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**Active
Transportation**

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Living Large Driving Less



What makes a community livable? How about getting rid of cars?

By Tom Vanderbilt

At the risk of sounding like your grandfather, I am about to tell you how I walked to school when I was a kid. It may not have been three miles, through heavy snowdrifts (though, since I lived in Chicago, there were those), but on most days, I walked. It was just what most kids did.

I didn't grow up in a walking paradise--the Web site Walk Score rates my suburban childhood neighborhood a 38 out of 100 on the walkability scale, giving it the blunt designation "car-dependent." Yet my school was only a half mile away, and there were sidewalks, something that was beginning to seem superfluous--deemed too costly or simply unnecessary--to the new communities being built nearby. A tragic fait accompli was set in place.

That my own experience now smacks of an antique exoticism shows just how radically the American landscape has been altered in the past few decades: Our towns and cities cater to vehicles, not to people.

Schools provide one of the best examples. In the early 1970s, slightly more than half of all American children walked or biked to school; today, only 15 percent do. Some of that is attributable to fear, be it of "stranger danger" (although violent crimes per capita have dropped since the 1970s) or of traffic itself (even though vehicle accidents are the leading cause of death in children). And in many cases, new schools are simply too far from homes. In 1969, roughly half of all children lived a mile or more from their school; by 2001 three out of four did.

To imagine a foot-friendly approach, consider the P. L. Robertson Public School in Milton, Ontario, which serves a relatively dense new subdivision in suburban Toronto. Robertson, where virtually all students live within the one-mile boundary deemed walkable, was planned with the ambitious goal of being a "walkonly" school.

Despite the students' physical proximity to the school, getting them to walk there was no easy task, according to Jennifer Jenkins, who works with Canada's Active and Safe Routes to

School program. It wasn't just a matter of adding sidewalks and bike racks near the school, or establishing no-stopping zones to discourage car drop-offs.

Jenkins says it was about shifting behavior: "We're trying to change the social norm from driving to walking." That her program--which essentially teaches children and parents how to walk to school--even exists, she says, is "kind of scary."

Other sweeping changes have rolled through our towns and cities since my childhood. Between 1969 and 2001, the number of vehicle miles traveled--how much the average American drives in a given year--increased more than 150 percent. It's as if our romance with the car has turned into a dependency. What's more, this isn't solely about commuting (which represents only 14.9 percent of all trips taken) but also about "discretionary" driving--optional car trips that we're increasingly coming to see as necessary. McDonald's, for example, began opening drive-throughs at its restaurants in the mid-1970s. The chain now derives 65 percent of its revenues from them.

Compare vehicle miles traveled over the past few decades with American obesity rates during the same period. You will see that they both began to spike upward at the same time and continue to rise in lockstep. A study published in the American Journal of Preventive Medicine found that male residents of Salt Lake City who lived in walkable (denser and older) sections of town weighed an average of 10 pounds less than those who lived in less-walkable (spread out and newer) sections.

All that extra driving--people using a gallon of gas to get a gallon of milk--has turned us into high-octane petro-vores. Between 1960 and '70, the U.S. population grew by 13 percent while gasoline demand rose by 54 percent; the next decade, with the same population growth, gas demand increased by 17 percent.

The shift to sprawling development patterns and the turning away from once-common practices like walking to school are often defended as a matter of "choice"--one, of course, fueled by decades of government laws and incentives. The irony is



that many communities today have no choice when it comes to transportation: We have created a vehicular monoculture. But there are signs that this is changing. First, we seem to be maxing out on just how much driving we're willing to do.

The total number of vehicle miles traveled dropped in 2007 for the first time since 1980. Another sign of change comes from the government. In what it called a "transformative policy shift," the U.S. Department of Transportation announced in 2009 that it would work to foster "livable communities," which were memorably summed up by Secretary Ray LaHood: "Livability means being able to take your kids to school, go to work, see a doctor, drop by the grocery or post office, go out to dinner and a movie, and play with your kids at the park—all without having to get in your car."

This idea of "livability" was immediately subjected to political scrutiny. What was it, and who was the government to decide how people should live? Of course, government already tells people how to live, through zoning regulations. Such laws prevent a chemical plant from setting up camp next to your cul-de-sac, but they may also prevent developers from building denser, pedestrian-friendly neighborhoods in areas used to expansive lots. Even in my own walkable, transit-stocked neighborhood in Brooklyn (whose Walk Score rating is 98), new housing developments are required to add costly parking facilities. And studies show that guaranteed parking places, not surprisingly, lead to more driving.

So, "livability" is a fine program for big cities, but what about smaller communities? As Missouri senator Kit Bond notes, he's "got a lot of constituents for whom livability means having a decent highway." But Beth Osborne, assistant secretary of the Transportation Department, notes that livable-communities programs can benefit towns and smaller cities, citing the department's efforts to restore neglected Main Streets in Missouri and install traffic-relieving trolleys in Maine.

Too often, livability is narrowly defined by such things as house size or price. By this measure, New York City "may be the most unlivable city in the United States," rail and smart-growth opponent Wendell Cox argues. But people tend to downplay how they're getting to that house. As the Center for Neighborhood Technology has shown in its studies of Chicago, the affordability of housing in farther-flung areas is eaten away by higher transportation costs. Not that city dwellers have to renounce cars: Car-sharing programs allow planners to talk about vehicle miles not traveled.

Transportation planner Ian Lockwood once told me he thought it was curious that when people described ideal vacation destinations, they were always, in essence, "livable" communities—whether the Main Street of Disney World or the mossy squares of Savannah, Georgia. Why, then, he asked, do they not seem to want to live that way? But consider the housing market in Denver. According to one report, the value of homes within a half mile of a light-rail station rose by 17.6 percent between 2006 and

2008, while the value of those in the rest of the city dropped by an average of 7.5 percent. The National Association of Realtors, in an April survey of prospective home buyers, found that 77 percent of home shoppers "would look for neighborhoods with abundant sidewalks and other pedestrian-friendly features."

For too long, we've let livability take a backseat to mobility, with negative consequences for health, community strength, and the environment. The projects on these pages show how a sense of balance can be restored. Someday, you may be telling your grandchildren how you used to be driven five trafficlogged miles to school every day, and they'll shake their heads in wonder.

With enough willpower, many of us could abandon the family car for a bicycle, a sturdy pair of walking shoes, or public transit. But the effort is made much easier (and safer) if our communities lay the groundwork. Here are a few ways that cities, towns, and even rural areas can reduce our dependence on automobiles and their polluting fossil fuels.

High-Speed Rail

Sleek trains that race between Los Angeles and San Francisco, Tampa and Orlando, and Milwaukee and Madison remain paper dreams, buffeted by reactionary politics and budgetary woes: \$2.5 billion for high-speed rail was recently axed from the federal budget. But these energy-efficient substitutes for private vehicles and short-haul jets remain a great investment for the planet. California's proposed high-speed trains could reduce carbon dioxide emissions by 12 billion pounds per year by 2030.

Local Transit Systems

Efficient, reliable local transit is key to getting people out of cars. Nearly three dozen light-rail systems operate in North America today; Denver and Charlotte, North Carolina, have particularly good examples. "Bus rapid transit," in which buses run in dedicated lanes, is a low-cost alternative to building train lines. While not as efficient as trains, buses use significantly less energy per passenger mile than cars, provided the buses are at least half full. Simple programs pay off too: Redesigned routes and discounted bus passes dramatically increased ridership in Champaign-Urbana, Illinois (population 140,000).

Incentives and Fees

Instead of giving the oil industry \$4 billion in tax breaks every year, the United States could get financially creative and give people incentives to drive less. Also, offering tax breaks and rebates can steer them toward high-mpg cars. Other tactics include taxes based on annual miles driven and "congestion pricing" (charging higher tolls on crowded roadways and at in-demand parking meters). "Pay as you drive" insurance pricing also discourages driving by basing premiums on a vehicle's annual mileage, a policy supported by the state of California to reduce traffic, pollution, and gasoline consumption. Mobility



Choice, an organization focused on national-security issues posed by oil dependence, proposes that an “oil security fee” be levied per barrel or at the fuel pump.

Smarth Growth

While auto-dependent sprawl shaped the U.S. landscape over the past 50 years, policies that encourage “smart growth” and transit-oriented development seek to put people ahead of cars. Zoning laws that allow denser communities and a mix of residential and commercial uses adjacent to transit hubs make automobiles accessories rather than necessities. For example, at Sacramento Senior Homes in Berkeley, California, 40 residential units were built above ground-floor retail spaces, all adjacent to public transportation--and with solar panels on the roof to boot.

Complete Streets

Why not design streets for everyone who uses them, not just drivers? That’s the thinking behind “complete streets” policies: roads should be made safe for, and attractive to, pedestrians, cyclists, and public-transit patrons. The National Complete Streets Coalition (completestreets.org) includes AARP, the American Heart Association, and environmental groups. Club activists recently helped pass complete streets policies in Minnesota, Dubuque, Iowa (population 57,000), and South Kingston, Rhode Island (population 30,000).

Pedalers and Pedestrians

Designing bike- and pedestrian-friendly infrastructure helps reduce vehicle miles traveled on a large scale and affects residents on an immediate and personal scale. Sierra Club activists recently persuaded Minneapolis officials to stripe two critical corridors for bike lanes to make commuter cycling more appealing. Capital Bikeshare (capitalbikeshare.com) provides a fleet of 1,100 bicycles at 110 transit stations around Washington, D.C. In Memphis--which has a 34 percent obesity rate--a network of walking and biking trails called Greenline connects neighborhoods with downtown and helps residents stay healthy.

High-Milage Rollers

When you’re paying around \$4 a gallon for gas, wouldn’t you like your car to get 60 miles a gallon? The Sierra Club has joined a coalition of organizations to urge federal lawmakers to establish that fuel-efficiency standard, which would cut U.S. oil dependence by at least 49 billion gallons in 2030. At the same time, new greenhouse-gas pollution standards could reduce heat-trapping carbon pollution by 535 million metric tons. Automakers can reach those goals affordably by using lighter materials as well as off-the-shelf technologies like direct injection, dual-clutch transmissions, and stop-start technology, which shuts off an engine when the vehicle isn’t moving. For more information, check out go60mpg.org.

Tom Vanderbilt is the author of *Traffic: Why We Drive the Way We Do (and What It Says About Us)* (Knopf, 2008).

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Building Place – The Key to Healthy, Sustainable Communities

By Dan Burden



Late fall brought me to New York City where I had the good fortune to meet long-time friend, Tony Hiss, a retired writer and editor for *The New Yorker*, and author of thirteen books. It was Tony who inspired me as a young professional. His book, *The Experience of Place*, not only influenced me, but also encouraged many great city makers. Jane Jacobs, urban writer and activist, who describes the essence of cities, shared her inspirations with Tony, and he with her.

We decided to meet at Grand Central Station and there, tucked in the center of humanity, Tony and I discussed many things as we watched people going places. We marveled at the elaborate dance going on around us as that day's half a million travelers moved through the station, accommodating one another. In the heart of one of the world's greatest cities, in its central transportation hub, we watched un-choreographed movement—strangers anticipating and responding to one another—as they went on their way. All age groups were present and the continuous stream of travelers arriving and departing kept a remarkably consistent pace—something that could never happen on any freeway. This great hall, inspired and adorned by artisans, moves more people than Los Angeles' top two freeways combined.

In his newest book, *In Motion: The Experience of Travel*, Tony examines the meaning of travel in our lives. Beginning with the etymology of travel, Tony goes back to its Old French form "traveillier" which is associated with toil, trouble, and torment. I nod as he tells me this, thinking of the modern commuter stuck in rush-hour traffic, the miles of queuing brake lights, and the stress we are all under as we compare the time in the vehicle with the distance traveled. In the past three decades, we have grown traffic

five times faster than our population, I tell Tony, but our network of new streets has increased by 5 percent. Given these figures, the torment of travel is likely to get worse for many. Americans have expressed their angst and displeasure; collectively we spend more minutes on our commute than on our vacations. This eats away at everything we do, including how much time we spend as volunteers.

As far back as 1086 in England, in an ambitious census, it was recorded that those who worked away from home needed twenty minutes to reach their fields or pastures. There must be magic in this number. Even today, this is close to our average commute time (25.1 minutes, each way). During our conversation, Tony speaks of making all trips richer experiences. I agree. Research shows that driving to work keeps blood pressure elevated for two hours afterwards. A walk or bike ride, on the other hand, is good for the heart.

Place Affects Who We Are

Our conversation has this ebb and flow—friends sharing the details of their work with one another, recognizing the similarities that bolster and validate what the other has been doing. In the anteroom of Grand Central Station's Oyster Bar, Tony whispers into the wall and his voice carries to where I stand, despite the dozens of people between us. Surrounded by thoughtful, inspiring, functioning design, Tony says, "The places where we spend our time affect the people we are and who we become." He later adds, "The relationship with the places we know...is a close bond...a continuum with all we are." I believe this is true.

After lunch, we began walking around the city. As we walked, we talked about the influencers of cities. Tony, William

"The places where we spend our time affect the people we are and who we become."



Hoolingsworth “Holly” Whyte, an American urbanist, and Jane Jacobs focused their writing on place and profoundly influenced planners and designers—though they were not planners or designers. Holly, an observer of life, described in detail how and why we use spaces the way we do—the open space between buildings, streets, parks, plazas, parking lots. Jane, taking inspiration from Holly, dove into the complexities, joys, delights, and gifts of a functioning city. She noted how urban renewal experts, people with shallow insights, experts in only one field, and many others who didn’t even care about where people lived, or how, became the destroyers of cities. Through careless planning, the life went out of some great cities. Jane, Holly and Tony, the great defenders of place, remind me that each of us—every person, no matter the background—can improve where and how we live.

As I walked through the city with Tony, then later with my 26-year old daughter, Juli, I was introduced to lively and quiet places, some of their favorite spots. We visited High Line Park, one of the newest places in the city, where a raised freight line abandoned decades ago, has been transformed into a park which is filled with people—children playing, lovers holding hands, people watching people http://www.mml.org/resources/educater/forums/5-15-08_forum.html, all enjoying being there. Below, Chelsea Market bustles with activity.

The High Line Success Story

The story of the park is a wonderful one. The High Line was originally constructed in the 1930s, to take freight trains off Manhattan’s streets. Owned by the city of New York and operated under the jurisdiction of the New York City Department of Parks & Recreation, it is the “Friends of the High Line,” citizens and activists, who raised the private funds for the park and who oversee its maintenance and operations through an agreement with the parks department. When all sections are complete, the High Line will be a mile-and-a-half-long elevated park, running through the west side neighborhoods of the Meatpacking District, West Chelsea, and Clinton/Hell’s Kitchen. It features meandering pathways, natural plantings, seating, lighting, and it is another example of people making a difference in their community. Friends of the High Line was founded in 1999 by two neighborhood residents, Joshua David and Robert Hammond, who advocated for the High Line’s preservation when the structure was under threat of demolition. They worked with Mayor Michael Bloomberg and the New York City council to reverse a city policy of demolition to ensure preservation of the High Line through the federal Rail-Banking program. They also spearheaded the design process for the High Line’s transformation to a public park. As they did this, they included access points from the street level every two to three blocks with elevators and stairs for maximum accessibility. The park and the market, adjacent land forms, one literally above the other, complement each other, provide balance, and offer an outstanding example of residents taking the initiative to improve quality of life for all.

Citizens and Governments Are Both Responsible

I have worked with 3,000 communities in North America, 224 communities and neighborhoods in Michigan, and have learned that we build our streets, villages, townships, cities and regions in three ways. First, we examine the design side of things: we integrate land use and transportation. We maximize sustainability, livability, quality of life, and prosperity when we explore the form, function and character of our adjacent land uses because these things are intrinsically linked. Our block structures, patterns, and layout influence whether people will interact or not, how much time people will spend in cars or outdoors conversing with neighbors. Secondly, and this is the part that is almost wholly overlooked, we engage the public in a meaningful way. We do not just invite the public into the process; we understand that citizens are the community’s greatest resource. Often the best ideas, the ones that have preservation and enhancement at their center, come from the community. Government alone cannot improve quality of life. Each human being has a responsibility to look around and note what works and what does not. Finally, the third step, implementation, reveals the quality of the first two. If the design or the public processes have been shoddy, this is exposed. At best, we have built compromise.

It was back in 1996 when I looked around in disbelief at the careless manner in which we were developing lands. Sprawl yawned across the American landscape. The consequences were numerous and ugly: strip malls, vacated downtowns, long commutes, higher obesity rates, an increase in the number and severity of traffic accidents, segregated housing, reduced personal time, and an overall isolation that was destroying communities and turning us into a population of strangers living in proximity to one another. Communities were unraveling as we were becoming increasingly secluded, locked in personal vehicles and single family homes.

I began working with local governments who realized that their development practices were unsustainable and that the costs associated with maintaining sprawl were destroying budgets. I focused on walkability. Walkability is the extent to which the built environment is friendly to the presence of people walking... and living, shopping, visiting, and spending time in an area. A walkable community is one that allows us to access amenities by walking and this is important because walking remains the cheapest form of transport. The construction of a walkable community provides the most affordable transportation system any community can plan, design, construct, and maintain. We know that walkable communities enable social interaction, encourage physical fitness, and protect our natural resources through sustainable practices. Other benefits often include lower crime rates, higher property values, cleaner air, and a stronger sense of community.

Built to a human scale (i.e. the foot), walkable communities are compact, placing a person at the center of design. The result is an environment where all can live, work, play, and



learn. Walkable communities maximize social engagement; they encourage activity and wellness; they work for children, seniors, and everyone in-between; and they rely on human beings (not their vehicles) as the organizing principle. This is the heart of social equity—our communities work no matter what we earn or what we can afford to buy. Compact design also requires fewer miles of roads, sewers, utilities, and other infrastructure, and allows us to be efficient in our development practices.

Engaging Citizens

A recent study by the University of New Hampshire reveals, “In the age of increasing energy costs and climate considerations, the ability to walk to important locations is a key component of sustainable communities.” While the benefits to our physical health and the environmental implications of walkable communities continue to be studied, the social benefits have not been investigated broadly. In *The Connected Community: Local Governments as Partners in Citizen Engagement and Community Building*, Arizona State University researchers note that civic engagement is either *normative*—based on the idea that building citizenship and community is important for its own sake, or *instrumental*—aimed at the approval or implementation of a particular policy or project. Community is defined as “the social connections of people who feel that they have some common characteristics and who are aware of and care about each other’s welfare.” Similarly, the International City/County Management Association’s 2009 IQ Report noted community as “characterized by a feeling of belonging, of pride, of being part of something important, of being included and not being alone.” Researchers also noted that population distribution patterns over the past half century have weakened community ties and the sense of attachment we have to where we live. They also recognize, “It is hard to have citizen engagement without a sense of community, and it is hard to fashion a sense of community without citizen engagement.”

