002, submitted by the United States as part of its obligations under the United Nations Framework Convention on Climate Change, projects that between 2000 and 2020, the country's net greenhouse gas emissions will increase by 42.7%.

The Inuit petition is just one of a wide range of activities by communities and entities around the world reacting to the failure of national and global entities to address climate change effectively. While these measures—whether in the Arctic Circle, the Pacific Northwest, or Australia—may seem too small-scale to address such a transnational problem, combating climate change effectively requires an engagement of its local dimensions.

Suing Over Climate Change

Litigation over climate change has used many different strategies in local, national, and international tribunals. At the most local level, the Victorian Civil and Administrative Tribunal in Australia required a panel reviewing environmental effects of the development of an additional coal field for a power station to consider greenhouse gas emissions from the continued operation of the plant. Similarly, a Minnesota state court was asked to consider whether carbon dioxide should be a substance included in an environmental cost valuation scheme.

A wide range of actions have been brought in U.S. federal courts. Advocates have attempted to force the Environmental Protection Agency to regulate motor vehicles' greenhouse gas emissions. Another suit challenged the funding of overseas fossil fuel



projects without an assessment of their contribution to global warming or other environmental impacts. Eight states and New York City brought an action against six major power companies arguing that their massive carbon dioxide emissions, which contribute to global warming, constitute a public nuisance. Most recently, an action filed under the Endangered Species Act focuses on the effect of global warming on polar bears.

Similar actions have been brought in other national courts. Germanwatch and Bund filed a lawsuit against Hermes, the German export credit agency, to require it to disclose the greenhouse gas emissions produced by the projects it supports. Citizens in Argentina have used a combination of domestic law and the U.N. Framework Convention on Climate Change to force the government to provide evidence that its failure to respond to climate change worsened the loss of life and property damage of the 2003 Santa Fe floods. Nigerian citizens have obtained an initial favorable decision in a case claiming that the impacts of gas flaring by oil companies violate their constitutional rights. The case focuses on both the immediate localized effects and the vulnerability of these communities to the resultant global climate change.

In addition to the Inuit petition, nongovernmental organizations have brought petitions and a report to UNESCO to try to address climate change. As a result, UNESCO is examining climate change's impacts on Australia's Great Barrier Reef, the Belize Barrier Reef, Peru's Huarascán National Park, and Nepal's Sagarmatha National Park. The petitions argue that these sites—all on the World Heritage List—should be placed on the List of World Heritage in Danger due to the effects of global climate change.

Municipal Approaches to Reducing Emissions from Transportation

These lawsuits and petitions, taking place in many different fora, highlight the multi-layered nature of the climate change problem. Each action has local, national, and transnational dimensions. At a policy level as well, the smallest units of government—localities—are increasingly serving on the front lines of the battle to stem the tide of climate change.

In the United States, municipalities play a lead role in developing policies to reduce the national contribution of greenhouse gases. Former Mayor Paul Schell of Seattle summarized the importance of local participation—even before the U.S. withdrawal from Kyoto—after the Seattle City Council took measures to meet Kyoto standards: “Every city and every individual can take steps to reduce global warming. Cities are where most emissions occur—and where solutions must begin. We can't afford to wait for the federal government to do this.”

Local leadership around the country has taken action in the face of this need. In 2003, forty U.S. cities and counties were participating in the global Cities for Climate Protection (CCP) campaign of the International Council for Local Environmental Initiatives (ICLEI). Two years later, in 2005, there were 152 municipalities involved. These U.S. cities form part of the five hundred participating local governments from around the world, which together govern territory producing 8% of global greenhouse gas emissions.

As part of this effort, localities have begun reexamining their approaches to transportation. These decisions greatly influence the quantity of emissions: An inventory by the U.S. Environmental Protection Agency noted that transportation activities provided 32% of the 2003 carbon dioxide emissions from fossil fuels, and that 60% of those emissions came from gasoline consumption by people using personal vehicles. The 2003 transportation-related carbon dioxide emissions from fossil fuel combustion represented a 22% increase over 1990 levels. By 2003, 37 states had initiated or completed a greenhouse gas inventory to help them understand their pattern of emissions, and 44 states had initiated or completed greenhouse gas plans for achieving reductions. The plans of both states and cities vary, however, in their comprehensiveness and approaches to transportation.

Portland, for example, has been at the leading edge of municipal efforts to reduce greenhouse gas emissions. In 1993, Portland became the first U.S. city to join an ICLEI-coordinated project to reduce urban carbon dioxide emissions, and its 2001 Local Action Plan on Global Warming set the goal of carbon dioxide emissions in 2010 at 10% below

1990 levels. The transportation-focused segment of the plan aimed to reduce vehicle emissions through decreasing vehicle miles traveled to 10% below 1995 levels and improving fuel economy from 18.5 to 26.5 mpg in Multnomah County. In so doing, it relies on the city's well-developed public transportation system, and focuses on making the city even more bike and pedestrian friendly.

In contrast, the city of Los Angeles's Climate Action Plan, despite winning an award from the U.S. Environmental Protection Agency, addresses transportation emissions without addressing the deficiencies of the city's public transportation options. The plan includes an extensive system of bicycle patrols, alternative-fuel city fleet vehicles, and the use of green power at Los Angeles area airports. Under the plan, emissions in 2010 from municipal operations would decrease 30% from 1990 levels. With respect to private vehicle emissions, however, the plan focuses primarily on improving traffic surveillance and control and encouraging bus ridership. It does not deal with the lack of an extensive metro, light rail, or bike lane system in Los Angeles.

Evaluating Impacts of Municipal Transportation Initiatives

If the municipalities implementing climate action plans achieve their goals, the transportation emissions reductions will be substantial. Portland's plan predicts that 1.35 of a total 3.10 million metric tons reduction in emissions will result from its approaches to transportation, telecommunications, and access. Due to its larger size, each step that Los Angeles takes has a massive potential impact; its plan forecasts a reduction by 1.01 million metric tons just from its implementation of the automated traffic surveillance and control system at 4,497 intersections.

Unfortunately, these goals are often difficult to achieve. Even aggressive climate change reduction plans, such as the much-touted one in Portland, often result in more limited reductions than forecasted. There, although per capita emissions decreased—from 16.9 to 15.6 metric tons between 1990 and 2001—population growth and other factors resulted in an overall emissions increase

of 6%. The transportation efforts were impacted particularly severely by this growth. Despite a 65% increase in public transportation use since 1990 and a doubling of bicycle commuters since 1993, both total and per capita vehicle miles traveled continue to grow.

Federal policy decisions also impact local efforts. Portland's transportation plan relies upon increased use of fuel efficient vehicles, but federal fuel efficiency requirements have not increased since 1985. Without a national-level effort to change the types of vehicles on the road, Portland will be fundamentally hampered in its plan to reduce transportation emissions.

Despite these obstacles, municipalities are producing fewer emissions than they would without these plans. Cities participating in the CCP campaign are more likely to take global warming effects into account as they make decisions. For example, as San Francisco explored expanding its passenger ferry service, CALSTART did a detailed study on the extent to which such an expansion could result in fewer emissions in the San Francisco Bay Area. The study found significant sub-regional differences in the emissions effect, even with ferries using low emissions technology, based on the alternative choices passengers would make. The ferries could help air quality on the shorter, slower routes studied. On a faster, longer route, however, few passengers reported that they would drive if the ferry was unavailable and thus emissions impacts would be much lower. Understanding nuances such as these are critical to structuring local transportation options that maximize emissions reductions.

