

the transportation prescription



BOLD NEW IDEAS FOR HEALTHY, EQUITABLE TRANSPORTATION REFORM IN AMERICA

PolicyLink

PolicyLink is a national research and action institute advancing economic and social equity by Lifting Up What Works.®

Prevention Institute

Putting prevention and equitable health outcomes at the center of community well-being.

This report was commissioned by the Convergence Partnership which includes the following institutions:

The California Endowment
Kaiser Permanente
The Kresge Foundation
Nemours
Robert Wood Johnson Foundation
W.K. Kellogg Foundation
Centers for Disease Control and Prevention
as technical advisers

the transportation prescription

**BOLD NEW IDEAS FOR HEALTHY, EQUITABLE
TRANSPORTATION REFORM IN AMERICA**

BY

Judith Bell

President
PolicyLink

Larry Cohen

Founder and Executive Director
Prevention Institute

EDITED BY

Shireen Malekafzali

Senior Associate
PolicyLink

A NOTE ABOUT THIS REPORT

The Transportation Prescription: Bold New Ideas for Healthy, Equitable Transportation Reform in America builds on the research and analysis of a number of experts who are working at the intersection of transportation, equity, and public health. The ideas that collectively form the heart of this paper are explored in depth in the book, *Healthy, Equitable Transportation Policy: Recommendations and Research*. Chapters are written or co-written by the authors listed below. Each chapter and the entire book can be found online at www.convergencepartnership.org/HealthyEquitableTransport.

Larry Cohen, co-author, "Traffic Injury Prevention: A 21st-Century Approach," founder and executive director, Prevention Institute, Oakland

Susan Handy, "Walking, Bicycling, and Health," professor of Environmental Science and Policy and director of the Sustainable Transportation Center, University of California, Davis

Todd Litman, "Public Transportation and Health," founder and executive director of the Victoria Transport Policy Institute, British Columbia

Leslie Mikkelsen, co-author, "Traffic Injury Prevention: A 21st-Century Approach," managing director, Prevention Institute, Oakland

Kami Pothukuchi, co-author, "Sustainable Food Systems: Perspectives on Transportation Policy," associate professor of Urban Planning, Wayne State University, Detroit

Catherine L. Ross, "Roadways and Health: Making the Case for Collaboration," director, Georgia Tech Center for Quality Growth and Regional Development and the Harry West Chair for Quality Growth and Regional Development, Atlanta

Janani Srikantharajah, co-author, "Traffic Injury Prevention: A 21st-Century Approach," program coordinator, Prevention Institute, Oakland

Todd Swanstrom, "Breaking Down Silos: Transportation, Economic Development, and Health," E. Desmond Lee Professor of Community Collaboration and Public Policy Administration at the University of Missouri, St. Louis

Richard Wallace, co-author, "Sustainable Food Systems: Perspectives on Transportation Policy," senior project manager, Center for Automotive Research, Ann Arbor

We owe a sincere debt of gratitude to these progressive individuals who recognize the value of working across fields to identify effective and long-term solutions to multiple problems.

Contents

5	Foreword	
		Congressman <i>James Oberstar</i> , Chairman of the House Transportation and Infrastructure Committee
6	Preface	
		<i>Angela Glover Blackwell</i> , Founder and CEO, PolicyLink
9	Introduction	
10	Transportation in America: A New Vision	
13	How Transportation Policies and Plans Influence Health	
13	Direct Health Effects	
		Pollution
		Climate Change
		Physical Activity
		Mental Health
		Safety
16	Indirect Health Effects	
		Transportation, Income, and Health
		Older Adults and People with Disabilities
18	What Does Healthy, Equitable Transportation Policy Look Like?	
21	The Federal Transportation Legacy and Challenges Ahead	
23	A Foundation for 21st-Century Transportation Policy	
24	Policy and Program Priorities to Improve Health and Equity	
26	Conclusion	
27	Author Biographies	
28	Acknowledgments	
29	Notes	

Foreword Congressman James Oberstar

Discussions of public health and wellness often are limited to the health and medical fields. It is my hope that soon, the transportation sector will be part of the discussion and play a role in providing solutions to improving the nation's overall health, well-being, and quality of life.

One of my goals as Chairman of the Committee on Transportation and Infrastructure is to create a new model for surface transportation, one that invests in alternative modes and promotes active, healthy lifestyles. Public health and transportation policy choices are inextricably linked. The transportation sector is responsible for one-third of the greenhouse gas emissions in the United States. Our infrastructure and land use choices often dictate our daily travel, and whether or not we have access to clean, healthy transportation options. And in any given year, approximately 40,000 Americans are killed on our roadways. The policy decisions we make regarding transportation have repercussions on public health throughout our society.

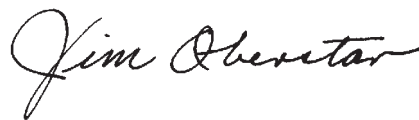
For too long now, our transportation decision-making has failed to address the impacts that our infrastructure network has on public health and equity. The asphalt poured and lane miles constructed enhanced our mobility and strengthened our economic growth; but too often, this auto-centric mindset took hold and crowded out opportunities to invest in a truly sustainable intermodal transportation system, in particular a system that meets the needs of underserved communities.

The failure to link transportation and land use decision making, and to consider the public health effects of these choices, has led to a tilted playing field that has made driving the easiest—and often the only—option available in many parts of the country. Our transportation policies and investments must do more to provide access for all through various modes. Transit, walking, and bicycling all have a significant role to play in lowering our dependence on foreign oil, reducing our greenhouse gas emissions and air pollutants,

and helping Americans incorporate exercise and fresh air into their daily travel routines. We must also continue our pursuit to reduce the number—and rate—of traffic fatalities and injuries that occur each year.

Our most recent surface transportation legislation, enacted in 2005, took important steps toward building a healthier infrastructure by investing billions of dollars in safety, public transit, walking, and bicycling. This legislation is helping to construct safer infrastructure, enable workforce development, build new transit lines, repair existing systems, and establish non-motorized transportation networks. We also enacted the Safe Routes to School program, which allows states to invest in safety improvements and education campaigns to get kids walking and biking to school again. This program has shown great early success and has the ability to change the habits of an entire generation.

Environmental sustainability, access, and our collective well-being must combine with mobility and safety as the cornerstones of our transportation investments. The following report represents an important contribution to our emerging understanding of the connections between transportation and public health and is an invaluable resource for policymakers and all those interested in building healthy communities. With a greater recognition of the strong linkage between public health and transportation, I believe we can build a network that supports our mobility and creates access and economic strength while promoting equity, sustaining our good health and quality of life.



Congressman James Oberstar

Chairman of the House Transportation and Infrastructure Committee



Preface Angela Glover Blackwell

Transportation policy has enormous potential to catalyze the development of healthy communities of opportunity. The upcoming authorization of the federal surface transportation bill represents the single biggest federal opportunity to influence how our communities, cities, and regions are shaped.

Transportation impacts health directly: it affects air quality, injury risk, physical activity levels, and access to necessities such as grocery stores. Transportation is also one of the largest drivers of land use patterns; it thus determines whether communities have sidewalks and areas to play and be physically active as well as whether communities are connected to or isolated from economic and social opportunities.

Research shows that low-income communities and communities of color often do not have access to the benefits our transportation system can provide, yet they bear the burdens of that system. For example, many low-income neighborhoods have little or no efficient, reliable public transportation to get them to jobs and essential goods and services. But these communities are often situated near bus depots, highways, and truck routes, where pollution levels are high—and not coincidentally, asthma rates are high as well. In addition, many of these same communities live without safe, complete sidewalks or bike paths, making walking and biking difficult and often dangerous. As a result,

these neighborhoods have low levels of physical activity and high rates of chronic diseases. Creating a more equitable transportation system must lie at the core of any analysis of transportation or health, and it must guide all reform.

The Convergence Partnership, the collaborative of funders that commissioned this project, embraces the imperative that health and equity be central to transportation policy debates. Further, the Convergence Partnership recognizes how transportation policy is connected to the Partnership's broader efforts to support environmental and policy changes that will create healthy people and healthy places. The Partnership's steering committee includes: The California Endowment, Kaiser Permanente, the Kresge Foundation, Nemours, the Robert Wood Johnson Foundation, and the W. K. Kellogg Foundation. The Centers for Disease Control and Prevention serves as technical advisor.