Each community has its own degree of readiness in dealing with the consequences of sprawl. In the white paper, “What is Social Capital and Why Does it Matter?”, Dr. John C. Thomas states that social capital refers to “community connectedness,” with components of (1) social networks—the extent to which people are involved with other people in social networks, and (2) feelings about reciprocity and trust—feelings that can grow from involvement in social networks. In his research, he notes that social capital promotes higher educational achievement, more effective governments, faster economic growth, and less crime and violence. By being accessible, honest, forthcoming with information, and by creating an engaging public process, the community feels heard from the outset and this allows government agencies to both perpetuate feelings of trust and help channel energy for the greatest good.

How do we encourage citizen engagement and build social capital? Citizen engagement, historically, has been focused on an exchange of information: the community is invited in

when administrators decide that input is needed (or when it is mandated by law) and this is through public hearings, citizen advisory councils, or during a public comment session. In *Public Deliberation: The Managers Guide to Civic Engagement*, Torred and Lukensmeyer (2006), state, “the most successful citizen participation efforts today are those that understand engagement as a series of interrelated, developmental choices that have more to do with ‘what level of involvement’ along the policy development-implementation continuum than any single technique for ‘one-off’ events that fulfill statutory requirement.” Instead of offering a robust public engagement process, many local governments have become “a broker for all information in techniques where people don’t get to hear each other’s point of view.” Yet, a successful public engagement process requires that we 1) clearly state the agenda for a policy or program; 2) provide rationale for where the public will and won’t be involved in the process; 3) address key issues upfront (budgetary or scheduling constraints, for example); 4) ask the community for the engagement techniques that will work best for them; and 5) justify the community engagement techniques throughout. Anything short of this breeds mistrust and discontent.

The Michigan Experience

Across the nation, fringe development has led to vacated downtown centers. This coring of our communities as a result of sprawling land development patterns has eroded place. It is this loss of identity that every community should ultimately fear. As communities become big box stores strung along major transportation corridors, uniqueness is lost, place is lost. And serious consequences ensue. Today, we know that Michigan’s faltering economy preceded the nation’s plunge into this economic downturn. In Michigan, we over-relied on our transportation industry, both in the production of vehicles, and by building roadways that did not help build communities, but induced massive sprawl. We disinvested in our center cities, and invested in an easy auto-supported flight to empty places—our new suburban pattern fully dependent on easy and cheap auto travel. Instead of building economic diversity and strength, we built traffic and dependency. Detroit, Flint, and Saginaw are now symbols of how avoiding basic principles in city making leads to vast consumption of open land, longer commute times, less vacation time to enjoy these surroundings, a crumbling economy, and heavy auto dependence.

In 2010, I worked in Douglas, Durand, Fenton, Harbor Springs, Elk Rapids, Clare, Big Rapids, Fremont, Grand Haven, Lathrup Village, Lapeer, Linden, Spring Lake, Walker, Mt. Pleasant, Grandville, Allegan, Detroit, Tecumseh, Jonesville, Delta Township, Saginaw, Burton, Newberry, Sault Ste. Marie, Oxford, Holland and Frankenmuth, Michigan. These communities are addressing complex land development and transportation planning issues: a historic highway bisecting the community; a failing Main Street; speeding vehicles in neighborhoods and school zones; lack of pedestrian and bicycling facilities; limited network and connectivity; peak hour congestion; sprawling



development; and overly wide intersections, among other issues. In each of these cases, the land development patterns and the transportation systems are out of alignment—something has gone awry—resulting in significant impacts on the community. This is demonstrated through repeated bad behavior on the part of drivers (speeding, shortcuts through neighborhoods, general aggressiveness); in other cases, the whole heart of a community—its economic center—has been cut from the community it was meant to serve.

The good news is that each of the communities understands that they must address land use and transportation together if they are to thrive. Michigan communities must strive to be efficient, effective, and holistic in what they do. They must take on the role of change agents, to overcome the lethargy of ho-hum in governance; to meet the public as they push-back for efficient and responsive governance; to address the corporate, Main Street and Wall Street failings; and the lost social capital. In many of these communities, I am reminded that our response to the conditions we have created will not be solved by one person or one administration acting alone. *AmericaSpeaks*, a Washington D.C.-based non-profit organization whose mission is to “engage citizens in the public decisions that impact their lives,” captures it best: “placing citizens closer to the affairs of government strengthens representation, transparency, and accountability, and can improve results.”

Examples of this desire to better address land use are already coming from Michigan communities. When I think of the tough task all administrators and elected leaders face daily, I want to share the stories of those Michiganders who have inspired and emboldened me. Rich Morrison is one. When Rich and I first met, he was then the community development and economic director for Brighton. Their historic main street had to carry a heavy load of traffic, 21,000 vehicles, in two lanes. An active rail line and a high school both complicated this, sending in surges of stored cars. Standing on a corner in Brighton with Rich, Mayor Kate Lawrence, Police Chief Mike Kinaschuk, City Manager Dana Foster, city council members, Downtown Development Authority members, planning commissioners, engineers, residents and city staff, I suggested two tools to honor the neighborhood: a roundabout to address the traffic, and a pedestrian island near the high school. The elected and volunteer boards were supportive of these suggestions and the city council was bold in taking the lead and moving these projects to implementation. Today, the roundabout is a place of immense beauty and a source of pride for the community. It honors the neighborhood, helps pedestrians, keeps motorists flowing gently but quietly, and sets the tone of expectancy among all motorists in downtowns.

At the time we envisioned this design, it was a bold move, untested, and a career maker or breaker. We all knew this. Though Rich will point to all of those around him who made these things happen, he is largely responsible for the success. I have observed his approach in Mt. Pleasant as well, where he rallies residents and staff, business leaders and activists, and

seeks out experts to complement the resources the community already has. This approach builds social capital and also allows for the most efficient and cost-effective form of government.

The Hamburg Example

Rich also traveled to Hamburg, New York, to learn from one of the most significant transportation re-creations I have had the honor to be a part of: the \$23 million reconstruction of U.S. Route 62 in the village of Hamburg, which received the Innovative Management Award as part of the American Transportation Award series. The reconstruction of Route 62 needed to address severe safety, capacity, and infrastructure deficiencies within the village. This route functioned as both a major truck route and the main street for the village. I worked with residents, business owners, and the New York Department of Transportation (NYDOT) to craft a workable vision that met the village’s needs and met NYDOT’s desire to keep traffic moving as they rebuilt three of the village’s principal roads. The collaborative teamwork between the agency and the community resulted in well-informed and community-valued design alternatives—and it created close bonds with the community that are still strong today. The results of the reconstruction are stunning: accidents have been dramatically reduced in the corridor, congestion has been minimized, and social capital has been increased. Rich visited Hamburg during an event in which current and former village staff, NYDOT, the police and fire departments, business leaders, school officials, and residents were celebrating how the design created place as opposed to destroying it. This example points to Rich’s desire to make an informed decision by seeking out information both near and far, and in this process, building community. He witnessed the fruits of the robust public engagement process that was used in Hamburg.

Let’s Use the Right Public Engagement Strategies

It is clear that in addition to building unhealthy communities, we have also been using the wrong public engagement strategies and techniques. Many decisions have been made in public hearing formats, which turn into screaming matches, bringing out the worst in people. The methods used in Hamburg, New York and Brighton, Michigan brought out the best in people. Hamburg residents poured over aerial maps of their village, while the consultants stood back, observing. It was the residents who drew meaningful new lines, found ways to get in more parking, identified the best new places for buildings, and agreed on which intersections needed roundabouts. The consultants and technical experts answered questions, provided training on place-making and offered examples of best practices, but the community made the choices as a community. In Brighton, the methods were similar, but enhanced with walking audits where we assessed the corridor as a community and envisioned the future together.

We have to be leaders in creating great streets, great neighborhoods, and great places of the heart. We need to start building our communities for and by people to accommodate vehicles— not just for vehicles. In his books, *The Rise of the*



Creative Class and *Who's Your City?*, economist Richard Florida writes, "Place is becoming more relevant to the global economy and our individual lives. The choice of where to live, therefore, is not an arbitrary one. It is arguably the most important decision we make, as important as choosing a spouse or a career. In fact, place exerts powerful influence over the jobs and careers we have access to, the people we meet and our „mating markets“ and our ability to lead happy and fulfilled lives.”

Thinking back to the day I spent with Tony in New York City, I sent him an email because I wanted his take on the following question: How do we create place? He writes, "Place, to me, is all about connectedness, which means strengthening people's connections to each other and to the larger family of fellow creatures with whom we share the planet—and simultaneously enlarging people's capacity to sense and be aware of these connections. This is what grounds us and provides the kind of stickiness (and stick-to-it-ive-ness) that holds us to a particular community. It's a process that works through physical interventions, through concerted social actions, and through changes in awareness all at the same time. To become a place, a community takes on the goal of stimulating the kinds of contacts between people that promote opportunities for caring, cooperating, creative solutions, common purpose, and mutual respect, and that foster the ability to sense and cherish these interactions whenever they occur. Physical locations that serve these functions become the sacred sites of a community; a healthy community has established an enveloping, unobtrusive, and entirely non-coercive network of sacred sites that throw people together and keep re-mixing them day after day." As usual, Tony makes me smile.

Build Place Not Projects

Michigan stands out in my mind among all the rest, as this nation's great hope for the future. Michigan is chock full of great communities with the right pattern and scale to develop walkable, livable communities and to begin to re-create place. We can do this by bringing back a mix of land uses, adding density, focusing on infill development, and creating a built environment that is supportive of local economies and local jobs. It was the people and state of Michigan that changed transportation in this country and Michigan will do it again. The focus this time will be on multi-modal transportation because when a place invites us to switch modes seamlessly—to choose walking, biking, transit, or driving to reach a destination—we know that the transportation system and land uses are in balance. They are working together and reinforcing a sense of place that says, "This is where you belong." Strip malls don't do this; real downtowns do.

To begin the process of building places as opposed to projects, a community needs to look at its best opportunity. Is it a place like High Line Park—where trees growing up through abandoned tracks say "park" to two locals? Does an abandoned hospital or school allow you to create a new community center—or build something very new—a joint police and community

center, like in Milliken, Colorado? How can you use your streets to reinforce place? Each community needs to identify what opportunities it has available, choose its best chance at success, and then energize it through robust community engagement. This creates the hand and toe holds needed to climb up and to the next great place—not project. In doing this, we build social capital, we build the places to shop, to play, for local art work, for jobs, for community gardens, for people to come, to relax, and to enjoy their achievement as a community.

Michigan's state motto is *Si Quaeris Peninsulam Amoenam Circumspice* / *If you seek a pleasant peninsula, look about you*. I have been looking around Michigan for fifteen years. Natural Michigan is stunning and diverse, sustaining the state's top industries of agriculture, tourism, and timber. Given such abundance, it is easy to linger on the magnificence of this Great Lakes state and to give the built environment passing consideration. If we are to improve the health and quality of life for residents and visitors, and build sustainable, vibrant communities, we must turn our attention to improving the built environment by providing quality places that bring us together. We should measure our success not in miles of travel, but in the smiles associated with travel.

Dan Burden is co-founder and executive director of The Walkable and Livable Communities Institute (www.walklive.org), located in Port Townsend, Washington, USA. Dan's efforts to get the world "back on its feet" have earned him lifetime achievement awards from the New Partners for Smart Growth and the Association of Pedestrian and Bicycle Professionals. The League of American Bicyclists named Dan as "one of the 25 most significant leaders in bicycling for the past 100 years." In 2001, Dan was named by *TIME* magazine as "one of the six most important civic innovators in the world." Also that year, the Transportation Research Board of the National Academy of Sciences honored Dan by making him its Distinguished Lecturer. In 2009, a user's poll by Planetizen.com named Dan as one of the top 100 urban thinkers of all time. Dan's work has been featured in coverage by *Newsweek*, *CNN* and *Men's Health*. Dan has nearly four decades of experience helping create livable communities with a focus on non-motorized transportation. He served as the first state bicycle and pedestrian coordinator for the Florida Department of Transportation (1980–1996) and this became the model for other statewide programs. He is a member of ITE.



America Needs Complete Streets

By Dan Burden and Todd Litman

An aging population;¹ rising fuel costs; congestion, health, and environmental concerns; and changing consumer preferences are all increasing demand for walking, cycling, and public transportation.² These trends indicate that an integrated multimodal transportation system is required if we are to meet future travel demands.

Responding to Change

Our current transportation system provides relatively good service for motorists. It is possible to drive to most destinations with reasonable convenience, except under peak conditions. The major transportation problems facing most communities—traffic and parking congestion, excessive energy consumption and pollution emissions, the rate and severity of accidents, and inadequate mobility for non-drivers—can all be addressed by creating multimodal transportation systems that allow the best mode for each trip: walking and cycling for local trips, public transit for travel on congested corridors and for non-drivers, and automobile travel to access dispersed destinations and for carrying loads. Multimodal transportation serves both drivers and non-drivers by allowing mode choice based on the type of trip to be taken. This is the heart of the complete streets movement: Choice is fundamental to improving safety, service, comfort, and performance for all.

Between 1920 and 2000, travel by automobile became the dominant mode of transportation for most communities in the United States. During this period, significant resources were invested in roads and parking facilities in order to accommodate increasing automobile travel demands. However, per capita vehicle travel has stopped growing, and total vehicle travel is projected to be flat in most areas, except those with rapid population or industrial growth.³ Now that the roadway system is mature and growth rates have declined, there is less incremental

benefit from further expansion. (See Figure 1.) Benefits can, however, be expected from redefining our transportation system. In the past, *transportation* meant *mobility*. When we focus on *mobility*, fast, cheap travel is the desired outcome. This focus is incorrect. The ultimate goal of transportation must be *accessibility*—our ability to reach desired goods, services, and activities safely.⁴ Mobility affects accessibility, but so do the quality of transportation options and land development patterns. When we consider accessibility, we see how the modes affect one another. Efforts to improve automobile accessibility, for example, may involve expanding roads and parking facilities and locating activities along major highways, which reduces accessibility for all other modes. Complete streets policies are aimed at balancing access for all modes.

Complete Streets Policy

A complete streets policy

- Includes a vision for how and why the community wants to complete its streets;
- Specifies that the term “all users” includes pedestrians, bicyclists, and transit passengers of all ages and abilities, as well as trucks, buses, and automobiles;
- Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all modes;
- Is adoptable by all agencies to cover all roads;
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way;

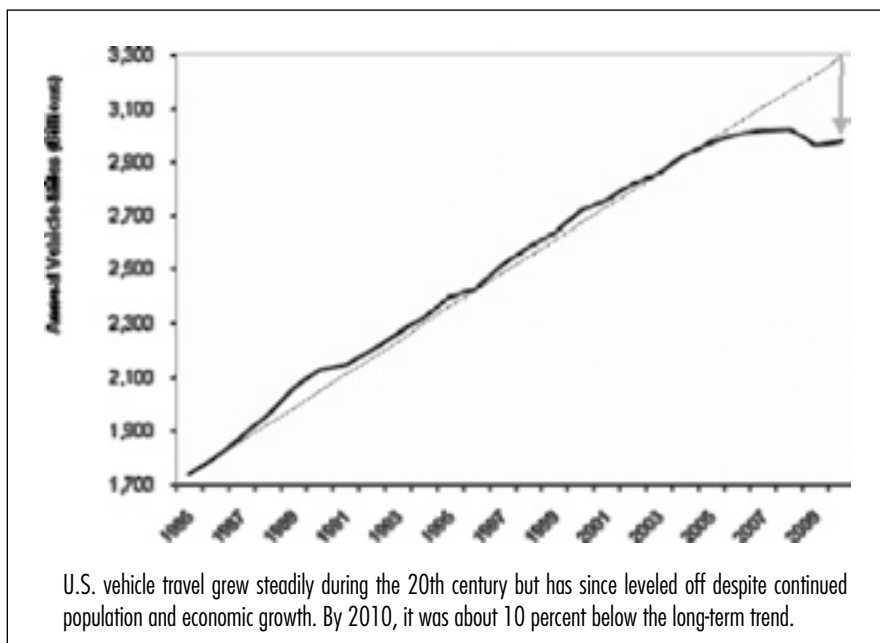


Figure 1. U.S. annual vehicles mileage trends (USDOT 2010). U.S. vehicle travel grew steadily during the 20th century but has since leveled off despite continued population and economic growth. By 2010, it was about 10 percent below the long-term trend.

- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions;
- Directs the use of the latest and best design criteria and guidelines while recognizing the need for flexibility in balancing user needs;
- Directs that complete streets' solutions will complement the context of the community;
- Establishes performance standards with measurable outcomes; and
- Includes specific next steps for implementation of the policy.⁵

In a 2008 article in *ITE Journal*, John LaPlante and Barbara McCann explained how complete streets must focus on policy.⁶ In this article, they stated:

"A complete street is a road that is designed to be safe for drivers; bicyclists; transit vehicles and users; and pedestrians of all ages and abilities. The Complete Streets concept focuses not just on individual roads but on changing the decision-making and design process so that all users are routinely considered during the planning, designing, building and operating of all roadways. It is about policy and institutional change."

Today, more than 200 communities have adopted complete streets policies. In 2010, complete streets policies went into

effect in Minnesota, Michigan, and Colorado. Local city councils, regional transportation commissions and state legislatures across the nation are embracing complete streets policies. Some include supportive measures in transportation funding, development policies, and zoning codes to encourage multimodalism. These measures may include reduced parking requirements, development impact fees in multimodal locations, and targeted reductions in vehicle miles traveled.⁷ Professional organizations and transportation agencies are producing analyses, tools, and guidelines to support complete streets, such as the multimodal level-of-service standards developed by the Transportation Research Board,⁸ which are being incorporated into the new *Highway Capacity Manual*.⁹ Beginning in January 2011, new state legislation in California's AB 1358 requires all California local jurisdictions to plan for the development of multimodal transportation networks that allow users to effectively travel by motor vehicle, foot, bicycle, and transit to access key destinations within their community and the larger region. Michigan's state transportation budget gives funding preference to communities

with complete streets policies and to projects that further the objectives of complete streets. In doing so, California and Michigan are encouraging local communities to adopt their own complete streets policies.