Concluding Reflections:

From Local to Global to Local

The details of cities' efforts to reduce transportation-related emissions only reinforce the complexities of addressing global climate change meaningfully. Given the proportional emissions contribution from municipal transportation, local action is critical. But even the "model" efforts cannot occur in a vacuum. They are impacted by larger scale demographics and policy decisions at other levels of government.

Suits pending in U.S. courts and the petition by the Inuit help to create pressure on

the United States federal government that is crucial to the success of local emissions reductions plans. Even if these cases do not force legal changes, the publicity that they generate helps to raise the level of public awareness and put pressure on the national government to take constructive steps.

For vulnerable populations, however, even the most aggressive efforts will likely be too little too late. None of the approaches discussed go far enough to actually reverse the trend of human impact on climate change; they simply slow the pace slightly. Given the rapidity of the physical and social transformation in the Arctic and other severely impacted locales, the benefits of greener municipal transportation policy will most likely be felt by those not yet at the devastation's front line. ●

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The McCarran Airport and the Las Vegas Strip. Photo courtesy John D. Kasarda.

The Rise of the Aerotropolis

AIRPORTS ARE NO LONGER SIMPLY places where airplanes land and passengers and cargo transit. Amsterdam's Schiphol Airport is a case in point. About 58,000 people are daily employed on the airport grounds. Its passenger terminal—containing an expansive mix of shopping, dining, and entertainment arcades—doubles as a suburban mall that is accessible both to air travelers and the general public. Amsterdam residents regularly shop and relax in the airport's public section, especially on Sundays and at night when most city stores are closed.

Across from Schiphol's passenger terminal, one finds the World Trade Center, which contains conference facilities as well as the regional headquarters of such firms as Thomson-CFS and Unilever. Two five-star

hotels adjoin this complex. Within a ten-minute walk is another complex of class-A office buildings that house financial and consulting firms which serve the aviation industry. Clustered along the A4 and A9 motorways linking the airport to downtown Amsterdam are large business parks for companies in industries that make intensive use of the airport, such as telecommunications, logistics, and distribution. With the airport and its immediate area serving as a multimodal transportation and commercial nexus, a new economic geography is taking shape: property near the airport commands premium office rental prices for the Amsterdam area, even above those in Amsterdam's central business district.

Schiphol is but one example of how major airports are beginning to drive busi-

ness siting and urban development in the 21st century, much as highways did in the 20th, railroads in the 19th, and seaports in the 18th. As aviation-oriented businesses cluster at and near major airports, a new urban entity is emerging: the Aerotropolis. Similar in shape to the traditional metropolis of a central city and its commuter-heavy suburbs, the Aerotropolis consists of an airport city core and an outlying area of businesses stretching fifteen miles along transportation corridors.

Survival of the Fastest

Aerotropoli are emerging because of the advantages airports provide to business in the new speed-driven, globally networked economy. Today's most competitive manufactur-

ers, for example, use advanced information technology and high-speed transportation to provide fast and flexible responses to customers' unique needs. Such firms build agile production systems that quickly connect them to their suppliers and customers, allowing them to source parts and ship assembled products as needed. A manufacturer's ability to meet customer demand depends on the existence of a comprehensive ground-to-air shipping network of air cargo carriers, trucking companies, freight forwarders, and logistics providers. This network has been strengthened as demand for time-sensitive manufacturing and distribution grows. Made possible primarily by proximity to an airport, a ground-to-air shipping network allows manufacturers to minimize their inventories, shorten production-cycle times, and quickly access novel inputs for custom products that create additional value.

Like the manufacturing industry, the service sector has increasingly found airports to be an attractive location. Airports have become magnets for regional corporate headquarters, trade representative offices, professional associations, and information-intensive firms that require executives and staff to undertake frequent long-distance travel. Business travelers benefit considerably from access to hub airports, which offer greater

choice of flights and destinations and more flexibility in rescheduling.

Firms specializing in information and communications technology and other high-tech industries consider air accessibility especially crucial. High-tech professionals travel by air at least 60 percent more frequently than other professionals, giving rise to the term "nerd birds" for commercial aircraft connecting "techie" capitals such as Austin, Boston, Raleigh-Durham, and San Jose. Many tech firms are locating along major airport corridors, such as those along the Dulles Airport access corridor in Northern Virginia and the expressways leading to Chicago's O'Hare International Airport. In this sense, knowledge networks and air travel networks increasingly reinforce each other.

Lastly, as illustrated by the Schiphol Airport example, commercial services of all types have begun relocating to airport areas in order to attract a dual customer base of travelers and locals. Airports now offer on-site or nearby hotels, restaurants, shopping, fitness centers, and entertainment facilities. As these offerings grow, areas within five miles of major airports are adding jobs considerably faster than suburbs located at similar distances from a metropolis' center, but not near an airport. Job growth, in turn, stimulates residential projects—further fueling Aerotropolis development. Airport areas are even develop-

ing their own "brand" image—"the DFW Area" and "the O'Hare Area," for instance.

As a result of these changes, the airport itself is undergoing a metamorphosis, taking on many of the commercial functions of a metropolitan Central Business District (CBD). With the growing number of boutiques, restaurants, meeting facilities, and entertainment and cultural attractions, passenger terminals begin to resemble parts of downtown. Frankfurt Airport, for instance, has a hospital; Denver International has art galleries; and Las Vegas' McCarran has a museum. Many airports also have the density of highway and transit connections that are usually associated only with CBDs.

The Future Aerotropolis

To serve the economic demands of connectivity, speed, and agility, the Aerotropolis will require localized infrastructure planning of unprecedented scale. To date, Aerotropolis have evolved largely spontaneously, with existing nearby development often creating arterial bottlenecks. In the future, strategic infrastructure planning could reduce this congestion. Dedicated expressway links (aeroplanes) and high-speed rail (aerotrails) could efficiently connect airports to business and residential clusters near and far. Special truck-only lanes could be added to airport expressways, as could improved highway interchanges to reduce congestion.



Even the physical infrastructure of global computer networks may begin to take shape around the Aerotropolis. Advanced information processing technologies and multimedia telecommunications systems served by high-density fiber-optic rings and satellite uplinks and downlinks are most likely to develop near airports. Such technology could instantly connect companies to their global suppliers, distributors, customers, and branch offices and partners. Companies that require the fastest possible networking will thus have an additional reason to locate in the Aerotropolis. Such computer infrastructure is appearing not only around major passenger airports like Dallas-Ft. Worth and Las Vegas but also around air express and cargo hubs such as Memphis (which serves global shipper FedEx) and Louisville (which serves United Parcel Service).

As transportation and technological infrastructure develops near airports, businesses will have even more reason to move to an Aerotropolis. The principal determinant of value, lease rates, and the type of commercial use on a given property will be the cost of moving people and products to and from the airport and, via the airport, to distant markets. This cost will be measured primarily in time to the airport—a function of the site's place on local transportation arteries, and not necessarily of spatial distance. For example, a

site 20 miles away, but one stop on a high-speed train line, from the airport will be worth more than a site 5 miles away with poor road and rail connections. To put it another way, the three "A's" (accessibility, accessibility, accessibility) will become the critical component of the three "L's" (location, location, location).