In this project, leading academic researchers and advocates working at the intersection of transportation policy, equity, and public health identify opportunities for creating transportation systems that promote health and equity. This report synthesizes their insights and offers concrete recommendations for change.

Reform is long overdue. Climate change, shameful health disparities, growing rates of

chronic diseases—transportation policy has contributed to these problems, and now it must address them. Increasing rates of poverty and a severe economic downturn add to the urgency for reform.

This report intentionally uses the term *authorization* and not the more common word, *reauthorization*, in reference to the surface transportation bill. We want to make clear that new thinking and innovative approaches are necessary to meet the needs of a changing and diverse America.

Many advocates are already working hard to push for fundamental reform. This report was written for community leaders, policymakers, funders, practitioners, and advocates interested in an overarching strategy to promote active living and to build healthy communities of opportunity. PolicyLink, Prevention Institute, and the Convergence Partnership believe that building healthy communities requires a collaboration of stakeholders from diverse fields and sectors. Together, we can identify and support shared solutions.

The project recognizes that effective strategies to improve health, particularly in vulnerable communities, often fall outside the conventional domain of health policy, yet deserve equal attention. Federal transportation policy is a critical opportunity at our fingertips. Leveraging the strength of collaboration and networking can yield powerful results. Let's seize the moment.



Angela Glover Blackwell

Founder and CEO
PolicyLink



Introduction

In St. Louis, MO, major cuts in bus service this spring left workers, students, people with disabilities, and older residents stranded and feeling bereft. Stuart and Dianne Falk, who are both in wheelchairs, told *CNN* they no longer would be able to get to the gym or the downtown theater company where they volunteer. “To be saddled, to be imprisoned, that is what it is going to feeling like,” Stuart Falk said.¹

In West Oakland, CA, families have no escape from the diesel exhaust belching from trucks at the nearby port: The air inside some homes is five times more toxic than in other parts of the city. “I’m constantly doing this dance about cleaning diesel soot from my blinds and window sills,” 57-year-old Margaret Gordon told the *San Francisco Chronicle*.²

In Seattle, WA, Maggie Rathbun, a 55-year-old diabetic who has no car, takes an hour-long bus ride to buy fresh fruits and vegetables. She cannot haul more than a few small bags at a time so she shops frequently—if she feels well enough. “It depends on what kind of day I’m having with my diabetes to decide whether I’m going to make do with a bowl of cereal or try to go get something better,” she told the *Seattle Post-Intelligencer*.³

Our transportation system has an enormous impact on our way of life, on the air we breathe, and on the vitality of our communities. Transportation choices influence personal decisions about where to live, shop, attend school, work, and enjoy leisure. They affect stress levels, family budgets, and the time we spend with our children. Although most people don’t think of it as a determinant of health, our transportation system has far-reaching implications for our risk of disease and injury. Transportation policies and accompanying land use patterns contribute to the glaring health disparities between the affluent and the poor and between white people and people of color.

This report demonstrates that transportation policy *is*, in effect, health policy—and environmental policy, food policy, employment policy, and metropolitan development policy, each of which bears on health independently and in concert with the others. Longstanding transportation and land use policies are at odds with serious health, environmental, and economic needs of the country, and they have harmed low-income communities and

communities of color especially. Forward-thinking transportation policies must promote healthy, green, safe, accessible, and affordable ways of getting where we need to go. They also must go hand in hand with equitable, sustainable land use planning and community economic development.

Streets and roads are the largest chunks of property owned by most cities and states. We have choices to make about how to use, and share, that real estate. Who decides? Who benefits? Who pays? Transportation policy at all levels of government can be a vehicle to promote public health, sustainability, equitable opportunity, and the economic strength of neighborhoods, cities, and regions. But that will happen only if advocates, experts, and organizers steeped in all these issues bring their knowledge and passion to critical transportation decisions. The upcoming authorization of the most important transportation legislation in the United States, the federal surface transportation bill, makes this a pivotal moment to bring a broad vision for health and equity to transportation policy.

Transportation in America: A New Vision

Underlying this report is a vision of transportation as more than a means to move people and goods, but also as a way to build healthy, opportunity-rich communities. Health is often viewed from an individual perspective. Yet, each resident in a region is both an individual and part of a larger community. Therefore, our vision for healthy, equitable communities is one that extends beyond individual outcomes and creates conditions that allow all to reach their full potential. It does not force us to balance one individual against another. It provides the opportunity for everyone to participate in their community, be healthy, and prosper.

Transportation systems are essential to the competitiveness of the nation and the viability of regions. Building America's Future, a bipartisan coalition of elected officials, views increased transportation investment as a key to the economic growth and job creation needed to strengthen cities and rural communities.⁴ The *American Recovery and Reinvestment Act (ARRA)*, the nearly \$1 trillion stimulus package passed by Congress and signed by President Obama in early 2009, emphasizes transportation investments to revive the ailing economy and rebuild regions.⁵ The act galvanized advocates to push government agencies to spend the money in ways that promote health, protect the environment, and benefit everyone. Now momentum is building to bring a focus on health and equity to the next version of the federal surface transportation bill.⁶

Over the past half-century, federal transportation policy has changed the American landscape, physically, socially, and culturally. Beginning with the *Federal-Aid Highway Act of 1956* authorizing the Interstate Highway System, the leading transportation priority by far has been what planners call mobility and which became synonymous with the movement of more and more cars and goods farther and faster. Mobility advanced the nation's growth and prosperity, and it formed our sense of identity as well as our image abroad. The car was more than a machine to get us around;

it stood as a symbol of American freedom, ingenuity, and manufacturing prowess.

While some have few or no transportation choices due to limited transportation infrastructure and resources in their communities, many Americans do have the opportunity to make choices about how to travel and where to go. For these people, the car provided the means to flee the city, buy a quarter-acre patch of suburbia, and drive to their hearts' content without giving much thought to the disinvested neighborhoods left behind, or the farmland lost to development, or the fossil fuels and other natural resources their lifestyles consumed. Community environments, however, affect the choices individuals make, and public policy molds those environments. As the nation confronts severe economic, environmental, and health challenges as well as the widening gulf between rich and poor, it is becoming clear that we must make different choices as individuals and as a society.

A new framework for transportation policy and planning is emerging. Rather than focus almost exclusively on mobility (and its corollaries, speed and distance), this framework also emphasizes transportation accessibility. In other words, instead of designing transportation systems primarily to move cars and goods, the new approach calls for systems designed to serve people—all people—efficiently, affordably, and safely. This approach prioritizes investments in: (1) public transportation, walking, and bicycling—transportation modes that can promote health, opportunity, environmental quality, and indeed mobility for people who do not have access to cars; and (2) communities with the greatest need for affordable, safe, reliable transportation linkages to jobs, and essential goods and services—chiefly, low-income communities and communities of color.

The goal is to improve transportation for everyone while delivering other important payoffs, including better respiratory and cardiovascular health; improved physical fitness;

less emotional stress; cleaner air; quieter streets; fewer traffic injuries and deaths; and greater access to jobs, nutritious foods, pharmacies, clinics, and other essentials for healthy, productive living.

This new vision is at the core of a burgeoning movement to shape transportation policy to support work in a number of critical areas, such as climate change, sustainable agriculture, the prevention of chronic diseases, workforce development, and neighborhood revitalization. Advocates and experts in public health, environmental justice, labor, community economic development, food policy, and other fields and disciplines have important roles to play in transportation debates. A broad range of interests, working in partnership, can craft innovative, environmentally sound solutions that benefit everyone, rather than plans that reflect the motor vehicle orientation of road engineers and builders. Government transportation agencies and developers—the architects of our transportation systems for decades—must be held accountable for how their investments affect the economic prospects of regions, the health of communities, and the well-being of residents.

This shift in thinking about what transportation policy must achieve and who should drive it stems from a long list of factors. Among them: near-crippling congestion in many metropolitan areas; renewed interest in city living and a hunger for shorter commutes; demographic changes (including the increasing number of people over 65 and immigrants, two groups less likely to drive or own cars); the rise in obesity; the enduring poverty in inner-city and rural communities; the growing understanding of the connections among health, the built environment, and transportation plans; and the increasing frustration among residents and advocates about the limited accountability and inequitable transportation decision-making processes at the state and regional levels which over represent suburban and white male interests.