Complete streets policies are central to addressing the following serious problems we face:

- Over the past two decades, we have averaged approximately 43,000 fatal accidents annually, with approximately 2.5 million people injured on our roadways every year.¹⁰ Of the pedestrians killed in 2007 and 2008, more than 50 percent died on arterial roadways, typically designed to be wide and fast, and more than 40 percent of the pedestrian deaths that occurred were on roadways where no crosswalk was available.¹¹ Motor vehicle crashes are the leading cause of death for U.S. teens, accounting for more than one in three deaths in this age group. In 2009, about 3,000 teens in the United States aged 15 to 19 were killed, and more than 350,000 were treated in emergency departments for injuries suffered in motor vehicle crashes.¹² While the loss of life should be the most compelling reason to support complete streets, we also know that traffic crashes cost about \$164 billion annually in property damage and injuries.¹³
- Rates of individual and community health, fitness, and well-being can increase when we build complete streets. According to the American Public Health Association



report *At the Intersection of Public Health and Transportation: Promoting Healthy Transportation Policy*, obesity in the United States is the nation's fastest rising public health problem. According to the Centers for Disease Control and Prevention, 16 percent of children are obese, 12 million are overweight, and 66 percent of adults are overweight or obese.¹⁴ The cost of obesity and inactivity to society is enormous: In

2004, the total cost of being obese or overweight was estimated at \$117 billion, and physical inactivity's health care costs are at \$76 billion per year.¹⁵ From 1969 to 2001, the percentage of students walking and bicycling to school in the United States declined from 41 percent to 13 percent. The majority of these trips have been replaced by parents driving their children to school—resulting in traffic congestion and safety issues around schools and less physical activity for children. The federal Safe Routes to School program, which was created by the 2005 SAFETEA-LU federal transportation bill, provided \$600 million between 2005 to 2009 to make it safer for children to walk and bicycle to school; yet this funding is estimated to serve only 7.5 percent of schools in the nation.¹⁶ Safe Routes to School programs allow communities to conduct bicycle and pedestrian safety education and speed enforcement programs along with assessment for improved planning and engineering around schools. A complete streets policy at the local level can supplement the National Safe Routes to School program to improve conditions around all schools.

- Air pollution is associated with significant health issues, including asthma, respiratory illness, heart disease, and cancer. Asthma is a major public health problem in the United States, with 22 million people currently diagnosed with asthma, 12 million of whom have had an asthma attack in the past year.¹⁷ Four thousand people die each year from asthma-related causes, and asthma is a contributing factor for another 7,000 deaths every year. Asthma prevalence among children has increased an average 4.3 percent per year from 1980–1996.¹⁸ Each year, asthma accounts for 14 million days of missed school days by children.¹⁹ The cost of health issues associated with poor air quality due to transportation is estimated at between \$40 billion and \$64 billion per year.²⁰ The Urban

A recent study by the Texas Transportation Institute found that congestion was responsible for an annual \$78 billion loss in fuel during traffic jams in 2007, and increase from \$57.6 billion in 2000.

Land Institute estimates that carbon emissions from transportation will be 41 percent above today's levels in 2030 if driving is not curbed.²¹

- Nearly one-third of the U.S. population is transportation disadvantaged, which means that they cannot easily access basic needs such as healthy food choices, medical care, gainful employment, and educational opportunities.²² Research shows that half of all non-drivers age 65 and over—3.6 million Americans—stay at home on a given day because they lack

transportation.²³ The economy cannot reach its maximum potential when buyers are unable to reach retail destinations. Additionally, transportation is the second-largest expense for American households, costing more than food, clothing, and health care. Even before the recent increase in gasoline prices, Americans spent an average of 18 cents of every dollar on transportation. The poorest fifth of U.S. families, earning less than \$13,060 per year, pay 42 percent of their income to own and drive a vehicle. Those families earning \$20,000 to \$50,000 spend as much as 30 percent of their budget on transportation.²⁴ The vast majority of this money, nearly 98 percent, is for the purchase, operation, and maintenance of automobiles. Drivers spent \$186 billion on fuel last year, and without improvements to fuel economy, Americans will spend an estimated \$260 billion on gasoline in 2020.²⁵

- A recent study by the Texas Transportation Institute found that congestion was responsible for an annual \$78 billion loss in fuel during traffic jams in 2007, an increase from \$57.6 billion in 2000.²⁶ The 2008 National Household Transportation Survey found 50 percent of all trips in the United States are three miles or less, and 28 percent of all trips are one mile or less—distances easily accessible by walking, biking, or taking a bus or train. Yet, 72 percent of the shortest trips are now made by automobile. In part, this is because of incomplete streets that make it dangerous or unpleasant for other modes of travel. Complete streets can convert many of these short automobile trips to multimodal travel. Simply increasing bicycling from 1 percent to 1.5 percent of all trips in the United States would save 462 million gallons of gasoline each year. Using transit has already helped the United States save 1.4 billion gallons of fuel each year, which is a savings of 3.9 million gallons of gasoline every day.²⁷



The emphasis on multimodal transportation through complete streets is not an entirely new concept. Roadways historically were designed to accommodate all modes, but complete streets policies provide the opportunity to build the political and community will to truly operationalize multimodal planning at the street and neighborhood level. Our transportation planning priorities must evolve if we are to have a better-functioning transportation system. Transportation policies and practices must ensure that roadways are designed to safely, comfortably, and efficiently accommodate all types of users, including motorists, pedestrians, cyclists, children, disabled, the elderly, and public transit travelers.

Nonmotorize travel improvements can reduce local congestion problems by reducing short trips generated when poor walking and cycling conditions cause people to drive just to travel a few blocks.

can occur, including congestion reductions, road and parking cost savings, consumer savings, accident reductions, energy conservation, and emission reductions.

Complete Streets Benefits

Complete streets can contribute to the improvement of traffic performance and provide a number of social, economic, environmental, and health benefits to communities. They respond to and support other efforts to increase transportation system efficiency, including transportation demand management, parking management, improvements to alternative modes, transit-oriented development, and smart growth land use policies. The new FHWA/FTA *Livability in Transportation Guidebook* gives us a clearer picture of the current orientation of federal agencies. The document explores how transportation planning and programs can improve community quality of life, enhance environmental performance, and increase transportation and housing choices while lowering costs and supporting economic vitality. Many of the case studies resolve capacity and operational issues through a multimodal network and systems approach, reflecting better integration of land use with transportation. The guidebook recommends implementation of complete streets policies for both new facilities and through “re-engineering existing roadways to improve vehicle capacity; pedestrian, bike, and transit service; and requiring new facilities to be complete streets.” It also calls for creating more complete street networks by “developing a multimodal network of parallel roadways through existing underused shopping centers and strip commercial development, for local travel and to connect surrounding neighborhoods to jobs, shopping, activities, and each other.”²⁸

While travel impacts taken individually may seem modest, typically affecting just a few percent of total vehicle travel, the effects are cumulative and synergistic.^{29, 30} An integrated complete streets program can reduce per capita vehicle travel by 10 to 30 percent or more compared with data from more auto-dependent communities.³¹

Complete streets policies provide a variety of benefits:³²

- When automobile travel declines, numerous impacts

- The community can benefit from investments that improve walking, cycling, and public transit. Such projects, when combined with new land use patterns, support local economies by leveraging public investments and often include a revival in retail activity, private investment, social capital, and

tourism. Investments typically increase retail sales by an average of 30 percent and land value from 70 to 300 percent.³³ North Carolina DOT studies (USA) have linked added tourism to the inclusion of bike trails in popular mountain, beach, and city destinations, for example.³⁴

- *Livability* refers to the environmental and social quality of an area as perceived by residents, employees, customers, and visitors. This includes safety, health and well-being, economic opportunity, social equity, the local environmental quality, and preservation of valued cultural and environmental resources. Complete streets improve livability.³⁵ Parents allow their children to walk to school; the elderly and disabled regain their independence; and residents and visitors have access to transportation, housing, shopping, and recreational activities. U.S. Transportation Secretary Ray LaHood said it best: “Livability means being able to take your kids to school, go to work, see a doctor, drop by the grocery or post office, go out to dinner and a movie, and play with your kids at the park—all without having to get in your car.”³⁶
- Sidewalks and trails are an important component of the public realm because they are the places where the community can interact. Improving walkability tends to increase community cohesion through positive interactions among neighbors, which in turn tends to improve public safety and security.³⁷
- Improving walking, cycling, and public transit tends to increase affordability and economic opportunity to disadvantaged people, helping to achieve social equity goals.

Conventional roadway evaluation metrics tend to overlook or undervalue many of the benefits of complete streets.³⁸ In a white paper titled *Evaluating Active Travel: Decision-Making for the Sustainable City*, British researchers point out that current planning practices fail to account for the health benefits that result from



more active transportation, resulting in underinvestment in walking and cycling improvements. The researchers go on to state, “Given the need to ensure high-quality decision-making in the transportation sector, it is paramount that contemporary evaluation practices keep pace with the shifting nature of policies that explicitly encourage uptake of walking and cycling.”³⁹

Overall, conventional evaluation tends to overlook many ways that improving walking, cycling, and public transit travel can help solve traditional traffic engineering problems such as traffic and parking congestion.⁴⁰ Nonmotorized travel improvements can reduce local congestion problems by reducing short trips generated when poor walking and cycling conditions cause people to drive just to travel a few blocks. These short trips can create significant congestion since they often involve merging and turning maneuvers that cause traffic friction.

Case Studies

Hillsborough Street, Raleigh, NC, USA: In 1999, a group of more than 500 citizens and other stakeholders mobilized in Raleigh, North Carolina, around Hillsborough Street, the N.C. State University “town/gown” connector, which was then listed as the state’s most dangerous street for pedestrians. At that time, the street was run down and home to a few businesses that appeared to be hanging on by a thread. Through a charrette-driven process, the community learned how street making is integral to their development. By the time the first major phase of the street remake was finished in October 2010, four roundabouts had been installed, a road diet was in place, and streetscape improvements included new medians, more parking, wider sidewalks, and ample crosswalks. Today, the street is complete and alive. Nina Szlosberg-Landis, a former TV documentary producer and the “mother” of the Hillsborough Partnership, noted that more than \$200 million in new mixed-use development investments are coming to the street, traffic is flowing well, and students and motorists are safer and more comfortable. A hearty business environment is in place and growing. Even Raleigh’s own city councilors have been amazed at how the complete streets movement has affected the entire social and political



A major obstacle to complete streets implementation is that many current transportation policies and planning practices favor mobility over accessibility and automobile travel over alternative modes.

processes. Russ Stevenson, at-large city councilor, and Mayor Charles Meeker (who is now tied as Raleigh’s longest-serving Mayor) attribute their success in politics, as well as their interest in walkability and transit, to the Hillsborough Street remake. These leaders consider themselves well versed in how transportation investments can be leveraged to build a sustainable future and a more enjoyable present for the community.

Washington DC, Region,

USA: We sometimes assume that there is an inherent conflict between economic, social, and environmental objectives, but this is not necessarily true. By helping to create a more diverse and resource-efficient transportation system, complete streets tend to enhance economic development as well as provide social and environmental benefits. Complete streets can provide the policy and grassroots support to assist in this change by building streets that people want to live on or nearby.

In a recent presentation, Chris Leinberger, an urban land use strategist and visiting fellow with the Brookings Institute, discussed the challenges of translating complete streets policies into successful on-the-ground projects. Leinberger focused on two areas of Washington, DC’s Metro Orange Line. Twenty years ago, there were only two neighborhoods in the DC region that could truly be described as walkable urban areas: Georgetown and Old Town in Alexandria, Virginia. The expansion of the Metro system in the 1980s and 1990s, along with enlightened local public sector leadership and an innovative private real estate industry, led to a walkable urban development boom. Now there are 39 walkable urban areas in the region, including areas within the DC limits such as Dupont Circle, downtown, the Capitol Waterfront, and those in the suburbs such as Reston Town Center (Reston, VA), Arlington, Virginia, and downtown Silver Spring in Maryland.

Today, the Orange Line is the single most instructive metro line in the country. It is on this line that Arlington and Fairfax Counties chose fundamentally different approaches. Fairfax County elected to take the cheapest option available: running the new line down the undevelopable center of the existing I-66 highway. Arlington County chose, at its



own expense, the harder placement, inserting transit into the center of a declining corridor, pulling the line from the highway and running it through its then-unwalkable and rapidly decaying commercial areas. Over the following decades, development in Arlington's section exploded, with the price per square foot of real estate increasing 200 to 300 percent, which translated into 10 percent of the county's land mass providing 50 percent of the tax revenues. Just over the county border in Fairfax, the metro line went down the middle of Route 66. Looking at aerial photos of the two areas is telling: one is densely developed; the other is empty save for a sea of park & ride lots. These parking lots may condemn the areas around the stations to perpetual underdevelopment without massive subsidies to deck the parking to free up land (though this land is 100 yards from the mid-highway stations) or even more expensive subsidies to put a buildable lid over the highway.

Complete streets are not simply about street design but rather about combining proper land development patterns and proper street designs that fit together. Street connections, block form, and other patterns matter. Land use development and transportation planning decisions cannot be made in isolation from one another. The standard practice should be toward improvement of accessibility and safety and to build sustainable, economically viable communities.

Perceived Obstacles and Risks

A balanced transportation system resulting from multimodal transportation planning is often the most effective way to improve the driving experience while ensuring access to vital resources and reducing the problems drivers face such as traffic and parking congestion, accident risk, and chauffeuring burdens.

A major obstacle to complete streets implementation is that many current transportation policies and planning practices favor mobility over accessibility and automobile travel over alternative modes.⁴¹ For example, a major share of transportation funding is dedicated to roads and parking facilities and cannot be shifted to support other modes or mobility-management strategies, even if they are the most cost-effective transportation system improvement options. The way we traditionally evaluate transportation system performance only considers delays to motor vehicle traffic; the delays that motor vehicle traffic imposes on pedestrians and cyclists (called *the barrier effect* or *severance*) is not generally measured in economic or planning analyses. Generous minimum-parking requirements and other zoning practices force developers to build sprawl rather than compact, mixed-use communities.^{42, 43}

A focus on complete streets policy and projects may appear risky because it requires the entire community to set the vision, but it is actually riskier for communities to continue with current planning practices that undervalue and underinvest in all modes.

Additionally, conventional travel statistics tend to undercount nonmotorized travel activity, which leads to undervaluation and underinvestment in walking and cycling facilities. Travel surveys also undercount nonmotorized travel because they ignore short trips, non-work travel, travel by children, recreational travel, and the nonmotorized links on trips that involve motorized travel. For example, a biketransit-walk trip is often coded simply as a transit trip, and a trip that includes walking several blocks from a parked vehicle to a destination is often coded simply as an auto trip. Nonmotorized travel

is usually three to six times greater than surveys indicate.⁴⁴ The 2009 National Household Travel Survey indicates that walking, cycling, and public transportation represent approximately 15 percent of all travel and often two or three times more on major urban corridors. Inadequate walking and cycling facilities force people to drive for even short trips—sometimes to cross a busy road or to travel a single block—which significantly increases traffic congestion. We need much more investment in pedestrian and cycling improvements on our streets.⁴⁵

A focus on complete streets policy and projects may appear risky because it requires the entire community to set the vision, but it is actually riskier for communities to continue with current planning practices that undervalue and underinvest in all modes and fail to prepare for aging populations, rising fuel prices, climbing obesity rates, and increasing interest in less auto-dependent lifestyles. Americans drove almost three trillion miles in 2008, and many of those trips were very short—yet a vast majority of these trips were by automobile. Congestion is not solely an urban issue. Regions of all sizes have experienced increased congestion, costing the economy \$87.2 billion in hours lost to traffic jams and wasted fuel in 2007 alone. An evaluation of auto-dependent transportation systems found that their per capita congestion costs are significantly higher than systems that provide alternatives to driving.⁴⁶

Complete streets can be considered tools for building communities. One issue that can arise when considering complete streets is insufficient integration with other transportation and land development policies. Adding bicycle lanes on one roadway by itself will do little to increase cycling activity; it must be part of an integrated bicycle program that includes a network of trails and bicycle lanes, bicycle parking and changing facilities, and appropriate education and encouragement programs. Similarly, public transit facilities will provide little benefit unless implemented with other efforts to improve public transit service and encourage transit ridership. However, when properly implemented, an integrated program will provide



substantial benefits, providing a high economic return on investment. This is why the emphasis must be on a complete streets policy as opposed to any project-specific undertaking. Communities can spend years battling about one street-improvement project, and when that is complete, they begin the cycle all over again. A complete streets policy, crafted by the community, ensures that the vision is set by the community and that all street-improvement projects align with the vision the community has set for itself.

The good news is that communities are starting to realize that transportation must address accessibility rather than mobility and they are looking for solutions to improve their transportation networks.

designers have come to believe that if they can only solve the problems of traffic, they will thereby have solved the major problems of cities.

Cities have much more intricate economic and social concerns than automobile traffic. How can you know what to try with traffic until you know how the city itself works, and what else it needs to do with its streets? You can't.

This was 1961. Today, a significant portion of our transportation dollars continue to go

According to a new report by the Political Economy Research Institute at the University of Massachusetts–Amherst, building bike lanes, pedestrian projects, and bike boulevards creates more jobs per million dollars spent than road repairs and road resurfacing projects.⁴⁷ American Recovery and Reinvestment Act investments in public transportation created almost twice as many jobs per billion dollars invested as highway projects—16,419 versus 8,781 job months. Additionally, a \$100 million investment in Portland's streetcars helped attract \$3.5 billion in private investment.⁴⁸ We cannot afford to squander our transportation investments. The benefits of complete streets can be vast. Complete streets can improve safety. Complete streets can target obesity rates by encouraging walking and bicycling for transportation and health. Complete streets can lower transportation costs for families. Complete streets can reduce oil dependence and carbon emissions. Complete streets can foster strong communities and build social capital. Complete streets can offer all people access to goods, facilities and community resources. Syndicated columnist Neal Pierce said it best in a recent column: "The old formula—easy mortgages, pro sprawl land patterns, almost total automobile dependency—was overturned by the Great Recession. The excessive resources aren't there to go back to."⁴⁹

to roads designed for a single use, exacerbating the problems associated with sprawl and contributing to the health and economic problems we face as a nation. The good news is that communities are starting to realize that transportation must address accessibility rather than mobility and they are looking for solutions to improve their transportation networks. A complete streets policy can help direct those dollars toward streets that support a broader range of social, environmental, and community-building goals while improving accessibility for all.