At first glance, one might misconstrue Aerotropolis land uses as simply additional sprawl along main airport transportation corridors. In reality, the Aerotropolis grows according to a rational system based on time-cost access gradients radiating outward from the airport. Constructing ground transit and locating commercial facilities consistent with the form and function of the Aerotropolis will contribute substantially to the emerging needs of business and to the future competitiveness of urban areas. ●

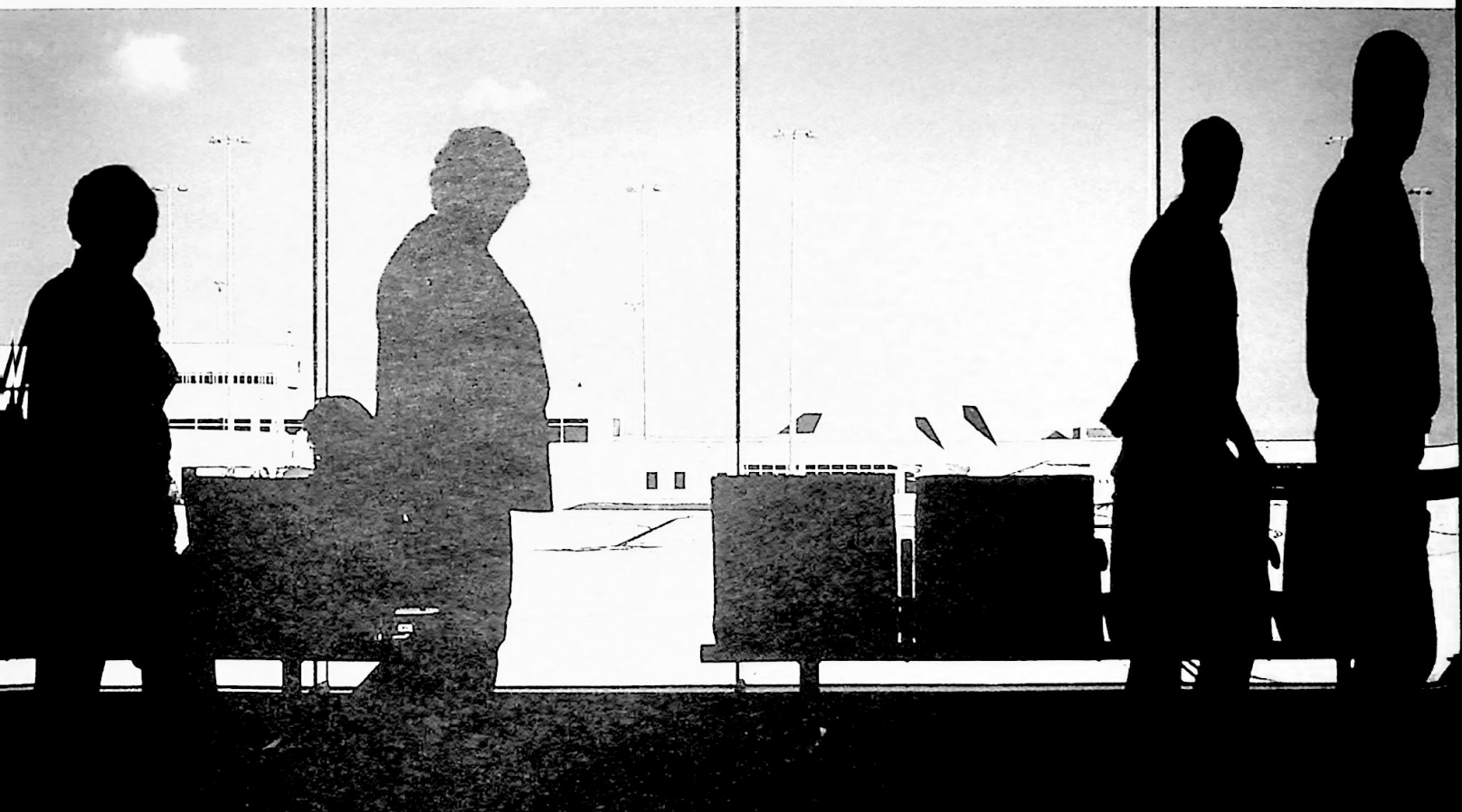
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Can Regionalism Save Philly Transit?

PHILADELPHIA'S METROPOLITAN region is defined by the rail infrastructure that links its downtown to suburban communities in every direction. Its network of commuter rails, subways, elevated trains, trolleys, and buses—all operated by the Southeastern Pennsylvania Transit Authority (SEPTA)—is the fifth-largest mass transit system in the United States, serving a 2,200-square-mile service area that extends into New Jersey and Delaware. Some 325,000 people in the metropolitan region commute on SEPTA, including 70 percent of office workers in Center City, the core area of downtown Philadelphia. In addition, 15,000 college students in the region take SEPTA to their educational institutions, and about 19 percent of summer visitors in 2004 said they used SEPTA to get around.

In recent years, the region has struggled to fund SEPTA. Until a state bailout last spring, the agency was forced to consider massive service cuts and fare increases due to a \$62 million budget deficit for fiscal year 2004 and projected deficits of as large as \$180 million in the next few years. SEPTA's financial woes are a symptom of economic stagnation throughout the region, owing in large part to urban-rural and inter-municipal wrangling. A growing number of civic- and private-sector organizations in greater Philadelphia recognize that saving SEPTA means looking farther than state and federal hand-outs. Building on the momentum of a new regional commitment to cooperate on economic development issues, these groups hope SEPTA can help transform the area's struggling economy and shape its future.

Seeing Beyond the Municipality
Parochial interests have always kept the

Philadelphia metropolitan area from developing a strong, unified identity. This is hardly surprising, since the metropolitan area includes scores of municipalities in eleven counties across three states. Even within Philadelphia itself, many lifelong residents have never been to neighborhoods in other parts of the city. The region's communities have focused on competing for each other's businesses, jobs, and residents, resulting in no net growth for the region, losses in tax revenue for the so-called winning localities (who use tax subsidies to lure businesses), and a continued spiral of decline for the losing ones. As Laurie Actman, director of regional growth strategies for the Greater Philadelphia Chamber of Commerce (GPCC) notes, "Political and physical boundaries loom large here."

The editorial board of the Philadelphia Business Journal sees this adversarialism as reactionary: "A problem with the Philadelphia area is that too often the voices of innovation and cooperation—the sounds of the new—cannot be heard over the noises made by the doubters and traditionalists." Actman agrees, pointing to the region's conservative Quaker origins as a possible source of its aversion to risk and change. While acknowledging that Philadelphia's reputation for stability can at times be an asset, she laments, "The region has too many people who are sedentary, who are content with the status quo."

The ongoing fractiousness has not only hurt towns individually, but undermines any kind of cross-border endeavors to reduce the region's tax burden or to improve government services, transportation infrastructure, and environmental quality. This lack of coordination weakens the region's ability to com-

pete at a national level for new businesses, resulting in lagging population and job growth despite the region's impressive geographic, educational, and cultural assets. A survey published in the April 2004 issue of *Site Selection* magazine ranked Philadelphia as the most expensive city of 315 surveyed to start a business in the United States. A poll of seventeen site selection consultants in summer 2004 found that nearly 60 percent of consultants rarely consider the Philadelphia region as a place to locate or expand a company. And few college graduates not originally from the region—just 29 percent—stay there after graduation, according to an October 2003 study by the Pennsylvania Economy League (PEL). By contrast, 42 percent of graduates from schools in the Boston area—a region similarly endowed with higher educational facilities—choose to stay there.