But the push to reform transportation (along with its cousin, land use planning) has gained urgency in the face of three massive challenges that are upending the status quo of every field and that go to the heart of our love affair with the car: (1) climate change, with its threat of global ecological upheaval; (2) U.S. dependence on foreign oil, which carries grave risks for our economy and security; (3) a healthcare system crumbling under the demands of skyrocketing rates of diabetes and other chronic diseases associated with sedentary lifestyles, and astronomical costs. Transporting goods, services, and people accounts for about one-third of greenhouse gas emissions and two-thirds of petroleum consumption in the United States.⁷ As the National Surface Transportation Policy and Revenue Study Commission noted in its landmark report, *Transportation for Tomorrow*, the environmental gains we achieve through incremental fixes such as higher fuel-efficiency standards, though important, will be trumped by increases in driving and traffic if we continue on our current policy course.

The good news is that change *can* happen, and inspiring examples abound. In the rural San Joaquin Valley in California, where public transportation has been virtually nonexistent, a new system of publicly managed vanpools is connecting farm worker families to jobs, schools, and medical services.⁸

In Chicago's West Garfield Park, an alliance of residents, activists, and faith-based organizations not only successfully fought the closure of the rail line that linked the neighborhood to downtown; they also transformed a transit stop into an anchor development of shops, community services, and moderately priced housing.⁹

In port cities around the country, many groups are working to reduce pollution from ships, locomotives, and trucks, some of the worst emitters of soot and greenhouse gases. In the Los Angeles region—one of a number of regions where the movement of goods

represents a significant part of transportation investment and economic activity, and where ports and freeways abut low-income neighborhoods—the Coalition for Clean and Safe Ports has formed an effective alliance of residents, truck drivers, public health experts, environmentalists, environmental justice activists, unions, immigrant groups, and public officials to push for clean air solutions.¹⁰

The authorization of the next federal surface transportation bill presents an immense opportunity to broaden such engagement and to forge an equitable policy response to the unprecedented challenges facing the country. The bill authorizes federal funding for highways, highway safety, public transportation, and bicycling and pedestrian infrastructure for approximately six years.¹¹ It transfers hundreds of billions of dollars from the federal government to states and localities. It also triggers hundreds of billions more in matching state and local spending. The bill marks the largest transportation expenditure in the United States.

But the legislation does more than provide money. It also communicates national policy priorities. Will we build roads on the farthest edges of regions or fix aging roads and bridges in cities and inner-ring suburbs? Will we invest in healthy, green transportation—bicycle lanes, safe sidewalks for walking, clean buses, ridesharing, light rails? Will we ensure that all voices are equitably represented in transportation decision-making processes? And will we include incentives and requirements for affordable housing near public transportation to ensure broad access to the job opportunities and services that transit oriented development stimulates? Or will we spend most of the money as we have for decades: on new and bigger highways with little public accountability? The bill establishes funding categories and requirements and in some cases gives communities and metropolitan regions flexibility to shape strategies to local needs. The new law is a chance to design communities for health, sustainability, and opportunity—and to give all Americans physically active, clean, affordable, convenient, reliable, and safe options to get where they need to go.

How Transportation Policies and Plans Influence Health

Our current transportation system has many direct health consequences: Pollution-related asthma, steep declines in physical activity, and the associated rise in obesity and chronic illnesses are just a few examples. Transportation affects health indirectly by connecting people—or by failing to provide connections—to jobs, medical care, healthy food outlets, and other necessities. The National Surface Transportation Policy and Revenue Study Commission—created by Congress in 2005 to examine the condition and future needs of our network of highways, ports, freight and passenger railroads, and public transportation systems—reached a sobering conclusion: “The nation’s surface transportation network regrettably exacts a terrible toll in lost lives and damaged health.”¹² Nowhere is the toll higher than among low-income people and people of color.

There is a deep and evolving knowledge base about the links between transportation and health. Research shows that when properly designed, transportation systems can provide exercise opportunities, improve safety, lower emotional stress, link poor people to opportunity, connect isolated older adults and people with disabilities to crucial services and social supports, and stimulate economic development. Conventional mobility-focused planning by local, regional, and state transportation agencies generally overlooks or undervalues the impacts of transportation investments on health and equity.

Direct Health Effects

Pollution

Pollutants from cars, buses, and trucks are associated with impaired lung development and function in infants¹³ and children,¹⁴ and with lung cancer,¹⁵ heart disease, respiratory illness,¹⁶ and premature death.¹⁷ Long-term exposure to pollution from traffic may be as significant a threat for premature death as traffic crashes and obesity.¹⁸ In California alone, pollution is a factor in an estimated 8,800 premature deaths a year.¹⁹

The main culprits are fine particulate matter, including: diesel exhaust particles, ground-level ozone, a toxic component of smog formed when tailpipe emissions from cars and trucks react with sunlight and oxygen, and nitrogen oxide (NOx), which contributes to the formation of ozone and smog. The health risks are exacerbated by transportation patterns that often embed heavy traffic and diesel-spewing facilities in poor and predominantly minority neighborhoods. The American Lung Association has found that 61.3 percent of African American children, 67.7 percent of Asian American children, and 69.2 percent of Latino children live in areas that exceed air quality standards for ozone, compared with 50.8 percent of white children.²⁰ Ground-level ozone, a gas, can chemically burn the lining of the respiratory tract.

Air pollution is also “one of the most underappreciated” triggers of asthma attacks, according to the Centers for Disease Control and Prevention (CDC).²¹ More than 20 million Americans—roughly seven percent of adults and nearly nine percent of all children—have asthma. In poor and minority communities, the rates are considerably higher. For example, in Harlem and Washington Heights in northern Manhattan, home to mostly low-income African American and Latino residents, one in four children suffers from the disease.²² Research shows that air pollution can trigger the wheezing, coughing, and gasping for breath that signal an attack in people with asthma. But a study in 10 Southern California cities raises the troubling possibility that pollution can also lead to the onset of the disease. The study found that the closer children live to a freeway, the more likely they are to develop asthma.²³

Environmental justice activists have called attention for years to the connections among pollution, illness, and transportation policy—and the burden on communities of color. For instance, in the mid-1990s, West Harlem Environmental Action (WE ACT) used mapping, air monitoring, and resident surveys to show that the neighborhood’s asthma rates were

linked to its dubious status as the diesel capital of New York City. When WE ACT began work on the issue, Harlem housed six of the city's eight bus depots and 650 Port Authority buses. The group played an important role in getting the city to convert buses to clean fuel.²⁴

Pollution from freight transport is another big concern around the country. To meet America's insatiable demand for goods, ports and highways are continually expanding to accommodate more ships, locomotives, and trucks. Ports frequently border low-income and minority neighborhoods, and highways often run through them. The upshot: Some of the worst emitters of fine particles, soot, and greenhouse gases (GHGs) are a growing presence in already vulnerable communities.

Climate Change

GHGs are not pollutants in the classical sense. They cause the atmospheric changes and resulting climate disruptions that are projected to alter the natural and built environments on which society relies.²⁵ The health risks come largely from those environmental alterations. In a major shift in federal policy, the Environmental Protection Agency in April 2009 adopted the position that greenhouse gases pose a danger to human health and welfare. A few weeks later, the *Climate Change and Health Protection and Promotion Act*, H.R. 2323, was introduced in the House of Representatives.²⁶ The bill would direct the Department of Health and Human Services to develop a national strategic action plan to prepare for and respond to the health effects of climate change.

Researchers are just beginning to assess the specific health dangers in the United States; to date, most of the published data come from abroad. So far, however, there are more questions than answers. How will less rainfall affect the potential for waterborne diseases? Food supplies? Food prices? How will extreme weather conditions such as heat waves or hurricanes affect mental health? Physical activity? Population displacement?

Scientists believe that climate change could exacerbate a number of current health problems, including heat-related deaths, diarrheal diseases, allergies, and asthma.²⁸ Those already at highest risk—the poor, minorities, children, and older adults—will be even more vulnerable. Policy neglect would compound the problems. Hurricane Katrina revealed, to a horrified public, the disastrous results that can occur when nature (the sort of extreme storm that experts expect to occur more frequently as the earth's temperature changes) combines with government disregard (in this case, the poorly maintained levees that failed to protect New Orleans from catastrophic flooding) as well as resource inequities (the lack of transportation, which made evacuation impossible for thousands of people).

The urgent need to reduce GHGs has catapulted transportation policy into the limelight. The United States has only about five percent of the world's population but contributes nearly 25 percent of GHGs, mainly because of fossil fuel consumption, motor vehicle emissions, and industrial agricultural practices (which themselves are promoted by our transportation system). Improving vehicle technology, while important, is not enough. Americans need to drive less. That will happen only if walking, bicycling, and public transportation become feasible, efficient alternatives to driving in many more communities, and if land use patterns are changed so people no longer have to jump in the car for every trip.