Conclusion

Jane Jacobs, author of *The Death and Life of Great American Cities*, stated that we were overbuilding our cities for our cars, stretching our cities out, making vehicles required for travel. She wrote:

"Automobiles are often conveniently tagged as the villains responsible for the ills of cities and the disappointments and futilities of city planning. But the destructive effects of automobiles are much less a cause than a symptom of our incompetence at city building.

The simple needs of automobiles are more easily understood and satisfied than the complex needs of cities, and a growing number of planners and

Dan Burden is co-founder and executive director of The Walkable and Livable Communities Institute (www.walklive.org), located in Port Townsend, Washington, USA. Dan's efforts to get the world "back on its feet" have earned him lifetime achievement awards from the New Partners for Smart Growth and the Association of Pedestrian and Bicycle Professionals. The League of American Bicyclists named Dan as "one of the 25 most significant leaders in bicycling for the past 100 years." In 2001, Dan was named by *TIME* magazine as "one of the six most important civic innovators in the world." Also that year, the Transportation Research Board of the National Academy of Sciences honored Dan by making him its Distinguished Lecturer. In 2009, a user's poll by Planetizen.com named Dan as one of the top 100 urban thinkers of all time. Dan's work has been featured in coverage by *Newsweek*, *CNN* and *Men's Health*. Dan has nearly four decades of experience helping create livable communities with a focus on non-motorized transportation. He served as the first state bicycle and pedestrian coordinator for the Florida Department of Transportation (1980–1996) and this became the model for other statewide programs. He is a member of ITE.

Todd Litman is founder and executive director of the Victoria Transport Policy Institute (www.vtpi.org), an independent research organization dedicated to developing innovative solutions to transport problems. His work helps expand the range of impacts and options considered in transportation decision making, improve evaluation methods, and make specialized technical concepts accessible to a larger audience. His research is used worldwide in transport planning and policy analysis.



Mr. Litman has worked on numerous studies that evaluate transportation costs, benefits, and innovations. He authored the *Online TDM Encyclopedia*, a comprehensive Internet resource for identifying and evaluating mobility management strategies; *Transportation Cost and Benefit Analysis: Techniques, Estimates and Implications*, a comprehensive study which provides cost and benefit information in an easy to apply format; and *Parking Management Best Practices*, a comprehensive book available on management solutions to parking problems. He is a member of ITE.

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The Role of “Alternative” Transportation Toward a New Vision of America

By Christopher B. Leinberger

The surface transportation policy at the US federal level and nearly every state is very simple to understand; the dominant policy is to build and maintain roads for cars and trucks. There is also a very distant secondary policy for what is dismissively called “alternative” transportation; rail and bus transit, biking and walking. The Federal-funding split has been roughly 80% road-based and 20% “alternative.” Most state policies are nearly 100% road-based transportation.

The logic for this is that for the bulk of the post-World War II era, the most common measure of highway usage, vehicle miles travelled (“VMT”), correlated one-to-one with GDP growth, as shown in the graph below. While causality has never been

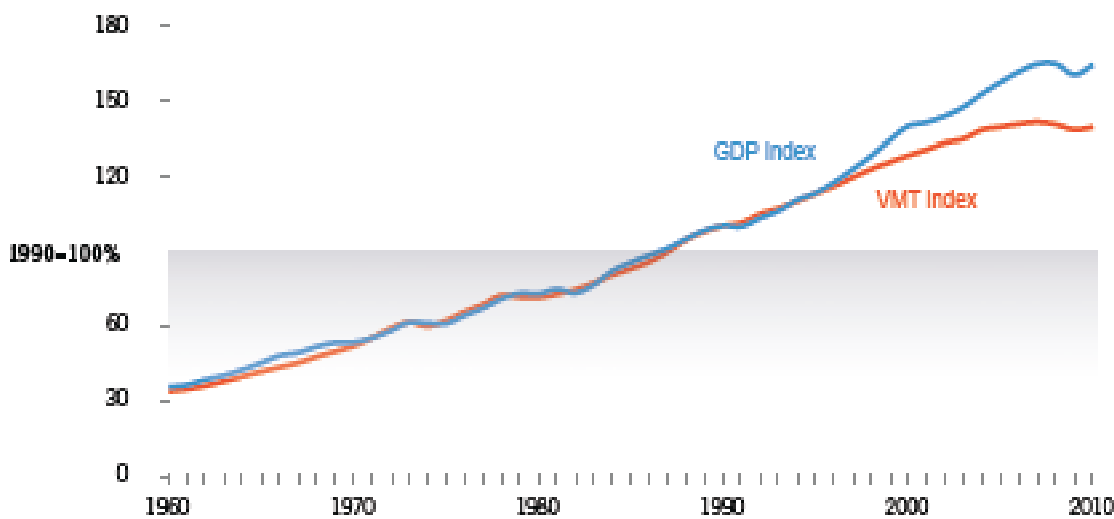
the converse of this premise, as we grew the economy, we drove more. It did not matter which was the independent variable and which was the dependent, the correlation was strong enough to make it the basis of US transportation policy.

The not well-understood reality that backs up this government policy is that for the second half of the industrial age, the post-World War II period of time, the economy was in fact car-based. My estimate is that about 40% of all jobs, direct and induced, were related to mining the raw materials for, manufacturing, selling, fueling, maintaining, financing, insuring and providing the roads for cars and trucks. The American car-based industrial strategy was adopted by war-devastated Europe, followed by

Japan, Korea and more recently China and India. As Americans in the 1950s were driving to the advertising jingle, “See the USA in Your Chevrolet”, they were making themselves wealthier.

The irony was that the US had the longest and best run passenger rail system in the world in 1945, even more ironically Los Angeles was at the top of the list worldwide. Bikes were an accepted form of short trip transportation. As any photograph of 1940s American urban life attests, people-

packed sidewalks and jammed roads filled with bikes, trolleys and cars. Before 1945 it was an entirely different way of living than we have today in the vast majority of metropolitan America.

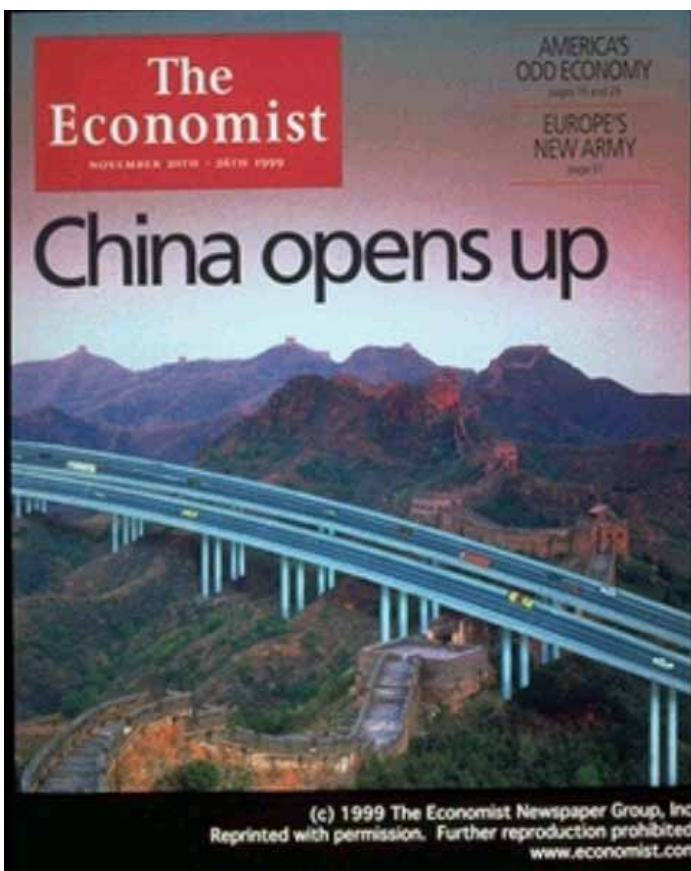


Data Sources: VMT: US DOT, BTS, Table 1-32: US Vehicle Miles, FHWA Traffic Volume Trends August 2010. GDP: BEA National Income and Product Account Table, Table 1.1.6 Real GDP, Chained (2005) Dollars

proven, something academics hold out as the holy grail of social science, the correlation has been so compelling that there was no reason to question it. As we drove more the US got wealthier. Or



The transformation from a transit, biking and walking transportation policy toward a car and truck policy in the Post-World War II era is well known. With great rapidity the transportation options that dominated urban life for 10,000 years of city building (walking) and the previous 100 years (biking and transit) became officially designated as “alternative” transportation. Within 17 years, the longest passenger rail system in the world in Los Angeles was completely torn out. Bicycling was ghettoized as an elite sport. Walkers were viewed with suspicion...poor people sneaking into prosperous suburbs to steal your property and worse. If your neighbors saw you biking or walking, it was assumed you either had car trouble or had lost your economic standing; either way it was embarrassing.



Similar demotion of the primary historic ways of urban transportation took place in most economic recovering and developing countries at some point in their industrialization. By the 1960s, biking around most European cities had a negative social stigma that you had not yet recovered from the poverty that followed the war. The Chinese had been renowned for the millions of bicycles that dominated their urban streets in the late 20th century. By the early 21st century, most Chinese cities banned bikes on roadways, giving over urban right-of-ways to only cars and trucks. The November 1999 cover of the *Economist* demonstrated foresight about China’s urban future, though actually rather easy to predict with so many past precedents, showing a freeway passing over the Great Wall.

Yet starting in the 1980s, Europe rediscovered the urban, environmental and health benefits of biking and walking. Copenhagen and Amsterdam now lead the world in their bike mode split, in spite of their harsh and dark winters, as they have recognized that a multi-modal approach to urban surface transportation is extremely economically productive, among many other benefits. Europeans have rediscovered that historic transportation options can be successfully blended with the oft-times convenience of cars and trucks. How can Americans push the fast forward button to reach the conclusion that a balanced portfolio approach to transportation is as important for our metropolitan areas as it is for your personal investments?

It starts with understanding that *transportation drives development*. Urban historians understand this premise starting from the layout of newly established Roman cities, followed by virtually all subsequent urban development through the Middle Ages, Renaissance and Enlightenment. The transportation system a society selected dictated the resulting urban form. Horse-powered transportation for the well to do and walking for the rest predominated during the first 10,000 years of city building resulting in the building of walkable urban places.¹ Even the introduction of commuter rail in the mid-19th century merely created dense walkable stations in the new “Uptowns” and suburban towns they helped create.

It was only with the truly revolutionary invention of the car and its eventual mass production, making cars available to the middle and working classes, that the form of cities fundamentally changed in a way never experienced before. The emergence of drivable suburban development, something never seen in urban history, became not just a new option but the *only* option for America and much of the rest of the industrializing world. The lessons and form of 10,000 years of city building were thrown out and forgotten. This was particularly the case for the US, which for 100 years was the largest car and truck market in the world, only losing the title to China a few years ago.

It was inevitable that industrial societies, using cars and trucks as the foundation of their economic strategy, would initially marginalize “alternative” transportation. It had to happen as a part of the industrialization process and it is also what the market wants early in a country’s industrialization process. A working class family living in a Mumbai slum, dependent upon crowded and dirty transit as well as bikes and walking, will certainly dream of a car-dependent, low density lifestyle. This is just what the post-war experience was in the US, so why should it be any different elsewhere? The question is what happens after a few generations of middle class existence has been enjoyed? This question is particularly pertinent for Americans, who until recently had appeared to be resistant to getting out of cars and leaving low-density suburbia.

Europe certainly has shown how relatively recent (re-) industrialization allows society to evolve first to a drivable suburban world and then beyond to a more balanced transportation



system offering a complex set of metropolitan land use and lifestyle options. However, Americans are much more provincial, protected and isolated by two large oceans. Lessons from Europe instantly get discounted and are branded as effete (remember the harshest criticisms of presidential candidate John Kerry was that he spoke French...fluently!). So the major question of the early 21st century is how will American public policy change to allow for more transportation, land use and lifestyle options than we now have in most metropolitan areas?

The answer is to propose a new vision of how to live an economically and socially rich life that multiple transportation options allow one to enjoy.

Learn from the Most Recent Past Vision

This may sound difficult to do but it is really taking a page out of the brilliant marketing strategy of General Motors, the major promoter of the drivable suburban lifestyle in the first place. At the 1939-40 New York World's Fair, GM seduced the country and the world with a new way of living. GM's *Futurama* was the most visited exhibit of the most successful World's Fair ever. Over 10% of Americans visited *Futurama* and many times that number read about it in *Life*, *Look* and *The New Yorker* magazines. They saw the low-density, car-driven, suburban dreamscape projected for the near future of 1960. This vision percolated during the war years and emerged as the unquestioned means of rebuilding the country when the GIs came home.

The domestic policy put in place in the 1940s, and still in place today, made drivable suburban development the only legal way of building a financial system that would only lead to the newly built suburbs and massive subsidies for low-density infrastructure, mostly the roads. Domestic policy is used to social engineer a desired outcome. The *Futurama* domestic policies lead to the very outcome that was promised. One could argue that the drivable suburban domestic policy was the largest social engineering project in American history. A way of life the market wanted and that made the economy boom...as the *Futurama* narrator said to those leaving the exhibition, "*all eyes to the future.*"

So the challenge today is to promote a new vision of how Americans can live, work and play that is equally compelling as the *Futurama* vision was to our grandparents and great-grandparents. It is a vision that includes meeting all of one's needs conveniently within walking, biking or transit distance; that walking and biking are safe and the default option for getting around. Cars are available for trips that are most convenient for cars; hauling large loads, visiting out of the way destinations, taking meandering road trips for pleasure, providing instant flexibility for business purposes. Yet no one would be chained to a car for every trip outside the home, as is the case today for most Americans.

This future vision perfectly aligns with the existing knowledge economy. As the graph above shows, the GDP/

VMT correlation no longer holds since the mid-1990s as the country was growing into the new knowledge economy. Cars and trucks are not needed to ship software from walkable urban or even home-based work places. The new vision is even more aligned to the probable next economy, the experience economy. Experiences that are demanded are generally wilderness-based or urban-based. The first major experience industry is tourism, currently the largest industry in the world economy. Pick up the Sunday Travel section of any newspaper and it is split between wilderness travel (my guess about 30%) and urban travel which is the major destination. No one in history has gone on vacation to a strip mall or subdivision.

The other major step is to remember the role transportation plays in building our metropolitan areas, i.e., transportation drives development. Just as a subdivision proposed on a farm field would never be built if there was not a road built first to get customers there, policy makers need to understand that great walkable urbanism can not emerge without first building the rail and bus transit, bike lanes and walking infrastructure it requires. The best way to convey this is to point out that the goal of building transit, bike lanes and sidewalks is NOT to move people and goods. The *goal* is economic development; the *means* is moving people.

My research shows there is pent up demand for walkable urban development in the US that will take at least a generation to satisfy. This pent up demand is shown by revitalized walkable urban places that were pretty much slums 30 years ago, like Dupont Circle in DC, German Village in Columbus (OH), Virginia Highland in Atlanta and Capitol Hill in Seattle. These places are now the highest priced real estate in their metropolitan area on a dollar-per-square-foot basis. This also points out the need for an aggressive affordable housing policy to allow a broader number of Americans to enjoy this way of living.

There are many other reasons for Americans to fall in love with the walkable urban future vision, including health, social, environmental, energy security, foreign policy and educational benefits. Yet the easiest way to convey this vision in the aftermath of the Great Recession, where the collapse of the drivable suburban fringe was the catalyst of the economic collapse, is a vision of economic prosperity. The American economy is bumping along at a two percent growth rate, far less than required to lower high unemployment. The reason for this poor economic performance is the country is not building the transit, bike and walking infrastructure that will drive the development of walkable urban places in our cities and suburbs. Building the drivable suburbs in the late 20th century was the foundation of the economy then. Building walkable urban places will be the economic foundation of the early 21st century. The majority of the demand for walkable urban development will be satisfied in the suburbs; so it is both the redevelopment of our central cities *and* the transformation of the suburbs that is required.

This vision is bolstered by the underlying market demand for a *Seinfeld*, *Friends* and *Sex and the City* inspired option of



how to live, work and play. This vision need not demean the now-dominant drivable suburban way that most Americans live today. The new vision just points out that we have overbuilt that approach and the market now wants different options.

Best Defense, “No Be There”

The environmental benefits bear highlighting. The debate about how to address climate change has become stalled in the US. But even when it was acceptable in Washington to discuss reducing green house gas emissions, the entire debate was about technology, efficiency, alternative energy sources, carbon taxes, cap and trade, etc. These are all supply-side measures to increase the efficiency of providing and using energy and thus reducing green house gas emissions. However, there is the possibility that even if these measures were implemented, the Jevons Paradox might take effect. Named for the 19th century economist, William Stanley Jevons, he postulated that as energy efficiency increases, the net effect is that consumers and businesses will find more ways to use energy and emit GHGs. As we become more efficient, we just plug in a second refrigerator and more computers.

Unfortunately the climate change debate has nearly entirely ignored demand-side mitigation. Recent research by The Center for Clean Air Policy, The Center for Neighborhood Technology and Peter Calthorpe’s most recent book, *Urbanism in the Age of Climate Change*, point out the benefits of the demand mitigation approach. The built environment (real estate and infrastructure) and the transportation systems we use to get around our buildings consume over 70% of all energy and emit about the same percentage of green house gas emissions. Households moving from a conventional low density, drivable sub-urban lifestyle (house fully exposed to weather, driving for nearly all household trips) to this walkable urban lifestyle (shared common walls and walking, biking and transit for most trips) can cause a major change. The household moving to this walkable urban lifestyle can drop energy usage and GHG emissions by between 50-80%. Getting this reduction from the largest category of GHG emissions makes the demand mitigation approach the most effective solution by far.

The 1984 classic movie, *The Karate Kid*, has a scene that encapsulates this approach. In the movie Daniel, the transplanted high school student, asked his Karate mentor, Mr. Miyaki, how he would stop being beat up by the toughs at school. Mr. Miyaki’s response was “best defense, no be there.” The best way to reduce GHG emissions, is to live a lifestyle that by its very nature reduces energy use and consequently emits fewer GHGs.

This vision is contagious. Once exposed to great walkable urbanism, allowing the freedom of using transit, a bike but especially walking, to get to most daily needs leads to the demand for more of these places and leads to enjoying the journey as much as reaching the destination. This lifestyle is not for every one at all phases of their lives but it is where the pent up market demand is today and for the foreseeable future. We need to

build out the second half of our transportation systems, making “alternative” transportation mainstream again, while rebuilding the existing roadway network. This fit will give the market what it wants so much, walkable urban places. As the narrator said upon leaving the *Futurama* exhibit, “*all eyes to the future.*”

Christopher Leinberger’s expertise includes downtown redevelopment, real estate, financing, and strategic planning for downtowns and suburban centers. He directs the University of Michigan’s real estate graduate studies.