Planning for a Regional Economy

After decades of equivocation, greater Philadelphia recently embraced a regional approach for its struggling economy. For many years, Peco Energy Company, an investor-owned electric utility, was the lone advocate. Recently, however, the civic sector has done an admirable job of drawing attention to important regional issues. Three of the more effective non-profit groups—the Pennsylvania Economy League, a tax reform advocate; 10,000 Friends of Pennsylvania, a smart growth group; and the Reinvestment Fund, an urban-market financial intermediary—banded together in 2000 to create the Metropolitan Philadelphia Policy Center (MPPC). The MPPC's research and advocacy work culminated in the 2002 production of *Flight or Fight: Metropolitan Philadelphia and Its Future*. The widely distributed book used

effective illustrations and charts to send a clear message: the bleak economy, poor schools, and high crime in the city have driven residents and businesses to sprawling newer suburbs, and not even those suburbs can compete for new businesses without the attraction of a thriving central city.

The efforts of the MPPC and organizations like it across the nation have helped the private sector to recognize the importance of regional promotion of sustainable growth and economic opportunity. In a study for Boston-based consulting firm FutureWorks and the Alliance for Regional Stewardship, Steve Michon and Malo Hutson reviewed the activities and operations of what they call "regional business civic organizations"—organizations composed of CEOs and other business leaders whose aim is to improve a region's economic and social standing—in twenty-nine of the largest metropolitan regions in North America. They found that an older business climate, in which chambers of commerce and similar organizations were only concerned with reducing taxes and regulation and with conducting business in their own backyard, has given way in the face of national and global competition. Business leaders are learning that they must collaborate for the economic good of their region, even if that means incurring more regulation and addressing social issues, like transit and water quality, beyond the daily affairs of business.

In October 2003, the Greater Philadelphia Chamber of Commerce (GPCC) announced a new \$16 million fundraising and marketing campaign to attract companies to and retain those in the region. New GPCC President and CEO Mark Schweiker, a former acting Pennsylvania governor, sought to build on the momentum from successful city-suburban cooperation on tourism over the previous decade, which resulted in a revived hospitality industry, hotel-building boom, and resurgence of downtown restaurants. He refocused the 6,000-member GPCC from traditional membership services—holding functions for business leaders to network and lobbying to reduce taxes and government regulation—to promoting regional economic development. He also created a 40-member CEO Council for Growth under the chamber's umbrella to retain exist-

ing companies in the region and to improve relations between Philadelphia Mayor John Street and the business community.

These private-sector actions have in turn encouraged more coordination among public-sector leaders. After his reelection in 2003, Mayor Street invited representatives from the city and suburban counties to discuss regional cooperation. Then in December 2004, the chambers of commerce of Greater Philadelphia, Southern New Jersey, and New Castle County, Delaware, held a "State of the Region" conference officially launching a campaign called "Select Greater Philadelphia," partnering business executives and government officials from the eleven counties in the region. Their plan, patterned after successful programs in metro areas such as Atlanta and Washington, calls for the addition of at least 150,000 jobs to the region by 2010.

At the "State of the Region" conference, Pennsylvania Governor Ed Rendell proposed that all three states sign a formal agreement to stop poaching jobs from one another through huge tax subsidies. Perhaps most significantly, Rendell suggested sharing tax revenue generated by the new jobs, regardless of their locations.

The Partisan Impediment

With a more cooperative business climate, the region's economic outlook will likely begin to improve. The transit system will be crucial to the growth of business and population in the city and its suburbs, but SEPTA is currently suffering financially. Half of SEPTA's \$920 million operating budget comes from state funding, the rest from fares, advertising, and parking fees, as mandated by Pennsylvania law. Since the mid-1990s, however, the dedicated taxes—including car rental, tire, periodical, public utilities, and sales taxes—which are supposed to provide one-quarter of SEPTA's funding have consistently yielded less than forecast. Moreover, appropriations from the state's general fund have increased only one percent a year on average.

In the state capital of Harrisburg, a partisan fight among Pennsylvania's elected officials, growing out of a traditional urban-rural rivalry, has thwarted progress on the funding problem. Democratic legislators from the metro region proposed several funding solutions—some realistic, others not—but the Republican leadership, representing rural interests, rejected each one. Republicans insisted on linking increased funding for mass transit to badly-needed repairs for the state's aging bridges and highways, as well as



new roads in rural areas. It sounded like a reasonable compromise, but because SEPTA continued to face shortfalls, the governor has been forced periodically to transfer back some of the funding designated for highways—at the cost of offending rural voters—without any guarantee of a long-term funding solution.

Barely afloat through these funding infusions, SEPTA proposed fare hikes and service cuts, in response to which Mayor Street's administration sued for an injunction. Motivated by Street's actions, a broad group of labor, religious, and other organizations announced the formation of the Pennsylvania Transit Coalition and held a 2,000-person rally in Harrisburg. Participants included Action Alliance of Senior Citizens, Black Clergy of Philadelphia and Vicinity, the Sierra Club, and the Greater Philadelphia Hotel Association. Lance Haver, the city's consumer affairs director, praised Street's efforts: "Mayor Street decided to use the influence of his office to organize constituencies to fight for what they need."

At the end of February, just days before transit agencies throughout Pennsylvania were to vote on the fare hikes and service cuts, Governor Rendell made a surprise announcement: an unexpected windfall of federal transportation funding would provide enough cash to keep SEPTA and other transit agencies operating for the next two years without fare increases. Unable to authorize a new federal transportation bill, Congress had extended the old one to ensure that states continued to receive their share of federal funding for transportation projects. Pennsylvania received a larger share under the old bill's disbursement formula than state officials were expecting under the new formula. Revenues from gas taxes were also higher than expected.

While transit advocates breathed a sigh of relief, Republicans accused Rendell of keeping the additional funding secret so he could play it for a political gain; administration officials repeatedly failed to disclose any details about the additional funding even after federal officials authorized the state to spend it. Growing political animosity in Harrisburg makes some think that the problem of transit funding has merely been postponed. The *Philadelphia Inquirer* reported that "Rendell

supporters say the move marks a change in the governor, who is realizing that he will never win peace with Republicans." State House Transportation Committee Chair Richard Geist said he expects to hold hearings on why the administration deceived the legislature.

Nonetheless, regional transit advocates are optimistic; they take the failure of the fare hikes as a sign that urban regionalism is breaking down the partisan divide. Consumer Affairs director Haver points out that New York and Chicago recently increased fares, but not Philadelphia: "This model—a large coalition leading the fight—needs to be the model for cities throughout America." Also promising is an executive order issued by Rendell that created a state commission on transit reform and funding. The commission is due to report its findings and recommendations by the fall of 2006. It remains to be seen if Republicans will cooperate by filling their two seats on the nine-member panel.

Learning to Think— And Act—Regionally

Perhaps what is most significant is that more people, including members of the Pennsylvania Transit Coalition, are no longer content to defer to Harrisburg to solve regional problems such as mass transit. Marc Stier, a spokesman for the coalition, says that the regional movement is "building momentum. A lot of us are talking now about how we can improve the region." He also sees the potential to gain the support of urban Republicans in Harrisburg who understand that SEPTA is just as critical to the state's economy as it is to the region's.

For instance, the Bush administration's recent proposal to end federal subsidies for Amtrak concerns Philadelphia, since SEPTA shares several of Amtrak's rail lines. But through Philadelphia the rest of Pennsylvania is connected to the other states of the Northeast Corridor. The GPCC is currently working with other Northeastern chambers of commerce to weigh in on the proposal. "Philadelphia's location between New York and D.C. is one of our greatest assets," says Laurie Actman. "We need to strengthen these connections, not lose them."