Physical Activity

Sixty percent of adults in the United States do not meet recommended levels of physical activity, and 25 percent are completely sedentary.²⁹ African Americans and Latinos are less likely than whites to get enough daily physical activity.³⁰ The links between physical activity and health are well established. Sedentary lifestyles are estimated to contribute to as many as 255,000 deaths each year.³¹ Many children and teens are already at risk for heart disease and type 2 diabetes, once considered

“adult” ailments. Today’s youth may turn out to be the first generation in modern history to live shorter lives than their parents.³²

Physical inactivity is an important factor in the rising rates of obesity and chronic disease—and transportation practices strongly influence physical activity habits. The more time a person spends in a car, the more likely he or she is to be overweight. Conversely, higher rates of walking and bicycling are associated with lower rates of obesity. A 2004 study found that every additional hour spent in a car is associated with a six percent increase in the likelihood of obesity, and every additional kilometer walked is associated with a 4.8 percent reduction.³³

There are many ways to be physically active, but quite a few require time, skill, and money. Walking and bicycling not only for recreation but also for transportation are the most practical ways to improve fitness. They are often the only viable option for low-income residents who live in neighborhoods without parks, who cannot afford gym memberships, and who do not have the luxury of leisure time.

People who use public transportation tend to walk to and from bus stops and train stations, increasing their likelihood of meeting physical activity recommendations.³⁴ Residents of compact neighborhoods walk, bike, and use public transportation more than residents of spread-out communities, and they have lower rates of obesity.

Mental Health

Rush-hour gridlock, long waits for the bus, and arduous commutes are stressful. They take time away from family, friends, and the activities that provide emotional sustenance: hobbies, religion, sports, clubs, civic engagement, and volunteer commitments. Every 10 minutes spent commuting is associated with a 10 percent drop in the time spent traveling for social purposes.³⁵

Many people find commuting by high-quality public transportation to be less stressful than commuting by car. As we discuss below, the financial costs associated with long commutes exacerbate the stress, particularly in low-income households.

Safety

Traffic crashes are a leading cause of death and injury for Americans in the prime of life.³⁶ In 2000, motor vehicle crashes cost \$230.6 billion in medical costs, property damages, lost worker productivity, travel delays, and other expenses.³⁷ That figure equals about half of all spending on public education from kindergarten through 12th grade.

Native Americans die in traffic crashes at more than 1.5 times the rate of other racial groups.³⁸ African Americans drive less than whites but die at higher rates in car crashes. Walking, too, is also more dangerous in communities of color. CDC data in the mid-1990s revealed that the pedestrian death rate for Latino males in the Atlanta metropolitan area was six times greater than for whites.³⁹ African Americans make up 12 percent of the U.S. population but account for 20 percent of pedestrian deaths.⁴⁰

Inequitable transportation policies and resources contribute to these disparities. Low-income people and people of color have fewer resources to buy products that improve safety, such as late-model cars and new child safety seats. In underinvested neighborhoods, poorly designed streets, neglected road maintenance, inadequate lighting, limited sidewalks, and minimal traffic enforcement place residents at higher risk of injury.

Safety is also a huge concern for older adults—the fastest-growing segment of the population—and for rural residents. Driving skills decline with age, and frailty makes older adults especially vulnerable in a collision.⁴¹ They are more likely to be killed or injured in a crash

of a given severity than any other age group.⁴² Older adults also walk slower and are more susceptible to pedestrian injuries.

Although less than a quarter of all driving in the United States takes place in rural settings,⁴³ more than half of all motor vehicle crashes occur there.⁴⁴

The more we drive, the more likely we are to get hurt or die in a crash; there is a strong positive relationship between per capita vehicle miles traveled and traffic casualty rates.⁴⁵ Communities with high annual mileage tend to have higher traffic death rates than communities where people drive less. Passengers on buses, light rail, and commuter rail have about one-tenth the traffic death rate as people in cars.

Investments in public transportation and walking and bicycling infrastructure can reduce injuries and deaths. Contrary to popular belief that more walkers and cyclists lead to more casualties, greater numbers of walkers and bicyclists actually decrease the risks.⁴⁶

Indirect Health Effects

Transportation is a lifeline. We depend on it to get to work, school, the doctor's office, the bank, the supermarket, the gym, or a friend's house. People without reliable, efficient, affordable ways to get around are cut off from jobs, social connections, and essential services. Access to transportation, to economic and social opportunity, and to resources for healthy living are inextricably linked. Gaps in all three areas feed on one another in complex ways. Policy reforms that put health equity objectives at the center of transportation planning and funding decisions can reduce these inequities.

Transportation, Income, and Health

As housing and jobs have moved farther apart, the distance has created employment barriers for anyone without unlimited ability to drive. Nineteen percent of African Americans and 13.7 percent of Latinos lack access to automobiles, compared with 4.6 percent of whites. Poverty complicates the problem: 33 percent of poor African Americans and 25 percent of poor Latinos lack automobile access, compared with 12.1 percent of poor whites.⁴⁷ Cars owned by low-income people tend to be older, less reliable, and less fuel-efficient. This makes commuting to work unpredictable and more expensive, at best.

Income is an important determinant of health.⁴⁸ The association between poverty and poor health is well documented. Jobs with good wages, including those in the transportation sector, are essential to sustaining health.

Transportation impacts not only family earnings but also expenses. The cost of getting around takes a significant bite out of household budgets. The general standard holds that a family should spend no more than 20 percent of income on transportation, or the costs will eat into other necessities, such as nutritious foods, and medical care.⁴⁹ The average family in the United States spends about 18 percent of after-tax income on transportation, but this varies significantly by income and geography. For example, low-wage households (earning \$20,000 to \$35,000) living far from employment centers spend 37 percent of their incomes on transportation.⁵⁰ In neighborhoods well served by public transportation, families spend an average of nine percent.⁵¹

Older Americans and People with Disabilities

More than one in five Americans ages 65 and older do not drive because of poor health or eyesight, limited physical or mental abilities, concerns about safety, or because they have no car. More than half of nondrivers, or 3.6 million Americans, stay home on any given day—and more than half of that group, or 1.9 million, have disabilities.⁵² Isolation is especially acute in rural communities, sprawling suburbs, and black and Latino communities. Compared with older drivers, older nondrivers take 15 percent fewer trips to the doctor; 59 percent fewer trips to shops and restaurants; and 65 percent fewer trips for family, social, and religious activities.⁵³

When affordable, high-quality public transportation and safe, walkable streets are

available, older adults take advantage of them. More than half of older adults make walking a regular activity. More than half of older nondrivers in dense communities use public transportation at least occasionally, compared with one in 20 in spread-out communities.⁵⁴

The *Americans with Disabilities Act (ADA) of 1990* significantly expanded transportation options for people with disabilities. ADA required public bus and rail operators to provide accommodations, such as lifts and ramps, to enable people in wheelchairs to ride. But street design in most communities makes traveling to and from bus stops challenging—and often unsafe—for people with disabilities. Paratransit systems, which use vans or shared taxis to transport people door-to-door, are helpful, but many systems are stretched thin and require appointments well in advance.

What Does Healthy, Equitable Transportation Policy Look Like?

Healthy, equitable, transportation policy supports the development of accessible, efficient, affordable, and safe alternatives to car travel, and especially to driving solo. These alternatives enable everyone to walk more, travel by bicycle, and use public transportation more—in other words, to get around in ways that improve health, expand access to opportunity, and reduce toxic pollutants and greenhouse gas emissions.

Healthy, equitable transportation policy is forged and implemented in concert with sustainable land use planning. Together, they encourage and support high-density, mixed-use, mixed-income metropolitan development and affordable housing with good access to transportation options. Together, they focus, particularly, on underserved and economically isolated communities.

Healthy, equitable transportation policy recognizes that income is important to health, and it encourages hiring low-income residents of color for well-paying jobs in transportation construction, maintenance, and service.

Healthy, equitable transportation policy understands the importance of ensuring equal representation. All community members, regardless of race, gender, or geographical location should be equitably represented and involved in making decisions which impact their communities, their infrastructure, and their options for travel.

Because access to healthy foods is integral to good health and because transportation systems are integral to food production and distribution, healthy, equitable transportation policy specifically addresses food access issues, including transportation to grocery stores and food transport practices.