His most recent book is *The Option of Urbanism, Investing in a New American Dream*. He is the author of *Strategic Planning for Real Estate Companies* and has contributed chapters to 12 other books. He is an Op-Ed Contributor to the *The New York Times*, writes regularly for *The Atlantic Monthly* and numerous other magazines. CNN, National Public Radio, Atlantic Cities Channel, Washington Post, among others, have profiled him. Leinberger was voted one of the “Top 100 Urban Thinkers” in a 2009 poll conducted by Planetizen, the international urban planning website. He was the 2010 William H. Whyte Urbanism Award winner by Partners for Livable Communities.

Leinberger is a graduate of Swarthmore College and the Harvard Business School and lives in Dupont Circle in Washington, DC.

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- 1 Water-based urban transportation sometimes played a role when possible. And certainly the need for city walls confined urbanism for most of the past 10,000 years but even after the walls were dismantled in the 17th and 18th centuries, a walkable urban form predominated.

The Sustainable City and Biking: Implications for Health, Environment, and Economy

By John I. Gilderbloom, PhD
Brian O'Neill, MUP
Natasha DeJarnett, MPH
Zachary Kenitzer, MPA



Introduction

If our planet has a chance to survive it will be because we chose to get out of our cars and use active transportation such as walking or riding bikes. Our University Community and nearby neighborhoods have a great opportunity to lead by example in the city of Louisville and adopt a pro-cycling infrastructure on campus. This would allow the city as a whole to witness the positive impact of biking on personal health, environmental protection, community development, and economic growth.

Our study shows that individuals will use biking as more than a means for recreation when the proper infrastructure is built. Increasing bicycle ridership promotes calmer and less congested streets, and because of more activity on the street, a reduction in crime. Residents of neighborhoods that encourage biking by providing bike lanes and other cycling infrastructure could potentially save up to \$8,000 per year by ditching their cars and commuting by bike. Not only will they have more money in their pockets, they will improve their health with cycling as a built-in commuting exercise. Furthermore, those who use alternative transportation will use their savings to improve their quality of life and support the community by improving their housing and purchasing goods and services locally, fostering a greater sense of community and increasing property values.

Using U of L as an example, our study shows that by choosing to bike, an individual could save up to \$32,000 over a four-year period by foregoing the purchase of a car as well as the cost of maintenance, insurance, fuel, and parking permits. By providing a dedicated bicycle lane for students, staff, and faculty who live in close proximity to the university and have a willingness to commute by bicycle, a \$68 million savings could be generated

within the community. These savings would greatly benefit the local economy by creating opportunities to reinvest money in homes and to support local businesses.

The goal of this project is to encourage the adoption of a comprehensive bicycle plan for U of L that will serve as a demonstration project for both the Louisville Metro Government and other similar metro areas across the country. This work was completed under the direction of Dr. John Gilderbloom's Urban and Public Affairs Advanced Topics/Urban Research Seminar which included graduate students from the School of Public Health and Information Sciences, Urban Planning, and Public Administration.

U of L Survey and Data Analysis

In the spring of 2010, at the request of the Sustainability Council and Sustainable Urban Neighborhoods Program, a survey was conducted on a sample of students, faculty and staff at U of L to try to better understand the commuting behaviors of the university community and its perceptions of alternative forms of transportation. The survey was prepared under the leadership of Dr. Gilderbloom and was a collaborative effort between the Center for Sustainable Urban Neighborhoods (SUN), the Special Assistant to the Provost for Sustainability, the Office of Academic Planning and Accountability, graduate students in the Advanced Topics Bikeability course, the Kentuckiana Regional Planning & Development Agency (KIPDA), and Louisville Metro Government.

*"Let me tell you what I think of bicycling. I think it has done more to emancipate women than anything else in the world. It gives women a feeling of freedom and self-reliance. I stand and rejoice every time I see a woman ride by on a wheel...the picture of free, untrammelled womanhood."
— Susan B. Anthony*

The invitation to take the survey was sent to nearly 10,000 U of L faculty, staff and students. The range of questions included how respondents commute to and from campus, their willingness to pay more for gasoline and parking



permits, views on bicycling as a means of transportation, and opinions on the safety of cycling and other forms of transportation. Responses have been examined against the various controls (gender, race, GPA, etc.) using multivariate regression analyses.

CYCLING AND ITS BENEFITS

A Public Health Crisis

Public health is influenced by the interactions between people and the built environment through exposures to environmental factors that may reduce/increase risk of injury or even death and can also influence the frequency and type of a person's physical activity. Design elements of the built environment can provide opportunities to improve public health through increased physical activity. Improving the quality of the travel experience of bicyclists through an improved sense of safety, comfort, and accessibility will encourage more physical activity and therefore improve the overall health of Metro residents.

Physical activity decreases morbidity, mortality, and the risk of: cardiovascular disease, certain cancers, diabetes, obesity, and asthma (Wendell, Tom, & Rohm, 1998). In 2005, life expectancy in Kentucky was 75.5 years as opposed to 78.4 years for the US, ranking 43rd in the nation (Health Status – Kentucky, 2010). Jefferson County fares no better with a life expectancy of 75.3 years (Community Health Status Indicators, 2010). During the same time period, life expectancy was 78.8 years in the Netherlands (Netherlands Life expectancy at Birth, 2010), a nation known to be more bike and pedestrian friendly (Gilderbloom et al., 2009). Non-motorized travel accounts for 40 percent of all trips in the Netherlands, nearly six times greater than the US rate of seven percent (Pucher & Dijkstra, 2003).

In 2006, Kentucky was ranked sixth highest in the nation for heart disease mortality (Health Status – Kentucky, 2010).

Table 1. Health Indicators Associated with Physical Inactivity

Health Indicator	Jefferson Co.	KY	US	KY Rank*
Moderate/ Vigorous Physical Activity Participation	N/A	42.2% ⁴	49.2% ⁴	464
Life Expectancy (years)	75.31	75.54	78.4	434
Heart Disease Mortality Rate (per 100,000 people)	206.92	235.54	200.24	64
Cancer Incidence Rate (per 100,000 people)	577.633	500.24	458.24	44
Diabetes Prevalence	10% ²	9.8% ⁴	8.2% ⁴	94
Adult Obesity Prevalence	N/A	66.6% ⁴	63.0% ⁴	64
Child Obesity Prevalence	N/A	37.0% ⁴	32.0% ⁴	34
Asthma Prevalence	11% ²	9.0% ⁴	8.2% ⁴	144

Note: 1. *KY rank in the US. Source: <http://www.statehealthfacts.org/profilecat.jsp?rgn=19&cat=2>. Sources: 1. <http://www.communityhealth.hhs.gov/SummaryMeasuresOfHealth.aspx?GeogCD=21111&PeerStrat=3&state=Kentucky&county=Jefferson>; 2. <http://www.kentuckyhealthfacts.org/data/location/show.aspx?county=Jefferson>; 3. <http://cancer-rates.info/ky/index.php>; 4. <http://www.statehealthfacts.org/profilecat.jsp?rgn=19&cat=2>

Prevalence of diabetes in Jefferson County Kentucky was 10 percent in 2008 (Kentucky Health Facts, 2010). The Netherlands had less than half the diabetes prevalence as Kentucky with only 3.9 percent (StatLine, 2008). In 2007, Kentucky ranked sixth highest in the U.S. for adult obesity (Health Status – Kentucky, 2010). For childhood obesity, Kentucky ranked third highest in the U.S. with a statewide prevalence of 37 percent, compared to a national prevalence of 32 percent (Health Status – Kentucky, 2010). In comparison with 2005 obesity rates in the Netherlands, US obesity was slightly over 20 percent higher (Gilderbloom et al., 2009). In 2007, Kentucky had the 14th highest asthma prevalence at nine percent, compared to 8.2 percent for the nation (Health Status – Kentucky, 2010).

Benefits of Increased Physical Activity

In addition to reducing risk of chronic diseases and weight gain, regular physical activity also decreases stress levels (Fox, 1999). It is estimated that 47 percent of adults suffer from adverse effects of stress (APA Stress Survey: *Children More Stressed than Parents Realize*, 2009) and 75 to 90 percent of primary care physician visits are related to stress (*America's No.1 Health Problem*, 2010). On the job, 60 percent of work absences are attributed to stress, which is estimated to cost companies over 57 billion dollars annually (Clark, 2010). Stress contributes to mortality from heart disease, cancer, lung disease, accidents, depression, cirrhosis, and suicide. The many physical and mental health symptoms associated with stress provide a strong argument for increasing access to physical activity because exercise has stress reducing qualities.

Benefits to the Environment

Increased rates of greenhouse gas (GHG) emissions are warming the earth and carbon dioxide (CO₂) is the primary culprit. In the U.S., CO₂ accounts for more than 80 percent of total GHG emissions (NHTS, 2009). Activities such as burning fossil fuels have increased atmospheric CO₂ levels 35 percent higher than levels present during the industrial revolution. While some in colder climates might lightheartedly welcome more balmy weather, the reality is that the effects of climate change could pose serious threats to public health, economic stability and even national security.

In 2004, transportation accounted for almost one-quarter of the global energy-related CO₂ emissions; motor



vehicles accounted for approximately three-quarters of those emissions (Kahn et al. 2007). Approximately one-third of CO₂ emissions in the U.S. are transportation-related and automobile travel accounts for 90 percent of all trips (NHTS 2009, Kahn et al., 2007). Private cars and trucks burn 40 percent of the oil consumed in the U.S.; equivalent to 10 percent of the world demand (Gotschi and Mills, 2008). The combustion of each gallon of gasoline for transportation emits approximately 20 lbs. of CO₂; approximately 23 lbs. if refinement and distribution are included (Glaser, 2008). Annually in the US, personal transportation accounts for approximately 136 billion gallons of gasoline, or 1.2 billion tons of CO₂ (Gotschi and Mills, 2008) which amounts to approximately one-fifth of global CO₂ emissions (Ewing et al., 2008).

The thirst for oil and consumption of fossil fuels is not expected to decrease. In fact, global transportation-related carbon emissions are projected to increase 80 percent by 2030 (Kahn et al., 2007). Although great strides have been made to increase the fuel efficiency of our fleet of motor vehicles, individuals are taking a greater number of trips and traveling farther to reach their destinations. In fact, the number of vehicle miles traveled (VMT) in the US has increased three times faster than population growth in recent decades (Gotschi and Mills, 2008). These external costs that result from increased fuel efficiencies (i.e., Jevons Paradox - increased fuel efficiency often yields increased VMT) and the many indirect benefits from travel reductions (i.e., less congestion, emission reductions, health benefits) are often excluded from analyses in programs aimed at reducing transportation related emissions (Litman, 2010).

In order to reduce GHG emissions to a level that will help mitigate climate change, a multifaceted approach will be required. The paradigm of the past several decades has been to increase fuel efficiency in the hopes that it will offset our demand for oil and lessen our impact on the environment. However, it is clear from our predicament that increased fuel efficiency alone will not suffice. It is irrational to think of a solution to climate change that does not involve significant changes to our transportation system and our commuting choices. One way of making a significant impact is by biking locally (to work, school, and for other short trips); think globally, bike locally.

Carbon dioxide emissions from the transportation sector can be thought of as a three-legged stool: a function of vehicle fuel efficiency, fuel carbon content, and VMT (Ewing et al., 2008). Increasing fuel efficiency and finding alternative sources of fuel will be critical in developing an effective transportation program, but one of the simplest things that can be done is to drive less. About half of all car trips are less than five miles (Maibach, 2009) which could instead be completed with a 20-minute bike ride.

Local infrastructure, density, and spatial structure of the built environment influence the amount of potential GHG mitigation possible from reduced VMTs. For example, smart growth development patterns (i.e., increased density, walkability, etc.)

produce 35 percent less VMT than sprawling suburban-type growth (Ewing et al., 2008). Efforts to reduce CO₂ emissions by driving less can realize significant benefits. A 30 percent reduction in VMT could result in a 28 percent reduction in CO₂ emissions (Ewing et al. 2008).

Reducing the number of VMTs, using more fuel efficient vehicles, carpooling, using public transportation, chain trips, walking, and bicycling are all important components to reducing the overall carbon footprint of daily travel. However, it can be argued that none are more fun, exciting, rewarding and effective than riding a bike. A bicycle commuter who rides five miles to work, four days a week, avoids 2,000 miles of driving per year, which is the equivalent of 100 gallons of fuel saved and 2,000 lbs of CO₂ emissions avoided. Such a savings would have approximately a four percent reduction of the average American's carbon footprint (Gotschi and Mills, 2008). Total savings that would result from shifting short trips to bicycling or walking could amount to 2.4 billion to five billion gallons of fuel or between 21-45 million tons of CO₂ per year (Gotschi and Mills, 2008). While bicycling may not solve the problem of climate change on its own, it has to be part of the solution.

If Biking is so Healthy and Good for the Environment, Why Don't More Americans Do It?

The majority of the U of L survey respondents drive a car alone from home to campus. Roughly one third of the students in the survey either walk, bike or take the bus. The survey revealed that more people would bike if they were given a free bicycle in exchange for not purchasing a parking pass. Many more students would like to ride a bike or walk to improve their health but are reluctant to do so because of the perceived dangers due to a lack of bike lanes.

While the benefits of cycling are undeniable, it is important to understand that there are risks associated with cycling as well. Cyclists are 12 times more likely to be killed than motorists (Delmelle and Thill, 2008). Louisville was recently ranked the seventh most dangerous city for pedestrians, which also serves as an indicator of bicyclists' safety (*Transportation for America*, 2010). According to the Kentucky State Police, there were 532 bicycle crashes in Jefferson County between January 1, 2006 and May 31, 2009, averaging about 165 accidents annually. Jefferson County had three bicycle fatalities in 2008 (Gowin, *Countywide Countermeasures 02*, 2010) accounting for half of the bicycle deaths in the state.

A breakdown of the 2008 state data reveals that almost a quarter of bicycle injuries and half of the deaths were due to carelessness of the driver (KSP, 2008). In 2008, 14 percent of bicycle injuries were due to failure of the driver to yield the right-of-way (KSP, 2008). In Jefferson County, the angle turn collision (driver turns across the path of a cyclist) accounted for the largest number of bicycle accidents, with 241 crashes between January 1, 2006 and May 31, 2009 (Gowin, *Countywide Countermeasures*



Figure 1. “Ghost Bike” in Louisville, Kentucky – site of Jen Futrell’s fatal accident

02, 2010). During the same time period, sideswipe collisions were the second most common accident type in Jefferson County. These data suggest that improving driver attention and right-of-way adherence could reduce injury and mortality risk, thus improving safety for cyclists. Transportation design elements of the built environment contribute greatly to the above factors by influencing driving habits and bicycle safety.

The importance of the built environment is further illustrated by the fact that cycling in the US is 12.5 times more dangerous in terms of cyclist fatality rates than in the Netherlands. A comparison of the injury rate per 500,000 km traveled reveals a considerable difference between the U.S. and the Netherlands, 25 and 0.4, respectively (Pucher and Dijkstra, 2003).

Bike Lane Collisions

Road design positively influences cyclist safety when it accommodates all users of the road—cyclists, pedestrians, and motorists. Lott and Lott (1976) compared roads with and without bike lanes and determined that roads with bike lanes had 53 percent fewer bike accidents. Moritz (1998) investigated the danger indices (number of crashes divided by commute distance) and found they were over twice as high for roads without bike facilities (e.g. bike lanes) (*Transportation Toolkit*, 2010).

Bike Lane Alternatives

Cyclists who oppose the provisions of bike lanes or other bicycle facilities believe that cyclists operate best when they act and are treated as

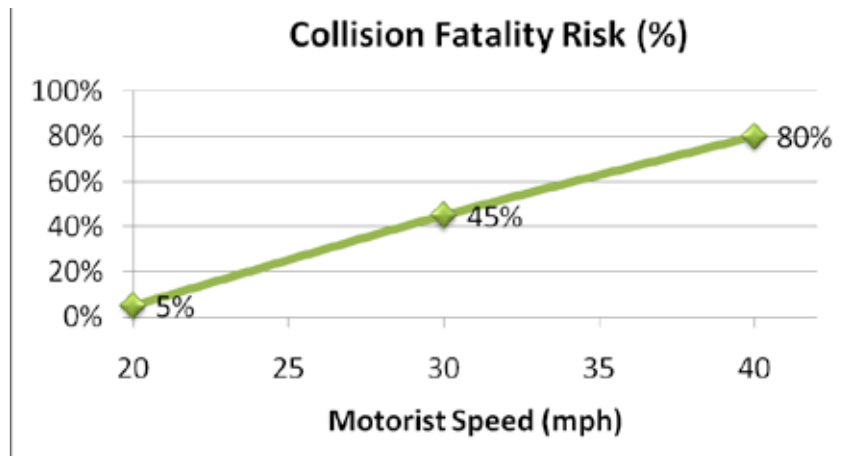
drivers of vehicles on roads (Mapes, 2009). Some believe that bike facilities such as bike lanes, cycle tracks and multi-use paths are used to simply keep cyclists out of the motorists’ way (Mapes, 2009). As fervent bicycle-rights advocate John Forester states, “...Americans believe that cyclists are inferior to motorists in legal status and in competence, that cyclists should defer to motor traffic, and that failure to defer to motor traffic is dangerous” (Forester, 2009). Whether you are an advocate for cycling infrastructure or feel that cyclists should act as motorists while on city streets, integrating cyclists and automobiles within the same transportation network will require provisions for all users.

Collision Speed

The speed of motor travel on streets greatly influences bicycle safety, and is a clear giveaway that roads are not designed for the most vulnerable users, but instead for the motorist. As Dan Burden, a bike advocate, explains, “The human body is not designed to move faster than fifteen miles per hour. Our sight, our ability to interpret things, to process things, is bicycling speed” (Mapes, 2009). Kim et al. 2005, found that the likelihood of severe injuries increases as vehicular speed increases and the fatality risk for cyclists more than doubles when motorist speed is above 30 miles per hour. If a cyclist is hit by a car traveling at 20 miles per hour, there is a five percent chance the accident will result in a cyclist fatality, but grows rapidly to 45 percent when the automobile is traveling at 30 miles per hour, and to 80 percent fatality at 40 miles per hour (Gowin, *Designing Streets for Bicyclists*, 2010).