Right now other metropolitan areas, such as Denver, are investing billions of dollars to

expand their rail infrastructure while Philadelphia has barely had funds to continue operation. In order to remain competitive with other regions Philadelphia needs to maintain the infrastructure and improve service of its transit system. A group of several prominent civic and private sector organizations have begun meeting to develop a strategic plan for SEPTA's future. Looking beyond just the agency's current woes is a critical first step. As one participant says, "Someone needs to provide a vision for our region's transit future." ●

The Alliance
for Regional Stewardship.
<www.regionalstewardship.org>

Metro Philadelphia Policy Center.
<www.metropolicy.org>

Pennsylvania Transit Coalition.
<www.patransit.org>

Select Greater Philadelphia.
<www.selectgreaterphiladelphia.com>

SEPTA.
<www.septa.org>

The High Cost of Free Parking

BY DONALD C. SHOUP. AMERICAN PLANNING ASSOCIATION. 733 PP. \$59.95, HARDCOVER.



AMERICA'S LOVE AFFAIR WITH THE automobile, and the toll it has taken on both the built and natural environments, has been well documented. Surprisingly, then, UCLA planning professor Donald Shoup's meticulously researched book, *The High Cost of Free Parking*, is the first to treat in depth the subject of automobile parking, the state in which the "average car spends about 95 percent of its life." It is a subject of great financial consequence: according to figures developed by University of California at Davis professor Mark Delucchi and updated by Shoup to account for inflation and the number of motor vehicles owned in the United States, in 2002 the subsidy for off-street parking alone was between \$127 billion and \$374 billion. This figure is roughly the same amount as our nation's Medicare or national defense budgets—without including subsidies for the free on-street parking that exists on most urban streets.

While many American cities believe they suffer from a parking shortage, the real problem is that they have too much free parking. Over the last sixty-plus years, planning for parking has meant planning to provide parking without cost, and America has provided enough to satisfy 99 percent of all automobile trips to the home, office, or shopping.

This superabundance has had costs well beyond municipal subsidies: parking lots mar the urban landscape, the high cost of providing parking makes developing affordable housing more difficult, and free parking skews transportation choices toward driving, thereby increasing congestion and pollution and encouraging sprawl. And because the cost of providing parking spaces is bundled into the cost of development, Shoup explains, this so-called "free" parking is actually paid for by everyone. Off-street parking, required by municipalities for nearly every land use, is expensive to provide. But rather than directly charge drivers who use the parking, developers absorb the costs of providing parking. The higher cost of development translates into higher rents in residential and office buildings and into higher retail costs in commercial buildings. Not everyone chooses to drive; yet we all subsidize drivers indirectly by paying higher costs passed on to us.

Our cities' off-street parking requirements have resulted from deliberate and democratic decision-making processes based on traffic engineers' projections of supply and demand (not from any conspiracy by auto manufacturers, a notion Shoup smartly dismisses). But as any student of economics will attest, demand increases as prices drop; hence parking requirements that are based on the demand for free parking invariably oversupply parking.

Shoup's evaluation of off-street parking requirements, while detailed and insightful, is sometimes as laborious as the parking requirements themselves. And his examples too often focus on studies in his own backyard of Southern California. But his most important contribution, an unforgiving critique of the Institute of Transportation Engineers' (ITE) *Parking Generation*, the "parking

bible" used to set off-street parking requirements in most American cities, is carefully crafted and has broad application. Shoup recognizes what many others have failed to see: that planners' blind application of *Parking Generation's* questionable data has led to an unwavering commitment to provide excessive space to accommodate the automobile.

According to Shoup, ITE provides uncommonly precise parking demand estimates for a myriad of land uses based on very small sample sizes. Planners tend to follow these guidelines without any consideration of local context. They also take ITE data that reflects the maximum demand for free parking, and use it to set minimum parking requirements. The results are evident in the parking lots of most retail establishments. Parking spaces remain largely unoccupied save the busy hours during the holiday shopping season. In his discussion on how parking requirements are set, Shoup couldn't be closer to the mark in concluding, "being roughly right is better than being precisely wrong."

He recommends two relatively simple reforms to off-street parking requirements: in-lieu fees and parking demand reduction. In-lieu fees offer developers an option to pay a fee rather than provide parking spaces; cities can then use the fee revenue to provide public parking spaces that are shared by a variety of land uses. Parking demand reduction strategies are aimed at reducing the number of vehicles needing a parking space by reducing single-occupancy vehicle trips.

Shoup notes that the barrier to charging market prices for parking is not technological, but political. Nobody wants to pay to park, and parking is a very contentious issue at the neighborhood level. Local businesses fear that charging for parking will turn cus-

tomers away, and residents generally believe that they are entitled to park for free in their neighborhoods. To overcome this political opposition and reduce demand for parking, Shoup proposes a system in which parking revenue is returned to the locations from which it is generated—via business improvement districts in commercial areas or “parking benefit districts” in residential neighborhoods. In commercial areas, businesses may be more likely to support charging for on-street parking if they can be guaranteed a portion of the revenue. These revenues could fund streetscape improvements or security enhancements to make their commercial district more attractive.

In residential neighborhoods, Shoup proposes a system in which residents could still park for free with a permit, but non-residents would have to pay for a permit to park on residential streets. The revenue generated from the sale of permits could fund sidewalk repairs or other improvements to residential neighborhoods. Residents are likely to sup-

port Shoup’s “parking benefit district” concept because the benefits are concentrated at the neighborhood level, while the costs are distributed widely to those who live outside the neighborhood.

Shoup examines driver behavior in response to free or under-priced on-street parking in a chapter titled California Cruising. Shoup and his assistants conducted a study of cruising, the all-too-familiar practice in urban areas of circling the block in search of a parking space, in the Westwood Village neighborhood near UCLA. They found that parking spaces are hard to come by when there is no incentive to give one up. He argues that curb parking is difficult in many cities because it is drastically under-priced (and most often free). If on-street parking spaces went for market prices, finding a parking spot would not be the game of chance that it is in many urban neighborhoods.

Skeptics wondering how Donald Shoup could write 700 pages on the subject of parking need not look further than Chapter 14 of

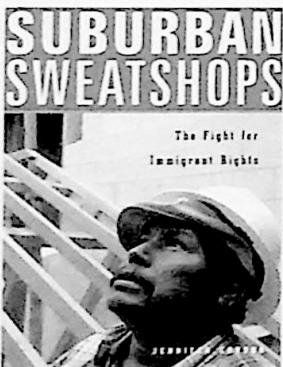
The High Cost of Free Parking, where he quotes Richard Feynman, the American Nobel Prize-winning physicist: “Everything is interesting if you look at it deeply enough.” Shoup employs a methodical approach to document the destruction wrought on American cities by free parking and he pleads with planners and policymakers to rethink what many believe to be unassailable—the fundamental right to park their car for free wherever they go. In doing so, he provides a path for extending urban planning’s familiar mantra of “planning for people rather than cars” to the way we treat the automobile where it spends most of its life—parked. ●

BOOK REVIEW

by Anika Singh

Suburban Sweatshops: The Fight for Immigrant Rights

BY JENNIFER GORDON. CAMBRIDGE: HARVARD UNIVERSITY PRESS. 384 PP. PRICE \$27.95, HARDCOVER.



EVERY EVENING ON THE NEWS WE hear about another proposed law aiming at some sort of social change, whether it concerns stem cell research, crime control, or healthcare. But new laws are just one means of enacting lasting transformation. In fact, law alone may be one of the worst ways. Picking apart her own legal work for the past decade, Jennifer Gordon offers a fascinating extended case study of the limits—and possibilities—of the law compared to well-organized collective bargaining. Juggling two

roles—as a player in efforts to help immigrant workers and as an astute observer of the hurdles they face—she tells her story with intelligence and subtlety.