This report draws on the book, *Healthy, Equitable Transportation Policies: Recommendations and Research* commissioned by the Convergence Partnership, a collaborative

of funders. The book describes innovative transportation and land use policies, strategies, and programs built on a foundation of equity and sustainability. It includes six key chapters authored by academics and advocates working at the intersection of transportation, health, and equity. The book is available online at www.convergencepartnership.org/HealthyEquitableTransport.

Three chapters in the book address transportation options:

- Todd Litman, M.E.S., founder and executive director of the Victoria Transport Policy Institute in British Columbia, identifies numerous economic, social, and environmental benefits that can result from **public transportation** improvements. Among them: reduced traffic crashes, improved physical fitness and health, energy conservation, reduced pollution emissions, increased community livability, increased affordability, consumer savings, economic development, and expanded opportunity. Litman contends that improving public transportation is one of the most cost-effective ways to improve public health, and better health is one of the most significant potential benefits of public transportation improvements. Litman identifies policy and planning reforms to create a more diverse and efficient transportation system. Litman recommends developing a strategic vision of high-quality public transportation services, with supportive land use policies to provide basic mobility to people who are socially isolated, economically disadvantaged, or physically disabled, as well as to attract “discretionary” travelers, or people who would otherwise drive for a particular trip.
- Susan Handy, Ph.D., director of the Sustainable Development Center at the University of California at Davis, argues that increasing **walking and bicycling** while assuring safety, particularly for low-income families, children, and older adults, is an

important goal for federal transportation policy. Walking and bicycling, or “active travel,” are low-cost, physically active, and environmentally clean alternatives to driving, yet they represent fewer than 10 percent of all trips in the United States. In addition to expanding specialized programs for active travel, the federal government should assist, enable, encourage, and, in some instances, require state, regional, and local governments to address pedestrian and bicycling needs.

- Catherine L. Ross, Ph.D., the Harry West Chair and director of the Center for Quality Growth and Regional Development at Georgia Institute of Technology, argues that **roadways** are more than transport routes; they are also our primary spaces for civic, social, and commercial enterprise. Roadways—highways in particular—receive the largest share of federal transportation dollars by far. Federal policy has historically emphasized highways designed to move large numbers of cars and freight vehicles at high speeds. Ross argues for greater investments in roadways that integrate physical activity, enrich social interaction, increase safety, and provide transportation linkages in underserved communities. She urges policymakers and others to consider expanded assessments of the effects of roadways on health, through the use of methodologies similar to health impact assessment (HIA).⁵⁵

Three additional chapters offer transportation policy perspectives in key areas that have a significant impact on public health and equity:

- Todd Swanstrom, Ph.D., the E. Desmond Lee Professor of community collaboration and public policy administration at the University of Missouri – St. Louis, makes the case that federal transportation policy can and should address **economic development**, particularly in communities left behind by decades of transportation planning that favored car travel and encouraged

sprawl. Targeted transportation investment can promote economic opportunity and reduce health disparities by (1) improving transportation linkages between housing and employment hubs and between residential neighborhoods and clinics, pharmacies, and grocery stores; (2) encouraging affordable, high-density, mixed-use transit oriented development;⁵⁶ and (3) creating workforce strategies to ensure that jobs in the large, growing transportation sector are open to all, including minority and women workers and contractors. Swanstrom also asserts that while the goals of equity and environmental sustainability are not mutually exclusive, policymakers and advocates must address the short-term needs of low-income families who live in places where driving is essential.

- Kami Pothukuchi, Ph.D., associate professor of urban planning at Wayne State University, and Richard Wallace, M.S., senior project manager at the Center for Automotive Research, argue that federal transportation policy should seek to **increase access to healthy foods**. Today’s transportation networks make large quantities of foods from around the nation and the globe readily available for many Americans, but industrialized agriculture and the concentrated structure of food retail have negative health and environmental consequences for low-income communities, especially people of color, inner-city and rural residents, and immigrant farm workers. For example, urban and rural communities often have fewer and smaller supermarkets than suburban communities (if they have any at all) as well as more limited selections of healthy foods. As a result, residents eat fewer fruits and vegetables and have higher rates of diet-related illnesses. In addition, long-distance food hauling has a disproportionate impact on the air quality and noise levels in poor and minority communities along freight routes. Although food access falls outside the traditional realm of transportation policy, improved public transportation, transit

oriented development, and cleaner methods to move freight can increase access to healthy foods in underserved communities, reduce air and noise pollution, and foster local, sustainable agri-food systems.

- Larry Cohen, M.S.W., Leslie Mikkelsen, R.D., M.P.H., and Janani Srikantharajah, B.A., of Prevention Institute argue that traffic crashes are preventable and that federal transportation policy must make **safety for all travelers** a priority. Traffic crashes rank

as the leading cause of death for people ages one to 34 and contribute to unnecessary human, social, and economic costs. Resources should be directed to communities with the least infrastructure to support safe walking, bicycling, and public transportation use and continue to support effective vehicle safety and occupant protection strategies. Traffic safety is an important strategy not only to reduce injuries and death but also to encourage physical activity, improve air quality, and increase transportation accessibility.

The Federal Transportation Legacy and Challenges Ahead

Transportation in America is a federal system, not a centralized, national system. Federal policy plays a critical role, not by dictating practices but by enabling and encouraging innovation by states, regional transportation organizations, transit operators, and other agencies. This happens in several ways.

First, the federal government sends billions of dollars for transportation to states and localities. For example, the *American Recovery and Reinvestment Act* provides nearly \$50 billion to build and repair roads, bridges, railways, and ports. The current surface transportation bill, *SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users)*, set to expire in September 2009, guaranteed \$244.1 billion over six years. These dollars, in turn, leverage direct infrastructure investments by state governments, local governments, and private investors.

Second, the policies and requirements embedded in federal transportation programs influence state and local land use decisions and transportation priorities.

Many observers contend that transportation stands as one of the biggest policy successes in United States history. The *Federal-Aid Highway Act of 1956* and its progeny promoted mobility, which contributed mightily to American growth and prosperity. However, many advocates take a more nuanced view of the federal legacy. They point to the health, equity, and environmental consequences of an ethic that held the faster, the farther, the better, as well as the consequences of policies focused almost wholly on car and truck travel, with little accountability to goals beyond mobility.

Either way, the current transport system is no longer sustainable or fixable by incremental changes such as pilot projects, encouragements, and small incentives. As the National Surface Transportation Policy and Revenue Study Commission, created by *SAFETEA-LU*, wrote in its final report to Congress: “The strong

and dynamic American surface transportation system is becoming a thing of the past.”

At 300 million people, the nation’s population has doubled since the creation of the Interstate Highway System. We will number 420 million by 2050. “Congestion was once just a nuisance. Today gridlock is a way of life,” the commission’s report said. Growing transportation demand threatens to dwarf regulatory and legislative efforts to mitigate its health and environmental consequences. Increases in total vehicular mileage have all but wiped out the gains achieved through hard-won regulations on fuel efficiency and emissions control. Expansion of freeways cannot get us out of these problems; it will only make them worse. The more we have expanded highways, the more traffic we have created. The United States needs multi-modal systems with public transportation that efficiently serves a large segment of the population, using existing streets and highways.

The *Intermodal Transportation Efficiency Act (ISTEA)*, the 1991 version of the federal surface transportation bill, was supposed to lead us there. The act incorporated significant policy change. Since then, the stated goal of federal transportation policy has been to expand access and improve efficiency through an interconnected multi-modal system that supports highways, public transportation, walking, and biking. This goal has yet to be achieved. Funding mechanisms and formulas have continued to favor highway construction and car travel. For example, the allocation formula for the Surface Transportation Program (STP), the largest program within the federal bill, rewards states that consume more gas, have more miles of highway, and have residents who drive a lot.⁵⁷ Alternatives to driving remain underinvested. Approximately 80 percent of the surface transportation bill is allocated for distribution through the Federal Highway Administration for mostly highway programs, while less than 20 percent goes to the Federal Transit Agency for public transportation. Other

modes of travel constitute a minute amount of spending in comparison to highways and public transportation.

Case in point: Walking is the only travel mode that has not had significant declines in casualties in 40 years. Yet only a tiny share of transportation funding goes to infrastructure initiatives that would make walking and biking safer. Walking and bicycling accounted for 8.6 percent of all trips in 2001 but 12 percent of traffic deaths.⁵⁸

Another case in point: Operating costs for public transportation systems present a huge challenge for many communities. Yet federal transportation investment is focused on capital projects. For example, cities with 200,000 people or more may not use grants from the

U.S. Department of Transportation's main public transportation programs for transit operating costs.⁵⁹ In the face of budget shortfalls, local and regional transportation agencies throughout the country have cut service, hiked fares, and deferred maintenance—arguably at a time when people need affordable, reliable links to jobs more than ever.