Collisions on One Way Roads, Riding Against Traffic, and Sidewalk Riding

One factor influencing traveling speed and bicycle safety is street design. Allen-Munley et al. 2004 found more severe cyclist injuries were reported in collisions on one-way streets than two-way streets (Reynolds et al., 2009). Wachtel and Lewiston 1994 reported that cyclists traveling in the wrong direction are



Source: Gowin, *Designing Streets for Bicyclists*; Pucher and Dijkstra (2003)

Figure 2. Bicyclist Fatality Risk Associated with Motorist Speed in Collisions



3.6 times more likely to have collisions than those following the direction of traffic (*How Not to get Hit by Cars*, 2009). Traveling against the flow of traffic is dangerous because motorist right turns from side streets could lead directly into the cyclist's path thereby increasing the chance of head-on collisions (*Wrong Way Cycling*, 2010; *How Not to get Hit by Cars*, 2009). Reducing the number of one-way streets and providing cycling network connections to desirable locations will reduce the likelihood of cyclists engaging in convenient, but unsafe travel behavior. Watchel and Lewiston (1994) found that sidewalk riding is twice as dangerous for cyclists. Motorists do not expect to encounter bicycles in crosswalks and underestimate the speed at which bicycles travel, leading to disastrous consequences when they interact.

Survey Results and the Economics of Transportation

The Surface Transportation Policy Project (STPP), a nationwide coalition for safer communities and smarter transportation choices, has found transportation is an expense second only to housing. The average American household devotes 18 cents out of every dollar to transportation. In some metro areas, households are spending more on transportation than on housing. The vast majority of that spending (98%) is for the purchase, operation, and maintenance of automobiles. Some American families spend more on driving than on health care, education or food. The poorest families spend the most, sometimes in excess of one-third of their income. STPP found that households in automobile-dependent communities devote 50 percent more to transportation (more than \$8,500 annually) than households in communities with multi-modal transportation systems (less than \$5,500 annually) (STPP, 2000).

Cost of Driving for Cities and Universities

The reliance on the car for transportation creates a heavy financial burden on the city as well. For example, costs to provide car parking include \$11,500 to \$13,000 per space in a garage, while a typical surface lot costs \$1,800 to \$2,000 per parking space (CML, 2005). Estimated costs of constructing one car parking space in a paved lot can be as high as \$22,000 and the cost of constructing one car parking space in a garage to cost \$20,000 to \$30,000. Conversely, the cost to purchase and install one bike parking rack is approximately \$1,500 (Cascade, 2010).

Table 2. Willingness to Pay More for a U of L Parking Pass Before Finding an Alternative Means of Transportation

Permit Type	\$50	\$100	\$200	\$300	\$400	I will always drive to campus	Total
Red: \$562	19.7%	13.1%	10.0%	2.4%	7.9%	46.9%	290
Jewish Hospital Garage: \$361	39.0%	19.5%	7.3%	7.3%	12.2%	14.6%	41
Chestnut St. Garage Magenta: \$361	34.5%	19.5%	9.7%	7.1%	8.0%	21.2%	113
Blue: \$268	29.6%	15.9%	11.9%	8.6%	5.3%	28.6%	395
Yellow (resident): \$143	34.1%	22.0%	22.0%	0.0%	0.0%	22.0%	41
Green: \$126	50.4%	14.5%	13.7%	2.0%	1.6%	18.0%	256
620 HSC Garage Magenta: \$126	35.3%	18.6%	15.4%	8.3%	7.7%	14.7%	156
Purple: \$93	44.9%	23.4%	11.2%	3.7%	0.9%	15.9%	107

Table 2Source: U of L Transportation and Sustainability Survey 2010

In evaluating survey respondents' willingness to pay more for a U of L parking pass, those already paying for premium parking passes expressed a willingness to pay even more. While 45 percent of standard pass holders would only be willing to spend another \$50 per year for a parking pass, 47 percent of those possessing a premium pass stated that they will pay any amount in order to continue driving to campus. Medium price parking passes show less extreme splits on their willingness to pay more.

Economic Benefits of Bikeable and Pedestrian-friendly Communities

One third of survey respondents would use money saved from commuting to improve their housing. One-fifth of respondents would use their savings to purchase better quality groceries or higher quality clothing. One-sixth would buy more music and books, or attend more music and sporting events. One out of ten would plant a garden, work out more or start eating out more.

The willingness for consumers to spend more in walkable and bikeable communities stems from the economic tradeoffs associated with less reliance on automotive travel. Studies have shown that homebuyers are willing to pay a premium for homes in pedestrian-friendly communities, anywhere from four to 15% (LGC 2000, Tu and Eppli, 2001). A consumer's market radius is lessened when the means of transportation goes from auto to bicycling or walking, meaning a greater portion of that person's spending is done closer to that person's residence. As the distance to destinations like work, shopping or entertainment declines with less separation between uses and increased mixing, home values should increase (Matthews, 2006).

University populations have shown to be especially responsive to alternative modes of transportation. The 2008 U.S.



Table 3. Means of Transportation to Work by Metropolitan Statistical Area

Rank	Metro Area	Bicycling to Work (%)	Walking to Work (%)	Major University	University Enrollment
1	Yolo, CA	6.4	2.9	University of California-Davis	31426
2	Eugene, OR	5.0	4.7	University of Oregon	20376
3	Fort Collins-Loveland, CO	4.7	1.7	Colorado State University	31011
4	Flagstaff, AZ	4.0	6.6	Northern Arizona University	21413
5	Gainesville, FL	3.2	2.1	University of Florida	49679
6	Santa Barbara-Santa Maria, CA	3.0	4.1	University of California-Santa Barbara	21868
7	Chico, CA	2.7	3.2	California State University-Chico	17132
8	Santa Cruz, CA	2.4	2.8	University of California-Santa Cruz	16087
9	Bryan-College Station, TX	2.4	2.8	Texas A&M University	48702
10	Portland, OR	2.2	2.9	Portland State University	24284
153	Louisville, KY	0.4	1.7	University of Louisville	21016

Source: American Community Survey 2008

Census data show that the top nine metropolitan statistical areas where individuals bicycle to work have a major state university as a major staple of its local economy. The areas are geographically, climatically, and economically diverse in nature, but all have a major state university with at least 17,000 students.

Currently Louisville ranks especially low for bicycling, walking, and other modes of non-automotive travel. Metro Louisville ranks 153rd of 284 metro areas in individuals who bicycle to work, 182nd in walking to work, and 188th in percentage using other non-automotive means of getting to work. Even within the U of L community, the proportion of the population using alternative means of transportation to get to campus is alarmingly low. Only four percent of all students and two percent of faculty and staff bike to work on a regular basis. Among students, 17 percent walk to get to campus, including students living in university owned housing on or near campus. An overwhelming proportion drive one person to a car. Nearly 80 percent of faculty and staff and close to two-thirds of the student population are commuting by themselves via automobile.

Promotion of Bicycling

The University of Louisville is a major stakeholder in increasing bicycling as a means of commuting to campus. Increasing livability, walkability, and bikeability around the campus and increasing property values. Bikeability would aid in the recruitment of students, faculty, and staff to not only enroll or work at the university but also to live near the campus.

Creating bike lanes for safe riding would be a tangible show of support for cycling as a means of transportation at the University of Louisville. Figure 4 shows a tremendous willingness among university faculty, staff, and students to consider biking to campus if a dedicated bike lane was provided from their neighborhood to campus. For students, 62 percent “strongly agreed” with the statement that if a dedicated bike lane

was provided from the respondents’ neighborhood to campus, they would be more likely to bike to campus and another 22 percent “agreed.”

Conclusion

Louisville will be a stronger and smarter city when people adopt alternative forms of transportation. Skyrocketing gas prices and a troubled economy overall have prompted a demand for those alternatives. Our report demonstrates that an increase in bicycle, pedestrian, and public transportation infrastructure will have numerous health, environmental, and economic benefits. With fewer cars on the road, we will increase active

lifestyles, decrease CO2 production, and save money. With healthier people in Louisville, employers will avoid absences due to illness and savings through lower health insurance costs. A cycling infrastructure is a key component of Louisville’s investment to attract businesses, bring economic growth, and increase employment opportunities. The increased savings from alternative forms of transportation will be invested within the local economy when people use those savings to improve their homes, buy local foods and patronize local businesses. The University of Louisville would realize even greater benefits, saving millions by avoiding the costs of additional parking facilities, attracting healthier students, improving the health of current students, and retaining more students.

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More Walkable Cities Benefit Everyone

By Wendy Landman, WalkBoston Executive Director

WalkBoston Annual Meeting Walk, Washington Street, Boston

PHOTO BY CARLA OSBERG

Imagine being elderly and trapped in an apartment for twelve days because the sidewalks outside your building are covered in snow and have not been shoveled. Imagine being a teenager walking through your community and seeing trash strewn on sidewalks, or a mother with a stroller crossing streets without crosswalks, or rushing across intersections with poorly timed walking signals. People confront these obstacles every day in cities large and small across the U.S. Establishing healthy, livable communities means addressing these challenges by creating pedestrian-friendly built environments that encourage and support walking, biking and transit.

When founded in 1990 by Ann Hershfang, Dorothea Hass and their small band of self-described “transportation nerds,” WalkBoston became the first organization in America dedicated to making communities more walkable and focused on everyday walking. Over time, the organization has become a model for other pedestrian advocacy organizations across the nation. Today through a combination of effective advocacy, educational outreach, and innovative programs, WalkBoston makes meaningful contributions to everything from streetscape design to local and statewide policymaking. While originally focused on the Boston-area, WalkBoston has expanded its work to regional, state and even national levels. A small member-based organization, with representation from over 75 Massachusetts cities and towns, the organization’s impact is magnified through astute collaborations with key individuals, grassroots and other advocacy organizations, state and local agencies and institutions.

Walking is an Environmental, Social Justice and Sustainability Issue

Since WalkBoston’s founding over 20 years ago, our understanding of the importance of walking has grown from a basic transportation need to seeing it as the glue that holds our communities together. When communities work to reduce the green-

house gas impacts of transportation; limit the amount of impervious surface (much of which is dedicated to streets and parking); increase levels of physical activity among their residents; provide access to jobs, education, health care and social connections for all citizens (young and old, people with disabilities, rich and poor); or provide opportunities for all people to take part in civic life, they include walking as a key component of their efforts.

Study after study demonstrates the value of walking. Walkable communities generate lower vehicle miles traveled, slimmer residents, healthier retail areas, and greater civic engagement. While walking cannot cure all the ills of the modern metropolis, it is a necessary ingredient of a healthy, vibrant and sustainable 21st century city.

Advocacy goals

The challenges to safe and pleasant walking are not always obvious and range from the details of urban design to broader patterns of land use and transportation system funding. Solutions often require collaboration and cooperation among many partners. Among the key walkability issues that WalkBoston is tackling are:

- Reminding people that walking can be an easy, pleasant and convenient choice for short trips – something that seems to have been forgotten in our car-centric world.
- Ensuring that traffic engineers and designers include pedestrians in the design and management of streets and sidewalks, intersections, and traffic signals.
- Beginning to change the thinking about traffic speeds on residential and commercial streets. Slowing traffic makes streets safer. Studies¹ of cities that have adopted “20 is plenty” speed limit policies for residen-



tial areas show significant reductions in traffic related deaths and injuries.

- Moving operations and maintenance of the pedestrian streetscape higher on the “to do” lists for municipal officials and community residents – whether re-painting crosswalks, shoveling snow, trimming hedges, picking up trash or fixing broken sidewalks. One of the new tools of the trade – smart phone apps – is drawing new advocates into the mix by allowing walkers to easily and instantaneously report conditions that need attention.
- Adding Safe Routes to Schools programs to the health, safety and community outreach activities that are part of school department thinking in communities with good sidewalk networks and reasonably high proportions of children living within a mile of school. Such efforts will make our towns better places to walk for everyone and lead to lifelong habits of walking for the young people who participate.
- Working with economic, community development and housing planners to tackle zoning and planning issues to move Massachusetts communities toward more walkable, transit accessible land use patterns.

Walking Benefits Communities

From its beginning, WalkBoston has worked to bring new participants into the planning processes of transportation and smart growth development, particularly under-represented groups often left out of the conversation. For example, in efforts reaching out to young people, WalkBoston developed training programs, materials, and a curriculum to teach teens how to work with public agencies and developers to support the walking needs of



Teen advocates carrying out a walk audit
PHOTO BY HILLARY BORCHERDING

their communities. Our work with seniors has engaged them in advocating for better snow clearance and teaching their neighbors that shoveling their sidewalks is the neighborly thing to do. Our programs teach both youth and adults how to read roadway/sidewalk plans, undertake pedestrian counts, and assess the physi-

cal features that make walking a safe and convenient mode of transportation. As a result, the new advocates we have educated have been able to work with municipal officials to design safer intersections, widen sidewalks, repair streetlights and speak up at community meetings for the needs of walkers.

WalkBoston’s website has been designed to provide the public with a growing library of tools to help identify problems pedestrians face and offer solutions. A *Pedestrian 101* slideshow, for instance, highlights simple and effective techniques for pedestrian advocacy at the community level while a *Pedestrian 201* slideshow provides more in-depth technical information and skill building. One of our greatest online resources for building a sense of community and presenting a frame for civic engagement, are WalkBoston’s timed walking maps.

We often think of distance in terms of travel time, yet, most maps don’t provide this information. Many of WalkBoston’s maps include timed walk segments that demonstrate how convenient walking can be – especially by highlighting community destinations linked via 5 minute increments. The addition of walking times on our maps adds a new dimension of performance that is not currently available with most walking maps. The added information gives walkers a better understanding of their environment. By showing what a five-minute walk looks like, we are better able to easily convey the walkability of an area, making our maps an effective tool for encouraging people to walk.

Walking Benefits the Economy

For businesses, supporting improved walking conditions is a sound but sometimes overlooked investment. Studies are showing that walking strengthens business districts. According to the Urban Land Institute², vibrant, walkable retail areas attract people to stay longer, spend more money, and visit more often. According to Marlon Boarnet, director the Institute of Transportation Studies at the University of California-Irvine and author of *Retrofitting Suburbia*, the most walkable, densely-



Massachusetts Farmer’s Market

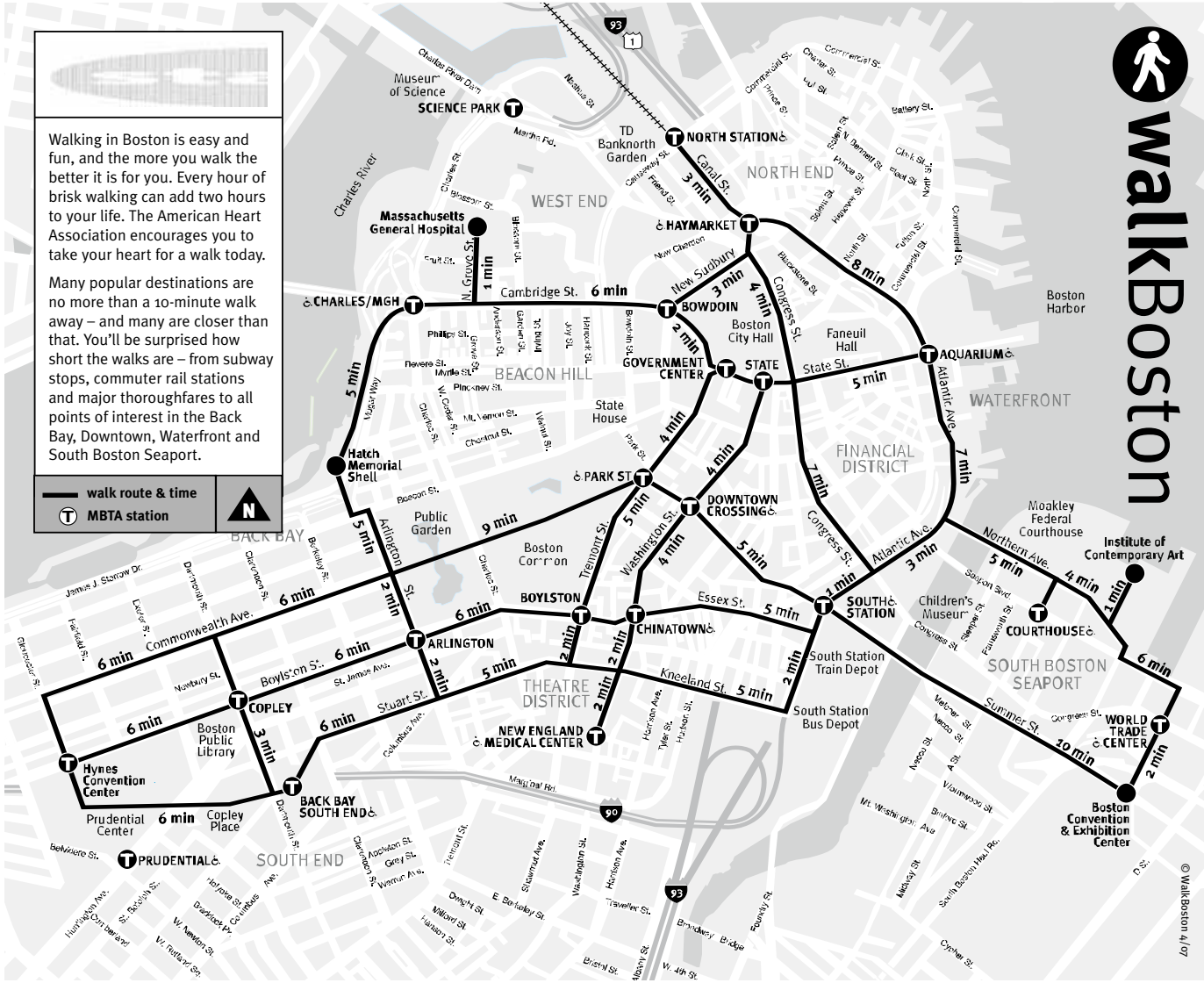


4

CityRoutes: Start! Boston

walkBoston

© WalkBoston 4/07



Walking in Boston is easy and fun, and the more you walk the better it is for you. Every hour of brisk walking can add two hours to your life. The American Heart Association encourages you to take your heart for a walk today.

Many popular destinations are no more than a 10-minute walk away – and many are closer than that. You'll be surprised how short the walks are – from subway stops, commuter rail stations and major thoroughfares to all points of interest in the Back Bay, Downtown, Waterfront and South Boston Seaport.