Gordon founded the Workplace Project in Hempstead, a Long Island suburb, shortly after she graduated from Harvard Law School in 1992. Setting up shop in the offices of a social services agency, Gordon provided legal services to domestic workers, busboys, and other laborers injured on the job or underpaid—often unpaid—for their services. Her

storefront office, over time, provided more than just law help, becoming a base from which Latino immigrant laborers could collectively advocate for better job conditions.

Gordon quickly learned from her work that low-to-no-wage jobs don't discriminate: they are not limited to cities nor to any one industry. The suburban sweatshop is strikingly common; suburbs now have their own garment factories, restaurant kitchens staffed by low-wage immigrants, and homes and lawns tended to by small armies of immigrants, for whom minimum wage, overtime, and occupational safety laws often are not enforced.

Early on Gordon recognized that the law alone could not remedy such widespread abuse. The economics and politics of low-wage work result in a largely unregulated situation, too often not subject to state policing. What good are laws on the books when enforcement is non-existent and the penalties, even when imposed on violators, are so mild as to be toothless? Gordon writes that Harvard Law School simply had not trained her to "use law in ways [her] legal education never anticipated in order to create change in a lawless setting."

Her dilemma landed her headfirst in the decades-long academic debate over whether broad humanistic goals are best achieved from a rights-based legal framework or by mass movements for social change. The first way involves establishing and defending the rights of individuals, while the second involves organizing larger communities according to common interests. Sometimes the concept that one has rights can galvanize efforts toward social change: as Gordon points out, the rhetoric of inherent rights helped to mobilize both the abolition and the civil rights movements. But individual rights and community interests often clash. Gordon offers the example of a busboy who visited the Workplace Project's legal clinic seeking payment of back wages after years of working for less than minimum wage. Other workers at the restaurant refused to come forward. The legal clinic took the busboy's case and negotiated a \$5,000 settlement agreement with the restaurant owner. The agreement included a confidentiality provision, however, forbidding the busboy or the Workplace Project from telling anyone, including other

workers at the restaurant, about the settlement. A victory that might have sparked a collective movement to improve the situation for all of the restaurant's workers instead became a limited victory for one person.

Gordon points to other difficulties with using law as the primary mechanism for effecting change. Law only provides remedies after a violation has occurred—and given the pace at which the courts move, only long after the violation. Law is rarely preventative: because it operates largely based on precedent, it principally preserves the status quo. In the realm of labor, the law protects the right to a minimum wage but not necessarily a fair wage.

These limitations slowly led the Workplace Project to excise legal services from its day-to-day strategy for effecting social change. Gordon writes, "We used to think we knew what to do about sweatshops. Legislate. Enforce the law. Unionize. But the solutions that are most familiar were crafted for another time, for the rules and rhythms of mass production." The labor movement's successes from the New Deal and post-war era—the Fair Labor Standards Act, the Occupational Safety and Health Act, and the National Labor Relations Act—have little real import to immigrant labor's contemporary working conditions.

The Workplace Project shifted its focus from enforcing existing law to what is broadly termed organizing. Through organizing, the Workplace Project achieved one of its early legislative victories to which Gordon devotes a significant portion of her book: New York's 1997 Unpaid Wage Prohibition Act. The Act increased financial and criminal penalties for willful violations of labor laws, required extensive enforcement of such laws from the state's Department of Labor, and created additional incentives for employers to follow already-existing labor laws. Gordon relates how over an eighteen-month period beginning in January 1996, the Workplace Project and two other workers' centers in New York City developed and lobbied for passage of the Act, using media resources and partnerships with industry. The Act had real impact on the power of low-wage workers to exert pressure on their employers. Gordon relates, for example, how the prospect of a 200-percent civil penalty on top of years of owed back wages

caused the New York City greengrocer industry to allow unionization.

Nearly as significant as the results of the new law is how the Workplace Project's democratic organizational structure and focus on self-determination helped pass the Act. Often the people most affected by legislation have little role in crafting it; generally, service providers or the media report problems, and any solutions are filtered through the concerns of lobbyists and politicians. "By contrast," writes Gordon, in this case "the affected people planned and executed the campaign." The Act's provisions were based on the needs and experiences of immigrant workers, and the campaign was both legitimated and deemed media-worthy because it had been led by the membership of three workers' centers. Their participation also helped convince state legislators that the Act was worth fighting for.

For all of Gordon's concern about the possible incompatibilities between law and organizing, she doesn't get bogged down in the usually relentless academic debate. "For at least the last quarter of the twentieth century, activist lawyers and legal scholarship have been plagued by questions about whether lawyers inevitably dominate and derail collective action, and whether law has much if anything to offer to social change," she writes. She concludes that ceaseless handwringing is futile. Instead, she directs her reader to the real question: "what kind of lawyers, in what kind of relationships with community groups or movements, using what sorts of strategies, make sense in which contexts?" Gordon warns from the start that her book won't yield any miraculous solutions to the problems facing immigrant labor, but she comes through with something almost as good: direction. She demurs that the Workplace Project is not a "model" for organizers or lawyers generally. But, in fact, it is. Gordon's work provides a much-needed example of how community organizing and legal work can rely on each other. It is an important story for anyone interested in social change. ●

Sprawl: A Compact History

BY ROBERT BRUEGMANN. UNIVERSITY OF CHICAGO PRESS. 264 PP. \$27.50, HARDCOVER.



Whether it be Lewis Mumford's *The City in History*, Jane Jacobs's *The Death and Life of Great American Cities*, Joel Garreau's *Edge City*, or most recently, Joel Kotkin's *The City: A Global History*, city planners have long relied on those trained in other disciplines for a fresh understanding of the structure and organization of cities. This is the task art historian Robert Bruegmann of the University of Illinois at Chicago sets for himself in his new book entitled *Sprawl: A Compact History*.

Unlike too many recent books on sprawl—for example, Dolores Hayden and Jim Wark's *A Field Guide to Sprawl*, Andres Duany's *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*, and James Kunstler's diatribes, *The Geography of Nowhere* and *Home from Nowhere*—Bruegmann approaches the topic with an open mind. He admits enjoyment of traditional cities and rural landscapes, but he avoids the all-too-common trap of seeing suburbs as physically homogeneous and socially uninteresting. Blessed with a historian's keen eye, Bruegmann can't help but notice that many things today's anti-sprawl crusaders would have us undo about America's suburbs are the same things that first drew people out of the crowded and congested industrial cities of the early-20th century and attracted them to

suburban living. For all the books, articles, and media documentaries decrying sprawl, Bruegmann notes that the debate has generated far more heat than light.

Befitting its title, *Sprawl: A Compact History* is a relatively compact book. It is nicely organized into three sections: the first looks at the history of sprawl; the second looks at the various arguments against sprawl; and the third looks at proposed remedies for sprawl. Bruegmann's strength is in synthesizing and explaining others' works; those hoping for original research and fresh evaluative studies will not find them here.

The first of *Sprawl: A Compact History's* three sections begins by defining sprawl as any urban spatial structure that follows a downward sloping density gradient—that is, a structure where residential densities are highest in the core and then steadily decline with distance. Bruegmann follows this definition with a succession of brief chapters on urban decentralization in ancient Rome, early-20th century New York, London, and Paris, and then finally, the U.S in the post-World War period. These chapters illustrate Bruegmann's fundamental point that sprawl is hardly a new phenomenon: for much of history, decentralization was regarded as desirable.