While federal policy plays a significant role in shaping transportation systems, states and metropolitan regions are also critical agents of change. The new surface transportation bill offers an opportunity to increase support, encouragement, and pressure for integrating land use and transportation planning to promote balanced regional growth, equitable economic opportunity, and healthy communities for all.

A Foundation for 21st-Century Transportation Policy

Healthy, equitable transportation policy is grounded in four principles. These may also serve as benchmarks to assess the impacts of transportation plans on public health, equity, and environmental quality:

- 1. Develop transportation policies and plans that support health, equity, and environmental quality.** Federal, state, and local transportation policies should be aligned with the top health and environmental goals of federal departments and agencies. For example, transportation policies should be aligned with the Department of Health and Human Services' strategic goals to promote health equity and foster the economic and social well-being of individuals, families, and communities. Transportation policies should also support the CDC's commitment to eliminate health disparities and to promote its "healthy people in healthy places" goals.
- 2. Prioritize transportation investments in distressed regions, low-income neighborhoods, and communities of color.** Federal, state, and local transportation agencies should emphasize projects that will revitalize the economy of struggling communities, lower health disparities, and will connect vulnerable populations to jobs, business opportunities, healthy food outlets, medical services, and other necessities. Government agencies must ensure that these projects are financially sustainable by providing adequate funding for maintenance and operations. The jobs associated with transportation construction, maintenance, and service should be available to low-income people and communities of color.
- 3. Emphasize accessibility, instead of simply mobility, in transportation policies and programs at all levels of government as well as across sectors and policy silos.** Transportation systems should give communities wider access to all the things that are necessary for a good life, not to move people faster and farther. The definition of access must also include affordability. If transportation is physically accessible, yet unaffordable, it is not truly accessible. Accessibility-oriented transportation policies can catalyze and support balanced regional growth, walkable communities, the renewal of long-neglected neighborhoods, and street design that makes walking and bicycling safe, popular transportation options.
- 4. Ensure transparency, accountability, and meaningful participation by residents, advocates with diverse interests, and experts from different fields.** State and regional transportation officials and private developers must engage new partners in decision-making and provide the data, training, and resources to allow full, informed participation by the people affected most by decisions and investments. Voices and expertise from local communities, public health, environmental justice, community development, and other arenas can help ensure that transportation plans respond to local needs and deliver health, environmental, and economic benefits broadly.

Policy and Program Priorities to Improve Health and Equity

Government at all levels must consider the health and equity impacts of transportation investments at the beginning of decision-making processes. Public and private transportation investments must be designed to promote health rather than to erode it. The following recommendations can help policymakers and planners achieve these ends:

- 1. Prioritize investments in public transportation, including regional systems that connect housing and jobs as well as local services that improve access to healthy foods, medical care, and other basic services.** Investments should include capital costs as well as costs for maintenance and operations. Because older diesel buses have high emission rates and since bus depots and other facilities are often concentrated in low-income and minority neighborhoods, policies must be in place to ensure that expanded public transportation does not lead to increased exposure to pollutants in these same communities.
- 2. Prioritize investments in bicycle and pedestrian infrastructure to make walking and biking safer and more convenient.** Strategies include complete streets designed with all users in mind, not just drivers; traffic-calming measures; and safe routes to transit and Safe Routes to Schools programs, which create infrastructure and programming to support safe walking and bicycling to bus stops, rail stations, and schools. Targeted infrastructure investments should also support walking and bicycling in rural communities by, for example, improving road shoulders and building trails to town centers.
- 3. Encourage equitable transit oriented development by creating incentives for integrated land use and transportation planning.** Transit oriented development must emphasize affordability and accessibility. It also must incorporate affordable housing and commercial properties that provide jobs, services, and essential goods near people's homes. Because people of all income levels desire walkable neighborhoods and shorter commutes, displacement of longtime neighborhood residents can be an unintended consequence of transit oriented development. Policymakers must ensure that the local residents guide planning and development and that equity is a goal from day one.
- 4. Create incentives and accountability measures to ensure that transportation plans account for their impacts on health, safety, and equity.** New projects must be held accountable for better results. Government investment should support the creation of tools that more sensitively and accurately measure walking and bicycling practices and improved outcomes. Health impact assessment is an emerging methodology to evaluate the effects of policies, programs, and plans on the health of a population and should be considered an important tool. People should also have the right to sue under Title VI of the *Civil Rights Act of 1964* if they suffer disparate impacts from federal transportation investments, and the U.S. Department of Transportation should have the power to withhold dollars if investments are not made equitably.⁶⁰
- 5. Give state, regional, and local government agencies and organizations more flexibility to move dollars among funding categories and to target spending to meet local needs.** Greater flexibility would give communities more leeway to fund walking, bicycling, and public transportation programs. It would also enable communities to invest in fixing, maintaining, and operating local bus and rail systems. Flexibility should be strongly tied to new standards for accountability,

transparency, and inclusion which ensure all people impacted by transportation decisions are equitably represented in the decision-making process.

6. **Prioritize transportation investments in communities with high unemployment and poverty rates to stimulate economic growth and provide access to jobs.** The American Recovery and Reinvestment Act (ARRA) has language to direct resources to struggling and disinvested communities. The new version of the surface transportation bill should include similar language and expand on this commitment by creating strong accountability and enforcement measures tied to achieving equitable economic benefits.
7. **Make sure that jobs and contracts created by federal transportation investments reach low-income people and communities of color.** A Sense of Congress amendment to *SAFETEAU-LU*, passed in 2005, encourages local hiring provisions for highway construction projects. Some projects aim for 30 percent of workforce hours to be filled by employees who live in the community. Local hiring should be made a requirement, not just encouraged. It should also be expanded beyond highway projects to include public and mass transit development. Capital investments should also fund workforce development programs to train local residents for jobs in the transportation sector.⁶¹
8. **Support the development of cleaner bus and truck fleets and invest in freight rail infrastructure to reduce**

greenhouse gas emissions, improve local air quality, promote health, and foster energy independence.

9. **Advance safety for all travelers, with particular emphasis on those at the highest risk of car injuries and death.** Investments should continue advancing known vehicle safety and occupant-protection strategies as well as roadway and community design modifications to protect the safety of pedestrians, bicyclists, drivers, and passengers.
10. **Support policies and programs that increase access to healthy foods.** Promote public-private van and bus systems to shuttle customers to grocery stores. Expand weekend bus service to connect low-income neighborhoods to supermarkets and other food outlets. Invest in safe and affordable transportation for farm and food production workers. Promote sustainable modes of transporting foods from farms to stores as well as policies to increase the viability of local and regional farming.
11. **Give low-income rural communities greater access to public transportation funds from the surface transportation bill providing the opportunity to access employment and education opportunities.** Low-density and long travel distances make developing and operating conventional bus and rail systems financially challenging. Federal public transportation dollars should support economically efficient innovations, such as vanpools and voucher programs.

Conclusion

The authorization of the next federal surface transportation bill can be a starting point for creating many changes Americans say they want: better health, cleaner air, more time with our families, opportunities to connect with our neighbors. The new legislation can also mark an important step toward building a society in which everyone can participate and prosper, and no community is left behind.

Change will not come easily. The car culture has deep roots in America. The interest groups supporting highway investment are powerful and well funded. But advocates and grass-roots activists around the country have demonstrated that change can happen. They have successfully fought for cleaner buses and for public transportation in communities that never had it. They have transformed train stations into centers

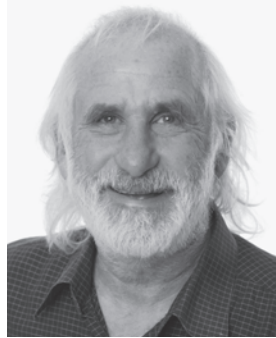
of vibrant community development in disinvested neighborhoods. They have pressured local officials and supermarket operators to provide free bus rides so families can shop for food.

Now is the time to tap into that kind of energy and lift successes like these to the level of federal policy. Leaders, experts, and advocates from many spheres—public health, environmental justice, food policy, agriculture, labor, equity, community economic development, business, and government—must join in partnership to push for broad reform. Collectively, we can gain power and build political support for creating transportation systems that address the big challenges we face and that nourish healthy communities throughout our nation.