— walk route & time
 T MBTA station

built shopping districts in Los Angeles have four times the retail activity of “strip mall” shopping centers in less dense areas. Research shows when businesses and communities make walking a priority, everyone benefits – employees, tourists, local residents, and the overall economy. The more walkable a retail area, the more people spend and the more likely they are to return.

As Massachusetts communities grapple with the current economic challenges, WalkBoston is working with municipal officials, business leaders and neighborhood groups to identify simple and easy-to-implement features that make business districts lively and more pedestrian-friendly. To promote this theme of *Good Walking is Good Business* in 2010, WalkBoston introduced the *Walkers' Choice Award*, an annual award honoring



WalkBoston Safe Routes to School Event
 PHOTO BY DON EUNSON

those businesses making a difference. In 2012, WalkBoston is committed to fully implementing a *Good Walking is Good Business* education initiative in Boston's business districts and with several smaller communities across the state. A brochure summarizing national research and a slide show illustrating some basic tips for low cost walking improvements are available on WalkBoston's website <http://www.walkboston.org/work/gwigh.html>.

Walking Benefits Health

Almost every day, new research is published documenting the health benefits of walking, whether for cardiovascular health, reduced risk of overweight and obesity, recovery from cancer, maintenance of cognitive health or reduction in depression³. Over the last five years, WalkBoston has become more deeply



engaged with the public health community through work with neighborhood health centers serving Boston residents at high risk for chronic health disease, working with the “Food and Fitness” movement that seeks to improve access to physical activity and healthy food for low income and at-risk communities, and through collaboration with YMCAs and other grassroots organizations seeking to create healthier opportunities for children and youth.

One of the important elements of this broader effort to increase walking for everyone is the *Safe Routes to School* (SRTS) movement, a national and international effort to create safe, convenient and fun opportunities for children to walk and bicycle to and from school. This movement seeks to reverse the decline in children walking and bicycling to school, and help reverse the trend toward inactivity and childhood obesity. In 1969, approximately 50% of children walked or biked to school while today, fewer than 15% of schoolchildren walk or bike to school. As a result, kids today are less active, less independent and less healthy. WalkBoston has been a leader in the SRTS movement from its start – leading the first SRTS program in New England more than a decade ago, participating in the National Partnership for SRTS with its focus on building and shaping the movement, and continuing by undertaking ground-breaking research to identify ways to target SRTS programs to communities where they can have the greatest impact.

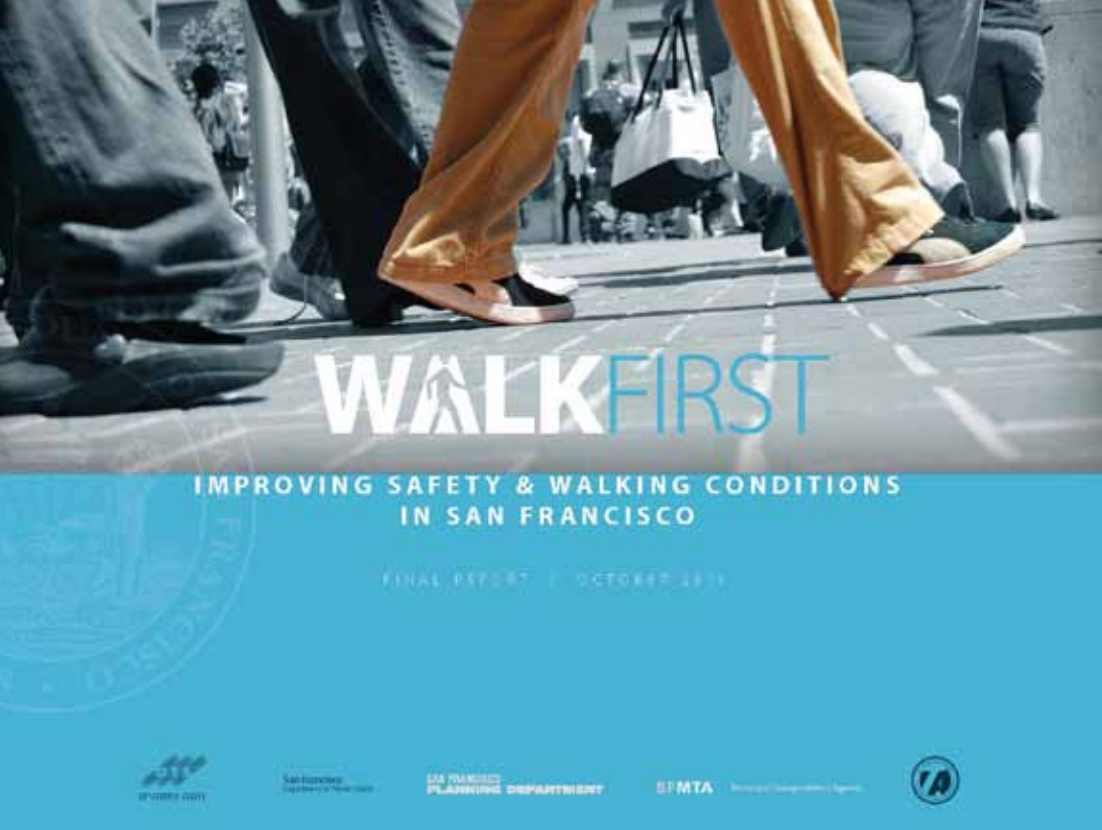
Conclusions

Walking is the club that everyone belongs to but few join (at least as dues-paying members!). Happily, walkability now seems to be a condition that many communities aspire to so that their residents can really join the club. With support from our members (both individual and corporate), foundations (special thanks to the Barr Foundation which has been an especially longstanding and generous funder), and public agencies (including the Boston Public Health Commission, the Massachusetts Departments of Public Health and Transportation, and the Federal Transit Administration), WalkBoston is promoting walkability through its work to educate and engage individuals, provide technical assistance and capacity-building to municipal staff, and serving as a voice for pedestrians on local, state and national stages. —

Wendy Landman joined WalkBoston as Executive Director in September 2004 and has led the organization’s growth in size and impact. She came to WalkBoston with twenty-five years of experience as an urban planner. Wendy holds Bachelor’s and Master of City Planning degrees from MIT and a Diploma in Urban Design from the University of Edinburgh. Her love of cities and walking was inspired when she spent her sophomore year of high school transported from the suburbs of Washington DC to the heart of Paris.

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WalkFirst in San Francisco

By Ana Validzic, MPH
WalkFirst Project Manager

The WalkFirst project was a multi-agency effort in San Francisco to improve pedestrian safety and walking conditions, encourage walking as a mode of transportation, and enhance pedestrian connections to key destinations. The goals of the project were to: 1) identify key walking streets in San Francisco; and 2) develop criteria to prioritize pedestrian improvements.

WalkFirst was a collaborative effort between the San Francisco Department of Public Health, San Francisco Planning Department, San Francisco Municipal Transportation Agency, and San Francisco County Transportation Authority. Funding for this program was provided by a grant from the California Office of Traffic Safety, through the National Highway Traffic Safety Administration. This grant was funded for one year starting October 1, 2010 through September 30, 2011.

The WalkFirst Project produced five key work products:

1. Criteria for prioritizing pedestrian improvements;
2. A citywide map of key pedestrian streets and areas;
3. Draft policies and investment strategies relating to walking and the pedestrian environment;
4. A preliminary project list of recommended safety pedestrian improvements; and
5. Five Case studies and concept designs of pedestrian improvements at key locations.

Prioritizing Pedestrian Improvements

The WalkFirst project focused on four high-level criteria to inform where to prioritize pedestrian improvements and what types of improvements to make. The prioritization criteria included:

- Pedestrian activity;
- Pedestrian safety;
- Street and sidewalk characteristics; and
- Project readiness.

Pedestrian Activity

Pedestrian Activity was approximated by factors that determine where people are walking, or where people would walk, given good pedestrian infrastructure. Land use characteristics, transportation access and street slope are examples of some of the factors which influence pedestrian activity that are analyzed in this project. Pedestrian Activity is discussed in further detail in the section titled *Where People Walk*.





Pedestrian Safety

Pedestrian Safety was characterized using pedestrian injury data from the California Statewide Integrated Traffic Records System (SWITRS). For the WalkFirst project, locations of pedestrian injury by severity were analyzed. Pedestrian Safety is discussed in further detail in the section titled *Pedestrian Safety Conditions*.

Street and Sidewalk Characteristics

Once the high priority segments were identified, the state of the streets and sidewalks at these segments were reviewed. The Street and Sidewalk Characteristics were defined by the physical features and conditions along the sidewalk and within the right of way. The physical features of the street and sidewalk reflected the relative state of pedestrian infrastructure, including gaps in the existing infrastructure.

Table 1

WALKFIRST				
				
Category	Pedestrian Activity	Pedestrian Safety	Street and Sidewalk Characteristics	Project Readiness
Goal	Identify places where people walk	Identify most important locations for safety improvements	Identify street and sidewalk infrastructure/conditions	Identify opportunities to fund and construct pedestrian improvements
Product	Map of key walking streets in SF	Map of identified areas of improvement for pedestrian safety	Preliminary project list	Preliminary project list

improvements took into account project readiness, equity considerations, and community support to ensure that improvements can be implemented in a cost-effective, fair and timely manner. See the section titled *Preliminary Capital Project List* for more details.

Where People Walk

People walk for a variety of reasons - as a form of transportation, for recreation, for exercise, or as a way to experience a city. In addition, there are numerous factors that contribute to where people walk. These factors include pedestrian generators that draw people to a destination, such as schools, parks, or tourist attractions; transit stops that have concentrations of people walking to or from a transit stop to another destination; or natural features such as topography.

Project readiness

Project readiness reflected how efficiently and how quickly desirable improvements can be made. The project readiness factors also indicated how well positioned a specific project is to be funded and built. These factors included available funding, coordination with existing projects, cost (capital and maintenance), and public support.

Locations and types of improvements

The four criteria detailed in Table 1 have been used to inform *where* to prioritize pedestrian improvements and the types of improvements that should be made. The methodology to determine where to prioritize pedestrian improvements is based on the overlap between pedestrian safety and pedestrian activity. The intersection of streets with high pedestrian activity and high pedestrian safety was identified as **high priority streets** for pedestrian safety improvements. Table 2 illustrates how locations would be prioritized for improvements. As shown, two of the four areas inform these locations; pedestrian activity and pedestrian safety.

The methodology to determine the *types* of physical improvements was based on the existing conditions of the street and sidewalk as well as project readiness. The specific design recommendations were based on the existing street and sidewalk characteristics to ensure that the most promising physical improvements or design treatments were applied to a specific location. Recommendations for locations and the types of

To develop a map of key walking streets, the project looked at the pedestrian activity factors. To understand where people currently walk in San Francisco, or where people would likely walk if the conditions were better, a number of pedestrian activity factors were identified. These factors were organized into seven categories:

Pedestrian Activity Factors & Categories:

1. Access/Need to Walk¹

- % of people who walk to work
- % of people who take transit to work

Table 2

PRIORITIZING LOCATIONS FOR WALKING IMPROVEMENTS		PEDESTRIAN SAFETY: # COLLISIONS AND COLLISION RATE/CROSSING		
		HIGH: <i>Ranks 1/3 of pedestrian safety needs</i>	MEDIUM: <i>Ranks in next 1/3</i>	LOW: <i>Ranks in next 1/3</i>
PEDESTRIAN ACTIVITY: KEY WALKING STREETS AND AREAS	HIGH: <i>Identified as key walking street or area</i>	HIGHEST	HIGH	MEDIUM
	MEDIUM: <i>Identified as a Key Walking Street</i>	HIGH	MEDIUM	LOW
	LOW: <i>not identified</i>	HIGH	LOW	LOW

2. Transit Ridership²

3. Density of People³

- Population density
- Job density

4. Pedestrian Generators⁴

- Tourist destinations
- Colleges and universities
- Hospitals, Clinics & Mayor's Office on Disability Service Providers
- Public & private schools
- Parks and open space
- Shopping districts
- Senior Centers

5. Vulnerable populations⁵

- Density of seniors
- Density of youth
- Density of persons with disabilities

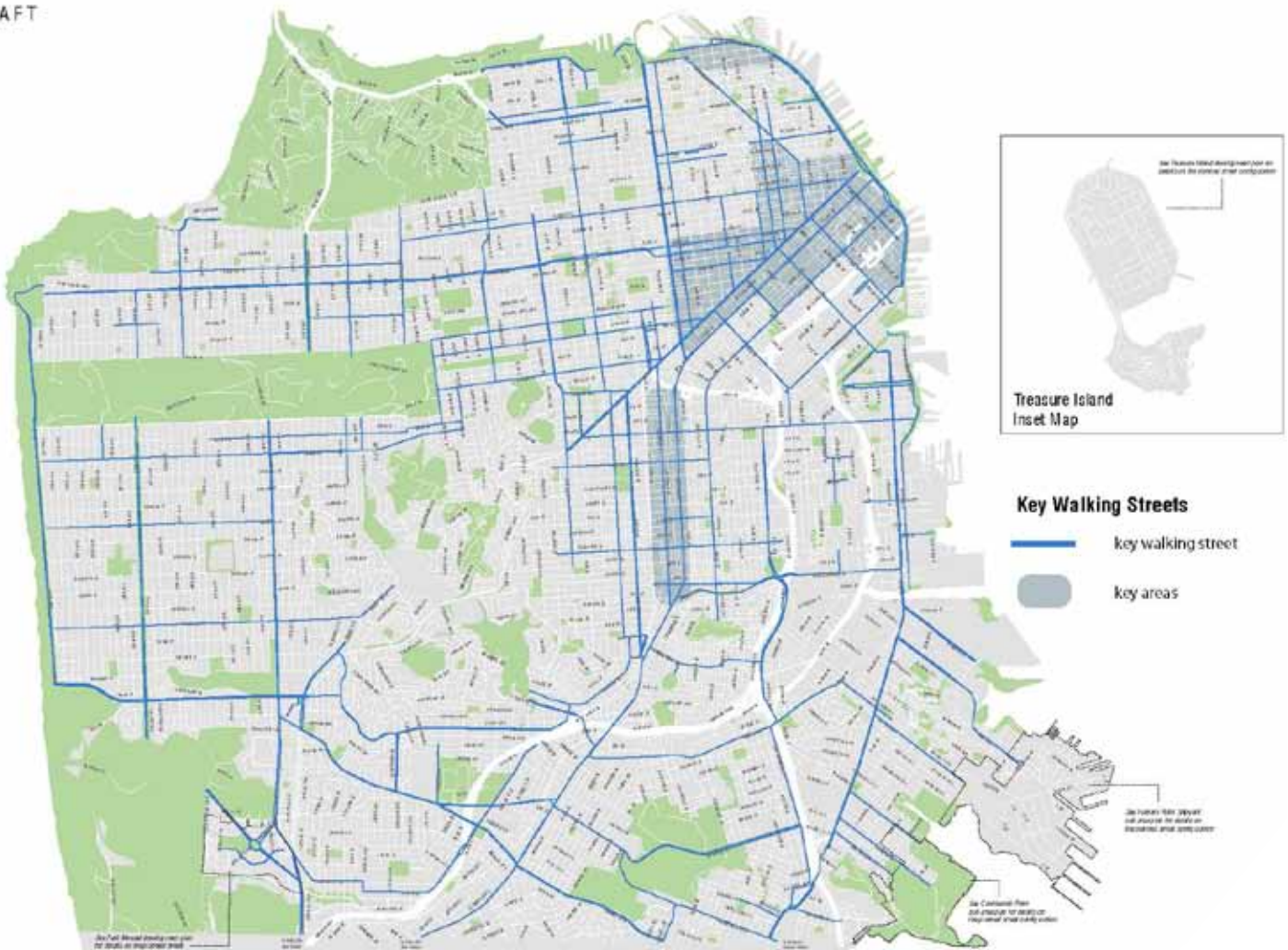
6. Income⁶

7. Street slope⁷

Next the pedestrian activity factors were applied to the street segment to develop a category map for the seven individual pedestrian activity categories. The seven category maps were then added together to create one composite map. The composite map is a comprehensive illustration of pedestrian activity based on the available census, economic, and land use data. This information was used to identify the Key Walking Streets and Areas (Map 1).

Map 1

DRAFT



SAN FRANCISCO

WalkFirst

Source: San Francisco Planning Department, San Francisco Municipal Transportation Agency, San Francisco Department of Public Health

Key Walking Streets were characterized by street segments in close proximity to significant pedestrian generators such as schools, parks, tourist activities and shopping districts. Key Walking Streets were also characterized by street segments in neighborhoods where there is more dependence on walking as a means of transportation, due to demographics, street slope, and/or limited access to transit or private automobiles. Key Walking Areas were characterized as having high concentrations of pedestrian activity (current or planned), including Downtown, Chinatown, the Mission District and Fisherman’s Wharf. In these “Key Walking Areas,” every street is a key walking street and specific street improvements would be developed in accordance with a pedestrian or multi-modal improvement plan for the area.

To complement the data and analysis, the project looked at the existing policies related to the pedestrian sector. Policies and objectives were drafted related to the pedestrian network and key pedestrian streets. The policies would support prioritizing the key walking streets for pedestrian improvements. The actual

improvements and designs would be based on the typologies established in the Better Streets Plan. Additional community feedback and input is needed prior to the adoption of this content into the City’s General Plan.

Pedestrian Safety Conditions

A safe pedestrian environment is crucial for people to choose walking as a travel option. According to the San Francisco 2009 Collision Report⁸, about a quarter of San Francisco’s 2,877 total motor vehicle injury collisions and over half of the 30 total fatal collisions involved pedestrians. With 744 pedestrians reported killed or injured in 2009 by the California Office of Traffic Safety (OTS), San Francisco was ranked by OTS as the county having the highest total rates of fatalities and injuries to pedestrians by both vehicle miles and by population, and also has the highest injury rates for seniors over 65 years of age.⁹

Map 2

DRAFT



SAN FRANCISCO

WalkFirst

Source: San Francisco Planning Department, San Francisco Municipal Transportation Agency, San Francisco Department of Public Health

Determining priority locations for pedestrian safety improvements

The methodology to rank pedestrian safety levels was analyzed at two scales: at a corridor-level and at an intersection-level. This analysis is necessary for efficient and effective pedestrian injury prevention. Prioritization based on high injury intersections alone typically identify and address only a very small overall proportion of vehicle-pedestrian injuries. For example, for a given year the top 10 intersections with the highest numbers of pedestrian injuries in San Francisco accounted for <3% of the total pedestrian injuries. Furthermore, because pedestrian injuries were relatively rare events at an individual intersection, there can be a high degree of variability at individual intersections from year-to-year. However, there are evident corridor- and area-level patterns of injury that represent a much larger share of injuries.