Next, in *Sprawl's* best chapter, Bruegmann carefully catalogs the alleged causes of sprawl (such as anti-urban attitudes, government housing policies, highway construction, technology, and the automobile), and shows how, alone or in combination, none suffice to explain the popularity of suburban development. He instead posits consumer choice and the demand for both space and mobility that comes with affluence as the real "causes" of sprawl. The suburbs provide many households with a desired combination of privacy,

accessibility, and proximity to nature. This powerful argument is the heart of Bruegmann's investigation. Unfortunately, Bruegmann leaves any technical or empirical discussions, as well as detailed citations, for *Sprawl's* endnotes, making his arguments seem more facile than they really are.

Bruegmann attempts in *Sprawl's* middle section to explain and interpret what he calls the "campaign against sprawl." The early chapters in this section are a bit sketchy, but the last one, "The Third Anti-sprawl Campaign: Since the 1970s," does a credible job of focusing on increasing suburban wealth and rising expectations as the principal sources of popular concerns over sprawl. Now that suburbanites have as much house as they might want, they are shifting their aspirations to the quality and unique character of their communities. Yet in his haste to discredit these crusaders, Bruegmann dismisses the merits of their complaints. Sprawl is destroying farmland and open space. It is producing an auto-dependent society. And it does facilitate community-sorting by income. These social costs may be worth bearing to obtain the private benefits of decentralized development forms, but Bruegmann does not make that argument, instead minimizing the importance of these costs.

Sprawl's concluding section focuses on the various policies and programs that have been proposed to remedy sprawl. These chapters provide a good, albeit too brief, introduction to different growth management approaches, including greenbelts, regional planning, new towns, agricultural protection schemes, and Portland's urban growth boundary. But by now Bruegmann's die is cast: in keeping with the previous section, Bruegmann seems far more interested in critiquing such approaches by focusing on their

apparent lack of effectiveness than in presenting a balanced evaluation.

Bruegmann is an engaging writer who puts his reader right in the center of what might otherwise be a dull and complicated subject. Yet, beyond its clever organization and engaging presentation, *Sprawl: A Compact History* suffers from two critical problems. The first is that it is too compact and, as result, omits key elements in the history of suburbs and sprawl. By jumping 2000 years from the decentralization of ancient Rome to the decentralization of London, New York City, and Paris in the early-20th century, and then another 50 years to post-World War II suburbanization, Bruegmann omits such crucial suburban milestones as Frederick Law Olmstead and Calvert Vaux's 1875 design of Riverside (America's first planned suburb), Ebenezer Howard's Letchworth Garden City, and Clarence Stein and Henry Wright's 1928 plan for Radburn. The designers, planners, and developers who produced these iconic communities were active and reflective participants in the discussions of the time regarding the tradeoff between privacy and sociability inherent in suburban life. William J. Levitt's Levittown is discussed, but in a manner that makes the mass production of suburban housing seem inevitable, without adequately crediting Levitt's unique-for-the-time marketing savvy and understanding of what Americans wanted from their communities.

Short shrift is also given to the ways in which planners historically tried to use the natural landscape to enhance the suburban experience. In their plans for Riverside, for example, Olmstead and Vaux sought to heighten suburban residents' appreciation of nature by fully integrating it into their designs. Today's suburban subdivisions—which over-separate land uses and over-compartmentalize private buildings, public spaces, and the natural landscape—fail to achieve such harmony. For a historian to miss the formative stages of the very debate he is attempting to adjudicate is a bit surprising. Interested readers would still do well to turn to Kenneth Jackson's *Crabgrass Frontier: The Suburbanization of the United States*, twenty years after its initial publication still the best single source on the historical evolution of U.S. suburbs and the emergence of the debate over sprawl.

Sprawl: A Compact History's second critical problem is that in Bruegmann's quest to concisely define sprawl so that he might evaluate its pros and cons, he vastly oversimplifies it. Bruegmann's "downward sloping gradient" definition characterizes sprawl solely in terms of density. The use of a single, simple definition may make it easier for readers to follow Bruegmann's later summary of the sprawl debate, but it does little to improve the reader's understanding of the full range of environmental, transportation, social, and equity issues associated with that debate. Other writers, notably researcher Reid Ewing and planning professor George Galster, have done a much better job of describing the multi-dimensional nature of sprawl, including its excessive land use separation, auto-dependency and poor pedestrian connections, and lack of functional open space. Even economists like Jan Brueckner, who for the most part agree with Bruegmann and see suburbs as a faithful expression of consumer preferences, have voiced some concern over the lack of transportation, retail, open space, and housing choices that characterize so many suburban communities.

By choosing to define sprawl solely in terms of density, and then concluding that there is no historical and contemporary case to be made against sprawl, Bruegmann steps into the same over-simplification trap that he accuses the anti-sprawl crusaders of falling into. Given Bruegmann's commendable skepticism of the conventional wisdom, his keen eye for the built environment and natural landscape, and an engaging writing style, *Sprawl: A Compact History* could have been a rich and nuanced inquiry into a difficult and important issue. Instead and regrettably, it substitutes compactness for completeness. ●

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hundred yards from my apartment. At night, the smell of auto exhaust blanketed me and thousands of neighbors, while the roaring traffic sounded a little like the ocean—except those “cool beach breezes” were piling soot on my balcony. Beyond the off-ramps, surface streets were excessively wide and dominated by more whizzing cars. The buildings reflected automobile dependence in the form of massive office parks and shopping centers. Social life revolved around the Starbucks, Rite-Aid, or 16-screen movie theater in the nearest big box mini-malls. Even nature itself seemed to conspire against pedestrians: once, when my fiancée and I tried to walk to a jazz concert at the nearby Hilton, swarms of flying cockroaches inexplicably blocked our path.

But one day, while driving to the mall, I passed a little sign that forever changed my perception of the neighborhood. At an intersection near the two mid-rises in the middle of Woodland Hills, the sign read, “Warner Center Transit Hub.” As far as I knew, Warner Center was only a hub for reckless drivers and bored teenagers. I soon learned, however, that the Los Angeles Metropolitan Transit Authority was nearing completion of its new dedicated bus route. The Orange Line, which debuted in October 2005, travels from Warner Center to North Hollywood, mostly along an old streetcar route, depositing commuters at one end of the city’s Red Line subway—and thus linking Woodland Hills to downtown and beyond via (ideally) efficient, speedy, public transportation.

Suddenly, I saw Warner Center in a whole new light. It was one of those fancy “transit-oriented developments” I had heard so much about—it had just been missing the transit. Thousands of apartments were now

within a short bus ride of thousands of jobs. The two major malls within walking distance of our apartment meant that we had most everything we needed to buy just minutes away. And to top it all off, the park right next to our apartment complex had summer “Concerts In the Park” (featuring surviving members of classic rock bands like Three Dog Night!).

Turns out, this was all planned—it just took a really long time to implement. In September 1967, the L.A. Department of City Planning drafted a paper called “Concepts for Los Angeles” in which it outlined different options for organizing development in the city so as to accommodate population growth over time. The “Centers Plan” option, which was eventually adopted, called for “highly concentrated employment ... accompanied by nearby high density residence together with a high-volume, fast-moving transportation system which will bring in large numbers of workers from outlying areas.” In each of the thirty or so planned centers, “employment and residence would approach a balance, giving most workers the opportunity to work near home... [also] a comprehensive choice of retail goods, services and entertainment would be available within the limits of each center.”