Author Biographies



Judith Bell is the President of PolicyLink in Oakland, CA, and oversees policy development, strategic planning, program implementation, and policy campaign strategy; she leads projects focused on equitable development, such as the fair distribution of affordable housing, equity in public investment, and community strategies to improve health. Bell is a frequent speaker, trainer, and consultant on advocacy strategy. Her work at PolicyLink includes access to healthy foods, transportation, and infrastructure investment. In addition, Bell leads PolicyLink work with the Convergence Partnership, a multi-foundation initiative to support equity-focused efforts to advance policy and environmental changes for healthy people and healthy places. For more information: <http://www.policylink.org/JudithBell>.



Larry Cohen is Founder and Executive Director of Prevention Institute, a nonprofit national center that moves beyond approaches that target individuals to create systematic, comprehensive strategies that alter the conditions that impact community health. With an emphasis on health equity, Cohen has led many successful public health efforts at the local, state, and federal levels on injury and violence prevention, mental health, traffic safety, and food- and physical activity-related chronic disease prevention. Prior to founding Prevention Institute in Oakland, CA, Cohen participated in passing the nation's first multi-city smoking ban. He established the Food and Nutrition Policy Consortium, which catalyzed the nation's food labeling law. Cohen also helped shape strategy to secure passage of bicycle and motorcycle helmet laws and to strengthen child and adult passenger restraint laws. For more information: <http://www.preventioninstitute.org/larry.html>.

Acknowledgments

This publication is a collaborative effort including the insights and assistance of numerous individuals.

Our sincerest thanks to the following for their contributions to the development of this report:

- **Todd Litman, Manuel Pastor, Carli Paine, Jason Corburn, and Larry Frank** for their careful reviews of various portions of the report.
- **Fran Smith**, for her skillful writing, editing, and research assistance, as well as her valuable input throughout the development of this report.
- **Victor Rubin, Janani Srikantharajah, and Leslie Mikkelsen** for their insightful review and input.
- **Paulette Jones Robinson, Ariana Zeno, and Erika Bernabei**, for their thorough and diligent copyediting, fact-checking, and proofing.
- The members of the Convergence Partnership, for their guidance throughout this project:

Linda Jo Doctor, W. K. Kellogg Foundation

David Fukuzawa, Kresge Foundation

Allison Gertel-Rosenberg and Rich Killingsworth, Nemours

Laura Kettel-Khan, Centers for Disease Control and Prevention

Angie McGowan and Maisha Simmons, Robert Wood Johnson Foundation

Brian Raymond and Loel Solomon, Kaiser Permanente

Marion Standish, The California Endowment

Notes

- ¹ John King, "Bus Route Closing Devastates Disabled Couple," *CNN*, March 27, 2009, <http://www.cnn.com/2009/POLITICS/03/27/st.louis.no.bus/>.
- ² Henry K. Lee, "Diesel Exhaust Poses Health Risks in West Oakland, Study Finds," *San Francisco Chronicle*, November 16, 2003, http://www.sfgate.com/cgi-bin/article.cgi?file=/c_hronicle/archive/2003/11/16/BAGQE334JL1.DTL.
- ³ Jennifer Langston, "No Easy Access to Fresh Groceries in Many Parts of Seattle," *SeattlePI.com*, May 1, 2008, http://www.seattlepi.com/local/361235_foodvoid01.html.
- ⁴ See <http://www.investininfrastructure.org/>.
- ⁵ President Franklin D. Roosevelt took a similar tack during the Great Depression. Addressing transportation needs accounted for much of the work of the WPA. By 1938, the WPA had paved or repaired 280,000 miles of road and had built 29,000 bridges and 150 airfields, according to Jim Couch, professor of economics and finance at the University of North Alabama and co-author of *The Political Economy of the New Deal* (Williston, VT: Edward Elgar Publishing, 1998).
- ⁶ See the policy platform of the Transportation Equity Network, a national coalition of more than 300 grassroots and partner organizations working to reform transportation and land use policies, http://transportationequity.org/index.php?option=com_content&task=view&id=15&Itemid=32. See also American Public Health Association, *At the Intersection of Public Health and Transportation: Promoting Healthy Transportation Policy*, 2009, <http://www.apha.org/NR/rdonlyres/43F10382-FB68-4112-8C75-49DCB10F8ECF/0/TransportationBrief.pdf>.
- ⁷ National Surface Transportation Policy and Revenue Commission, *Transportation for Tomorrow*, December 2007, http://transportationfortomorrow.org/final_report/.
- ⁸ E. Burgess and A. Rood, *Reinventing Transit: American Communities Finding Smarter, Cleaner, Faster Transportation Solutions* (New York: Environmental Defense Fund, 2009), http://www.edf.org/documents/9522_Reinventing_Transit_FINAL.pdf.
- ⁹ M. Turner, "Transit Oriented Development Revitalizes Chicago Neighborhood," *Race, Poverty, and the Environment* (Winter 2005/2006), <http://www.urbanhabitat.org/files/24.Marcia.Turner.pdf>.
- ¹⁰ See <http://www.cleanandsafeports.org>. Information and resources on the impacts that transporting goods have on health and community life is available from the Trade, Health, & Environment Impact Project, a community-academic partnership, <http://hydra.usc.edu/scehsc/web/Welcome/Welcome.html>.
- ¹¹ For information on authorizations and allocations under *SAFETEA-LU*, the surface transportation bill that expires in September 2009, see <http://www.fhwa.dot.gov/safetealu/factsheets/step.htm>.
- ¹² *Transportation for Tomorrow* (see endnote 7).
- ¹³ P. Latzin et al., "Air Pollution during Pregnancy and Lung Function in Newborns: A Birth Cohort Study," *European Respiratory Journal* 33 (2009): 594–603.
- ¹⁴ W. J. Gauderman et al., "The Effect of Air Pollution on Lung Development from 10 to 18 Years of Age," *New England Journal of Medicine* 351, no. 11 (2004): 1057–87.
- ¹⁵ C. A. Pope III et al., "Lung Cancer, Cardiopulmonary Mortality, and Long-Term Exposure to Fine Particulate Pollution," *Journal of the American Medical Association (JAMA)* 287, no. 9 (2002): 1132–41.

- ¹⁶ American Lung Association, "Highlights of Recent Research on Particulate Air Pollution: Effects of Long-term Exposure," 2008, <http://www.lungusa.org/atf/cf/{7a8d42c2-fcca-4604-8ade-7f5d5e762256}/ANNUAL-AVERAGE-PM-STUDIES-OCTOBER-2008.PDF>.
- ¹⁷ M. Bell et al., "Ozone and Short-Term Mortality in 95 U.S. Urban Communities, 1987–2000," *The Journal of the American Medical Association* 292, no. 19 (2004): 2372–89, http://research.yale.edu/environment/bell/research/files/bell_mortality_jama.pdf.
- ¹⁸ American Lung Association, "Highlights of Recent Research" (see endnote 16).
- ¹⁹ See http://www.arb.ca.gov/research/health/fs/pm_ozone-fs.pdf.
- ²⁰ See <http://www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=44567>.
- ²¹ Centers for Disease Control and Prevention (CDC), "America Breathing Easier," http://www.cdc.gov/asthma/pdfs/breathing_easier_brochure.pdf.
- ²² S. Nicholas et al., "Addressing the Childhood Asthma Crisis in Harlem: The Harlem Children's Zone Asthma Initiative," *American Journal of Public Health* 95, no. 2 (2005): 245–49.
- ²³ W. J. Gauderman et al., "Childhood Asthma and Exposure to Traffic and Nitrogen Dioxide," *Epidemiology* 16, no. 6 (2005): 737–43.
- ²⁴ Meredith Minkler et al., "Promoting Healthy Public Policy Through Community-based Participatory Research," PolicyLink, 2008, http://www.policylink.org/documents/CBPR_final.pdf. See also <http://www.weact.org>.
- ²⁵ K. L. Ebi et al., "U.S. Funding is Insufficient to Address the Human Health Impacts of and Public Health Responses to Climate Variability," *Environmental Health Perspectives Online*, February 27, 2009, doi: 10.1289/ehp.0800088, <http://dx.doi.org/10.1289/ehp.0800088>.
- ²⁶ See <http://thomas.loc.gov/cgi-bin/query/z?c111:H.R.2323>.
- ²⁷ T. Brikowski, Y. Lotan, and M. S. Pearle, "Climate-related Increase in the Prevalence of Urolithiasis in the United States," *Proceedings of the National Academy of Sciences* 105, no. 28 (2008): 9841–46, <http://www.pnas.org/content/105/28/9841.full.pdf+html>.
- ²⁸ Ebi et al., "U.S. Funding" (see endnote 25).
- ²⁹ CDC, "Preventing Obesity and Chronic Diseases Through Good Nutrition and Physical Activity," 2008, <http://cdc.gov/nccdphp/publications/factsheets/Prevention/pdf/obesity.pdf>.
- ³⁰ CDC, "Prevalence of Regular Physical Activity among Adults—United States, 2001 and 2005," *Morbidity and Mortality Weekly Report* 56, no. 46 (November 23, 2007): 1209–12, <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5646a1.h2tm#tab>.
- ³¹ Transportation Research Board and Institute of Medicine, "Does the Built Environment Influence Physical Activity? Examining the Evidence," Special Report 282 (Washington, DC: National Academy Press, 2005).
- ³² S. J. Olshansky et al., "A Potential Decline in Life Expectancy in the United States in the 21st Century," *New England Journal of Medicine* 352, no. 11 (March 17, 2005): 1138–45, <http://www.muni.org/iceimages/healthchp/life%20expectancy1.pdf>.