Eventually, some development did concentrate in major centers, like Century City and Westwood, in addition to Warner Center. In fact, recent Census figures have shown that the L.A. metropolitan area is actually one of the densest in the country—but it had always lacked the mass transit system to connect everyone. While the Orange Line isn’t the silver bullet, it’s certainly a step in the right direction, another piece to fit into the

sprawling puzzle of L.A.’s landscape. As much as I didn’t want to admit it at first, with the addition of mass transit, Warner Center fit the ideal “center” description perfectly.

Apartment complexes began converting to condos, and so a few months ago, my fiancée and I were forced to move farther east in the Valley. I realized that the people who pushed us out were buying their vision of the American Dream—not necessarily sprawl, but another, slightly better version of suburbia. The cars still sped and good restaurants were still hard to find, but taking an evening stroll around the park before heading to the movie theater, I thought that I might actually miss the place.

In my new neighborhood, I can walk to work, and my fiancée sometimes takes the Orange Line to her job back in Woodland Hills. It took two years of living in the Valley, and the realization of a decades-long effort by city government to create mass transit there, but I can now entertain a notion most city dwellers across the country can’t: maybe not all of suburbia is characterless sprawl. In these situations, for all the inevitable strip malls and drive thrus of life in the ‘burbs, with concentrated development linked by mass transit, the end product just might be worth emulating. ●

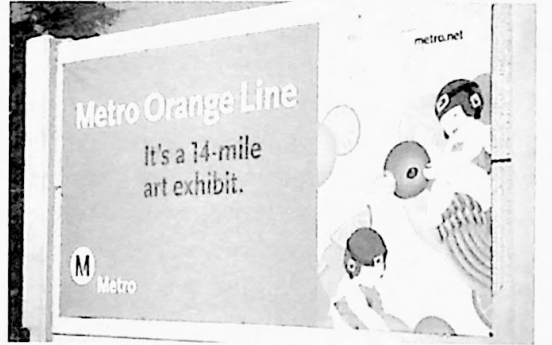
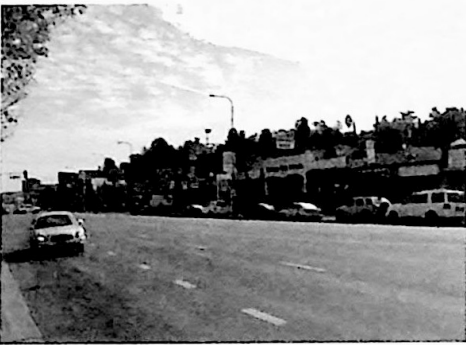
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How I Learned to Stop Worrying and Love the Valley

I MOVED TO WOODLAND HILLS, California, only because my fiancée got a new job there. My new home was Warner Center, a collection of office buildings and apartment complexes in one of the many interconnected towns of the San Fernando Valley, about fifteen miles northwest of downtown Los Angeles. “The Valley,” as it’s known to Angelenos, takes up over half the area of Los Angeles proper and is home to almost 2 million people—making it equivalent in size to the fifth largest city in the country.

To me, a D.C. native, the Valley’s reputation rested on three things, all of them weird: (1) Valley Girls, infamous for twirling their

hair and repeating, “like, ya know, whatever”; (2) the pornography industry; and (3) Fast Times at Ridgmont High and other movies that epitomized postwar American suburbia and its discontents.

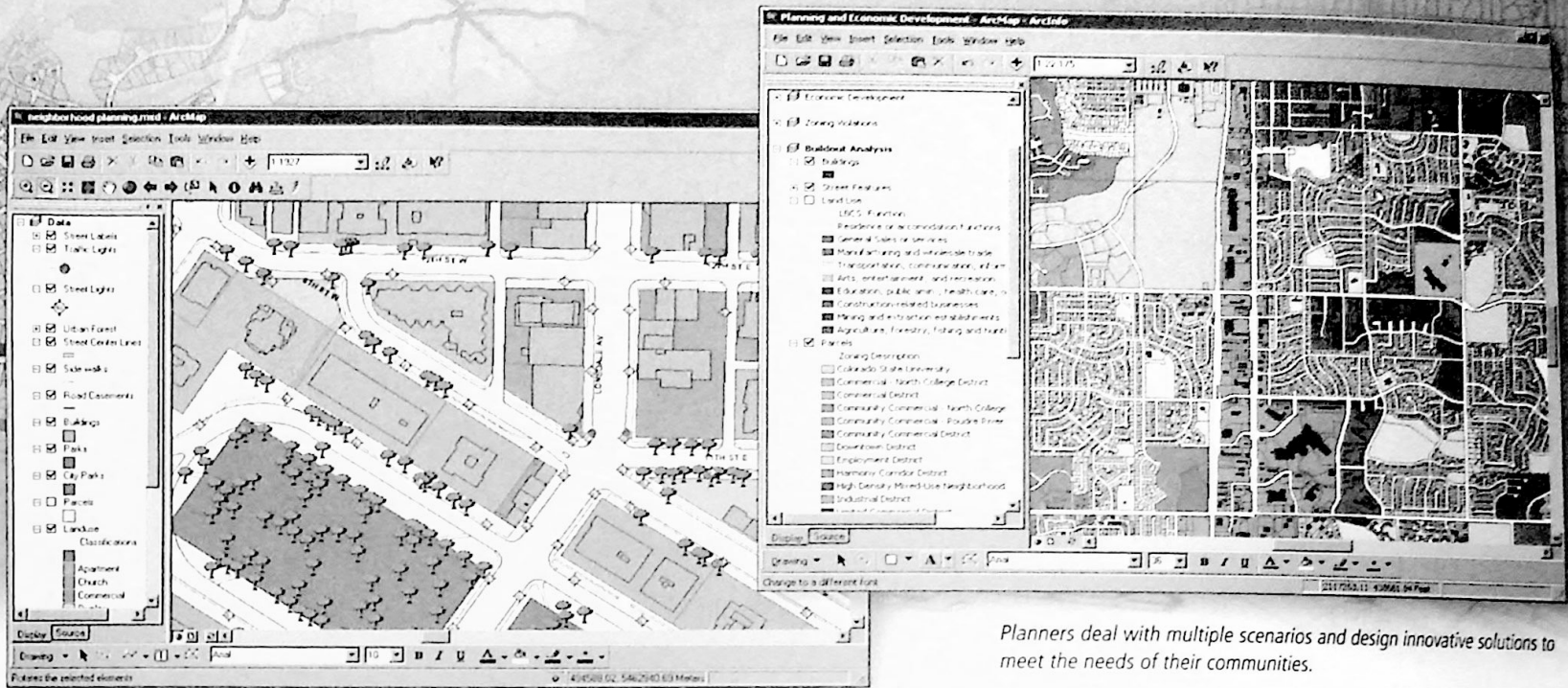
Sure enough, after settling into my massive 4,000-person gated apartment complex, I hated it. The car dominated life. Americans from Phoenix to Fort Lauderdale might find that unsurprising, but for urbanites from D.C., New York, or San Francisco, auto-fixated life in the new American “city”—that is, a suburb, unified by shopping plazas and housing developments—can come as a shock.

Ventura Boulevard, the main drag through the Valley and a key restaurant and retail strip in Warner Center, made me queasy. Its never-ending stream of schlock revolves around car culture and the apparent Valley lifestyle. Tacky billboards, oversized neon signs advertising everything from liquor to plastic surgeons, car dealerships, car washes, strip malls, and fast food joints all pay homage to local customs.

Ventura Boulevard was positively quaint, however, compared to U.S. 101, just a few

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