- ³³ L. D. Frank, M. Andresen, and T. L. Schmid, "Obesity Relationships and Community Design, Physical Activity, and Time Spent in Cars," *American Journal of Preventive Medicine* 27, no. 2 (2004): 87–96, <http://www.act-trans.ubc.ca/documents/ajpm-aug04.pdf>.
- ³⁴ U. LaChapelle and L. D. Frank, "Transit and Health: Mode of Transport, Employer-Sponsored Public Transit Pass Programs, and Physical Activity," *Journal of Public Health Policy* 30 Supplement (2009): S73–S94, <http://www.palgrave-journals.com/jphp/journal/v30/nS1/pdf/jphp200852a.pdf>.
- ³⁵ L. Besser, M. Marcus, and H. Frumkin, "Commute Time and Social Capital in the U.S.," *American Journal of Preventive Medicine* 34, no. 3 (2008): 207–11.
- ³⁶ U.S. Department of Transportation, "Motor Vehicle Traffic Crashes as a Leading Cause of Death in the United States, 2005," Research Note DOT HS 810 936 (Washington, DC: National Highway Traffic Safety Administration, 2008).
- ³⁷ Lawrence J. Blincoe et al., "The Economic Impact of Motor Vehicle Crashes, 2000," Report no. DOT HS-809-446 (Washington, DC: National Highway Traffic Safety Administration, 2002), <http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Communication%20&%20Consumer%20Information/Articles/Associated%20Files/EconomicImpact2000.pdf>.
- ³⁸ CDC, "Web-based Injury Statistics Query and Reporting System (WISQARS)," <http://www.cdc.gov/ncipc/WISQARS/>.
- ³⁹ CDC, "Pedestrian Fatalities—Cobb, DeKalb, Fulton, and Gwinnett Counties, Georgia, 1994–1998," *Morbidity and Mortality Weekly Report* 48 (1999): 601–05, <http://www.cdc.gov/mmwr/PDF/wk/mm4828.pdf>.
- ⁴⁰ J. Pucher and J. L. Renne, "Socioeconomics of Urban Travel: Evidence from the 2001 NHTS," *Transport Quarterly* 57 (2003): 49–77, <http://policy.rutgers.edu/faculty/pucher/TQPuchRenne.pdf>.
- ⁴¹ David A. Morena et al., *Older Drivers at a Crossroads* (Washington, DC: Federal Highway Administration, 2007), <http://www.tfhr.gov/pubrds/07jan/02.htm>.
- ⁴² U.S. Department of Transportation, "National Household Travel Survey," *Older Drivers: Safety Implications* (Washington, DC: Federal Highway Administration, 2006).
- ⁴³ Federal Highway Administration, "National Household Travel Survey," 2001.
- ⁴⁴ Fatality Analysis Reporting System Encyclopedia, <http://www-fars.nhtsa.dot.gov/Main/index.aspx>.
- ⁴⁵ T. Litman and S. Fitzroy, "Safe Travels: Evaluating Mobility Management Traffic Safety Benefits," Victoria Transport Policy Institute, 2006, <http://www.vtpi.org/safetrav.pdf>.
- ⁴⁶ Peter L. Jacobsen, "Safety in Numbers: More Walkers and Bicyclists, Safer Walking and Bicycling," *Injury Prevention* 9 (2003): 205–09, <http://www.tsc.berkeley.edu/newsletter/Spring04/JacobsenPaper.pdf>.
- ⁴⁷ Steven Raphael and Alan Berube, "Socioeconomic Differences in Household Automobile Ownership Rates: Implications for Evacuation Policy," paper prepared for the Berkeley Symposium on "Real Estate, Catastrophic Risk, and Public Policy," March 23, 2006, <http://urbanpolicy.berkeley.edu/pdf/raphael.pdf>.

- ⁴⁸ “Overcoming Obstacles to Health,” Robert Wood Johnson Foundation, 2008, <http://www.commissiononhealth.org/PDF/ObstaclesToHealth-Highlights.pdf>. See also R. D. Wilkinson and K. E. Pickett, “Income Inequality and Population Health: A Review and Explanation of the Evidence,” *Social Science & Medicine* 62 (2006): 1768–84.
- ⁴⁹ “Transportation Affordability: Strategies to Increase Transportation Affordability,” *TDM Encyclopedia*, updated July 2008, Victoria Transport Policy Institute, <http://vtpi.org/affordability.pdf>.
- ⁵⁰ Barbara Lipman, “A Heavy Load: The Combined Housing and Transportation Burdens of Working Families” (Washington, DC: Center for Housing Policy, October 2006), http://www.nhc.org/pdf/pub_heavy_load_10_06.pdf.
- ⁵¹ “Realizing the Potential: Expanding Housing Opportunities near Transit,” Reconnecting America’s Center for Transit Oriented Development, 2007, <http://www.reconnectingamerica.org/public/reports?page=2>.
- ⁵² See http://www.bts.gov/publications/issue_briefs/number_03/html/transportation_difficulties_keep_over_half_a_million_disabled_at_home.html.
- ⁵³ L. Bailey, “Aging Americans: Stranded Without Options,” Surface Transportation Policy Project, 2004, http://www.apta.com/research/info/online/documents/aging_stranded.pdf.
- ⁵⁴ *Ibid.*
- ⁵⁵ Health impact assessments are a combination of procedures, methods, and tools to evaluate the potential health effects of a policy, program, or project as well as the distribution of those effects within a population. See <http://www.cdc.gov/healthyplaces/hia.htm>.
- ⁵⁶ Transit oriented development is a planning and design trend that seeks to create compact, mixed-use, pedestrian-friendly communities located around new or existing public transportation stations. For more information, see Todd Swanstrom’s paper in this series. See also <http://www.policylink.org/EDTK/TOD/default.html>.
- ⁵⁷ See <http://www.fhwa.dot.gov/safetealu/factsheets/stp.htm>.
- ⁵⁸ Pucher and Renne (see endnote 40).
- ⁵⁹ See http://www.fta.dot.gov/funding/grants/grants_financing_3561.html.
- ⁶⁰ Transit Riders for Public Transportation, “Ensuring Non-Discrimination in Transportation Investments,” http://www.publicadvocates.org/ourwork/transportation/docs/TRPT-Ensuring_Non_Discrimination_in_Transportation_Investments_04-08-09.pdf.
- ⁶¹ Swanstrom T. *The Road to Good Jobs: Patterns of Employment in the Construction Industry*, (September 30, 2008), <http://www.umsl.edu/services/media/assets/pdf/study.pdf>.



Lifting Up What Works[®]

PolicyLink

HEADQUARTERS:

**1438 Webster Street, Suite 303
Oakland, CA 94612**

t 510 663-2333

f 510 663-9684

info@policylink.org

COMMUNICATIONS OFFICE:

**55 West 39th Street, 11th floor
New York, NY 10018**

t 212 629-9570

f 212 629-7328

www.policylink.org

Prevention
Institute
Putting prevention
at the center of
community well-being

**221 Oak St.
Oakland, CA 94607**

t 510-444-7738

f 510-663-1280

www.preventioninstitute.org

COMMISSIONED BY:



www.convergencepartnership.org