Data for 2005-2009 from the California Statewide Integrated Traffic Records System (SWITRS) was used for this analysis and included all pedestrian injuries resulting from a collision between a vehicle and a pedestrian. This included a total of 3,883

pedestrian injuries (383 of which were severe) and 97 fatalities. To focus on locations with more severe injury burdens, severe and fatal injuries were weighted by multiplying those counts times 3.

Corridor-Level Analysis:

The corridor-level analysis utilized an approach developed by the San Francisco Department of Public Health, as follows.

Step 1: Map Pedestrian Injuries

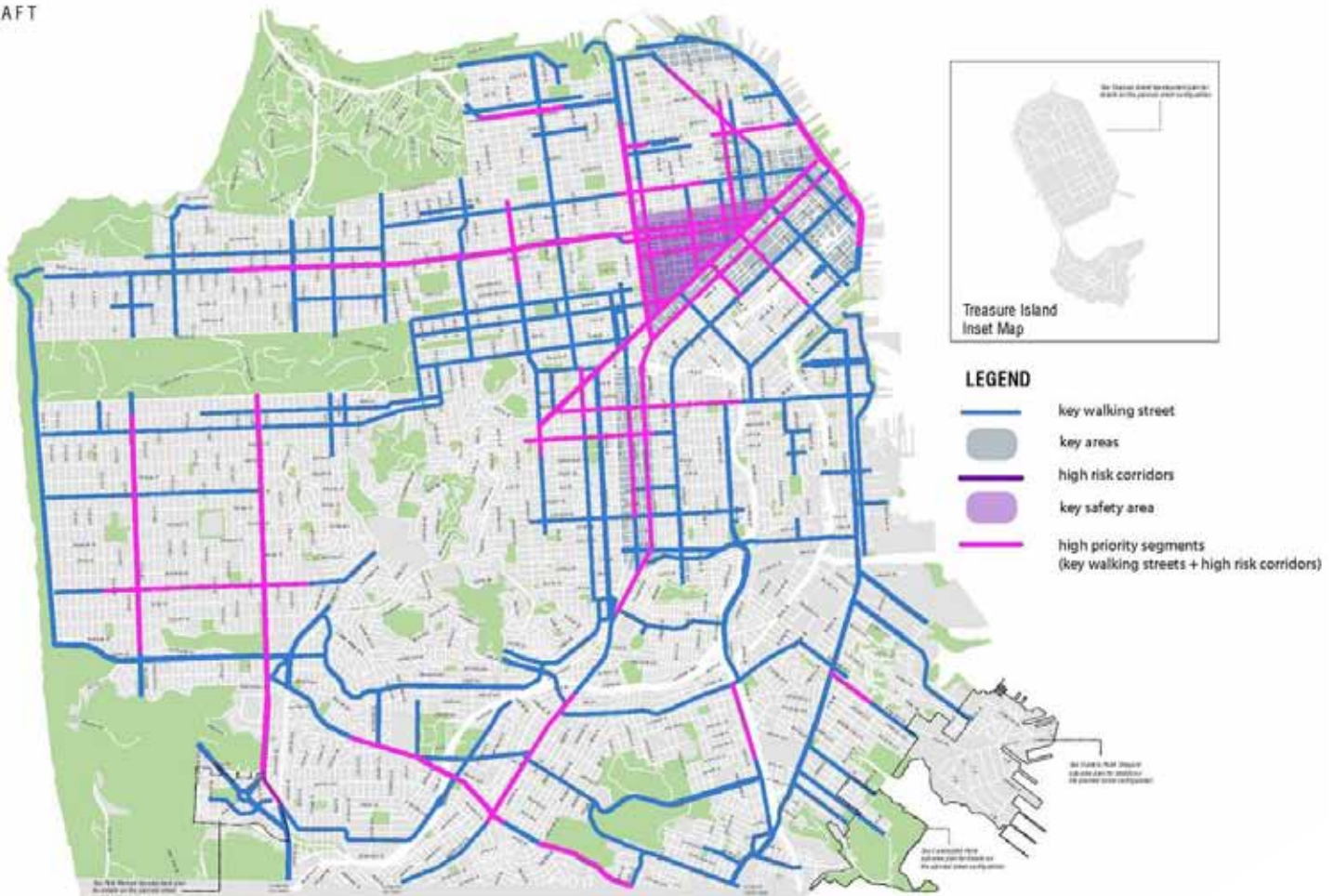
First, pedestrian injury counts were mapped to the street segments by aggregating injury counts (initially assigned to intersections based on primary and secondary streets in SWITRS) and then assigning them to their adjoining street segments.

Step 2: Assign to Street Segments

Next, potential high injury density corridors were defined by proximate street segments with weighted counts >9. San Francisco Department of Public Health determined the cut-point

Map 3

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SAN FRANCISCO

WalkFirst

Source: San Francisco Planning Department, San Francisco Department of Public Health, San Francisco Municipal Transportation Agency

of weighted counts >9 based on the distribution of the data; this cut-point also includes intersection-level hotspots with three or more severe/fatal collisions in the 5-year period. The identified corridors shown in purple in Map of High-Injury Density Corridors (Map 2) represent 6.7% of San Francisco’s street miles, and include 55% of all severe and fatal injuries and 51% of total pedestrian injuries in the five-year period.

Step 3: Define a Subset of High-Injury Density Street Segments as the Highest Priority

For purposes of developing a preliminary capital improvement list, segments from the high-injury density corridors were identified with at least 38 injury severity points per mile. These were designated as Phase 1A and 1B segments.

Intersection-Level Analysis:

While the primary safety needs analysis was oriented at the corridor, it was also valuable to determine whether stand-alone intersections have major safety issues. San Francisco now has

estimates of pedestrian crossing volumes at intersections. Rather than relying solely on absolute injury totals, this data provided estimates of injury rates per walk trip. Pedestrian safety was measured to the nearest intersection and was based on:

1. Severity-weighted number of pedestrian injuries (absolute number of pedestrian injuries at each intersection from SWITRS, 2005- 2009)
2. Pedestrian injury rate (per estimated number of pedestrian crossings), based on the Fehr & Peers/ SafeTREC “SF Pedestrian Volume Model”

Step 1: Map Pedestrian Collisions

All pedestrian injuries resulting from a collision with an automobile were mapped using data from SWITRS.

Step 2: Develop a score for intersections not included in high-injury density corridors

Table 3
PRELIMINARY CAPITAL PROJECT LIST

STREET SEGMENT OR INTERSECTION	FROM	TO	SEGMENT LENGTH (MILES)	COST TO IMPLEMENT		INTERSECTION IMPROVEMENTS						MID-BLOCK IMPROVEMENTS		
				LOW	HIGH	CORNER BULKHEADS (BEACH)	BUS BULKHEADS (BEACH)	CONVENTIONAL CROSSWALKS AND ADVANCED LANE LINES	FLASHING BEACONS (CROSSING)	PEDESTRIAN DOWNDOWN SIGNALS (CROSSING)	LIGHTING (INTERSECTION)	SEAWALL WEARINGS (BLOCK FACE)	SPEED REDUCTION MEASURES (BLOCK)	FLASHING BEACONS (CROSSING)
STREET SEGMENTS:														
19TH AVE.	TAIWAVAL	QUINTANA	0.40	\$1,738,500	\$1,738,500	X	X	X						X
6TH ST.	MARKET	HOWARD	0.20	\$88,000	\$10,463,000	X		X				X	X	
BROADWAY	BATTERY	COLUMBUS	0.30	\$816,000	\$1,566,000	X		X		X	X			
CASTRO	MARKET	18TH	0.10	\$238,000	\$550,500	X		X			X			
GEARY BLVD.	ARGUELLO	15TH AVE.	0.80	\$528,000	\$4,028,000	X		X						
GEARY BLVD.	VAN NESS	DIVISADERO	1.00	\$3,202,500	\$15,202,500	X		X		X		X	X	
GENEVA	1780	LONDON	0.60	\$1,205,500	\$10,330,500	X	X	X	X		X	X	X	
JONES	GOLDEN GATE	GEARY	0.30	\$163,000	\$1,788,000	X		X			X			
LEAVENWORTH	EDDY	ELLIS	0.06	\$44,000	\$294,000	X		X						
LOWIBARD	DIVISADERO	FILLMORE	0.40	\$1,801,000	\$7,801,000	X		X			X	X	X	
MARKET ST.	2ND	8TH	1.00	\$308,000	\$308,000			X						
MISSION ST.	C. CHAVEZ	COITLAND	0.10	\$1,058,000	\$2,933,000	X	X	X						
MISSION ST.	SILVER	ROSEPH	0.50	\$4,973,500	\$8,723,500	X	X	X	X	X	X			
MISSION ST.	23RD	22ND	1.10	\$44,000	\$294,000	X		X						
POWELL	MARKET	GEARY	0.10	\$132,000	\$882,000	X		X						
SILVER	BAYSHORE	SAN BRUNO	0.06	\$88,000	\$1,588,000			X				X	X	
STOCKTON	SACRAMENTO	BROADWAY	0.30	\$176,000	\$5,488,500	X		X				X		
SUNSET	TAIWAVAL	ULLOA	0.10	\$88,000	\$1,588,000			X				X	X	
TARAVAL	19TH AVE.	17TH AVE.	0.10	\$44,000	\$3,544,000	X						X		
TURK ST.	JONES	LEAVENWORTH	0.09	\$75,000	\$325,000	X		X			X			
SEGMENTS TOTAL:				\$16,811,000	\$78,436,000									
STANDALONE INTERSECTIONS:														
18TH ST	COLLINGWOOD ST			\$75,000	\$325,000	X					X			
19TH AVE.	JUBAH			\$625,000	\$625,000	X	X							
2ND ST.	BRYANT ST.			\$44,000	\$294,000	X		X						
3RD	PALOU			\$44,000	\$44,000			X						
BAYSHORE	ARIELTA			\$244,000	\$244,000	X		X			X			
BEACH	HYDE			\$44,000	\$231,500	X		X						
CALIFORNIA	HYDE			\$44,000	\$294,000	X		X						
BRING	7TH AVE.			\$0	\$125,000	X								
KIRKHAM	9TH AVE.			\$44,000	\$231,500	X		X						
MISSION	SICKLES			\$484,000	\$484,000	X		X		X	X			
INTERSECTIONS TOTAL:				\$1,648,000	\$2,898,000									
TOTAL				\$18,459,000	\$81,334,000									

Intersections were scored based on 3 points for every fatal and severe injury and 1 point for every intersection with pedestrian collisions with a visible injury and complaint of pain. All intersections with 5+ injury severity points were reviewed. The vast majority of these intersections were included in the high-injury density corridors. However, 16 intersections were identified that did not fall within these corridors; therefore, they are included as stand-alone intersections.

- Traffic Calming
- Accessibility
- Crime Locations

Preliminary Capital Project List

High Priority Segments represented 44 miles or about 3.3% of the City’s entire roadway system. To ensure geographic equity and recognizing limited funding, the capital project list was divided into three phases (1A, 1B and 1C). For the purpose of WalkFirst, a capital project list was developed for Phase 1A only as provided in Table 3. Improvements marked with an “x” are recommended improvements. Because these locations represent the streets with the highest need for safety improvements, the recommendations were highly focused on safety needs. The pedestrian improvements in Table 3 need further study, community outreach, environmental review and City adoption before they can be built.

Next Steps

The completion of the first phase of the WalkFirst project was an important milestone in an effort to improve pedestrian safety and walking conditions in San Francisco and to establish a framework to prioritize pedestrian safety improvements. While this project was made possible by a one year grant, a number of next steps were identified and should be pursued once additional funding is secured.

STEP 1 – Further Data Collection

Additional data pertaining to street and sidewalk features would need to be collected in order to create a comprehensive capital projects list.

STEP 2 - Refined Capital Projects List

Develop focused recommendations for highest priority streets for pedestrian safety improvements and public realm improvements.

STEP 3 - Additional Outreach

Citywide outreach on Map of Key Walking Streets and Areas, High- Injury Density Corridors, and preliminary project list of pedestrian safety improvements, and neighborhood level outreach to prioritize desired improvements.

STEP 4 - Develop Funding and Implementation Strategies

STEP 5 - Integrate WalkFirst framework into the City’s capital planning for street improvements.

This would include environmental review and formal adoptions by City bodies. For more detailed information, please visit <http://www.walkfirst.sf-planning.org>.

Step 3: Determine Pedestrian Injury Rate

To determine the pedestrian injury rate, the total intersection score was divided by the estimated annual pedestrian crossings at the intersection, based on the Fehr & Peers/SafeTREC “SF Pedestrian Volume Model.”

Step 4: Rank Stand-alone Intersections

These 16 stand-alone intersections were divided into two groups: Highest priority is intersections over 2.0 injury severity points per 10 million walk trips. Lower priority is intersections between 0.86 and 2.00 injury severity points per 10 million walk trips.

High Priority Segments

High priority segments (Map 3) represent the overlap between the Map of Key Walking Streets and Areas and the Map of High-Injury Density Corridors. These segments are the highest priority for pedestrian safety improvements, and add up to about 44 miles or about 3.3% of the City’s entire roadway system.

Street and Sidewalk Characteristics

San Francisco has a relatively high level of pedestrian infrastructure compared to many other cities, although there are imperfections often related to the age of the street system and high densities of the built environment. The physical conditions of the street and sidewalk affect pedestrian activity levels as well as pedestrian safety conditions. Street and Sidewalk Characteristics were considered in selecting and prioritizing specific capital improvements. However, the data for this category was incomplete, so it was not possible to analyze all street and sidewalk features in detail or to develop a comprehensive priority list that covers all locations and possible improvements.

The data that is available were used to recommend improvements to specific locations. The physical features fall into several categories:

- Traffic Control Devices
- Street Design and Streetscape
- Walking Space and Buffers
- Traffic Characteristics

Ana Validzic is the Pedestrian and Traffic Safety Program Manager at the San Francisco Department of Public Health. She coordinated various pedestrian safety initiatives in San Francisco for 10 years, including media campaigns, funding for community-based organizations, and educational programs. Currently, she manages WalkFirst and Safe Routes to School. She got her Masters in Public Health from the University of North Carolina at Chapel Hill.

References

- 1 This category used data from the 2000 Census.
- 2 This category used data from the Municipal Transportation Agency, Bay Area Rapid Transit, and Caltrain.
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- 4 This category used data from the San Francisco Convention and Visitors Bureau, Dun & Bradstreet Data, San Francisco Planning Department, San Francisco Department of Public Health, Mayor's Office on Disabilities, San Francisco Department of Information Technology, and San Francisco Unified School District.
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- 6 This category used data from the 2005-2009 American Community Survey 5-year estimates.
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The Louisville Loop Legacy: A Healthy Green City

By Mary Lou Northern

What if Louisville had grown as a city with few, if any, parkways, bike facilities, sidewalks, trails, or buses? What if Louisville relied on roads and cars to move people? Who would want to live here? Who would want to visit? What company would want to locate in such a place? Why would someone starting a career move here and others stay? But Louisville has never been that kind of city: it is a city with an ongoing vision for how people connect to places.



It is a vision embodied in the Louisville Loop, described by Mayor Greg Fischer in his 2011 State of the City Address as “one of the largest and most innovative initiatives of its kind in the world.”

An “estimated 100-mile loop trail system...(the Louisville Loop) will ring the city and link existing and new parks and neighborhoods to civic attractions, transportation alternatives, and recreation opportunities” *Louisville Loop Design Guidelines, December 2009*.

The idea to connect green space and transportation is not new. In 1779, when General George Rogers Clark, the city’s founder, submitted his recommendation for the development of Louisville to the Virginia Trustees he based it on the integration of green with movement. Local historian Douglas Stern documented Clark’s vision in his paper: *A History of Parks In Louisville From 1779 To 1890*. Clark’s plan called for a “progression of built-up places and interspersed public greens” that included “crosstown green belts...at increasing intervals of two, three, or four blocks as the distance from the river became greater.”

Town debt and politics slapped down the plan, but Clark’s vision endured. Over the next century, efforts to establish parks and greenbelts butted up against politics and opposition by a few property owners, stifling significant progress. Advocates, who understood that a progressive city values green space and active mobility, kept the vision alive and a few parks and boulevards were built.

Then, at the turn of the 20th century, Louisville set a bold vision to build a system of parks connected by parkways with bike and walking facilities. They engaged the father of American landscape architecture, Frederick Law Olmsted. Though the effort

was underscored by politics and development interests, the vision for green space and mobility resulted in the planning, design and construction of 18 Olmsted parks and five Olmsted parkways that were built over the next 50 years.

Because the new Board of Park Commissioners followed Olmsted’s advice about planning the new parks and parkways, the planning, design and construction of a park and parkway system for Louisville advanced. In the *First Annual Report of the Board of Park Commissioners: 1891 Report of F.L. Olmsted & Co. Landscape Architects*, Olmsted advised this: “There will not in all the future, be any work to be done in the development of your park system as to which it will be equally important to proceed deliberately and cautiously as that immediately before you.”

One hundred years later, as one century ended and the next began, Louisville carried that Olmsted vision to its next highest level when it committed to what had been called the County Loop. The idea for a county loop emerged when the Louisville and Jefferson County Planning Commission, with the concurrence of then County Judge David Armstrong and then Mayor Jerry Abramson, committed to a long-range vision for land use in Jefferson County and the City of Louisville. A multi-year process, involving hundreds of government professionals and citizens, produced the *Cornerstone 2020 Comprehensive Plan*. Elements of that plan stated the vision for what would become the Louisville Loop:

...a perimeter loop trail along the entire length of the Ohio River in the southwest... along Pond Creek eastward via McNeely Park to Floyds Fork... back to the Ohio River. The loop trail should be developed as a special recreational feature which could include public art and an interpretive program designed to reveal the natural and cultural history of the County.” *Parks and Open Space Master Plan, July 1995*.



The County Loop would “incorporate varying types and intensity of human use, including trails for passive recreation and alternative transportation.” *MSD Stream Corridor/Greenway Plan. March 1995.*

Credit for the County Loop concept has been claimed by several people, including two urban planners sitting at a bar envisioning Louisville’s future while doodling the outline of the county on a bar napkin. Some say the idea came from a college professor, who studied land use patterns. The birthing of the idea is not as important as the fact that the vision for the Loop emerged from the Cornerstone 2020 public process.

Though planning for the Louisville Loop picked up in 2005, sections of what was to become the Loop were completed in the 1990s. That’s when the city and the county built the Riverwalk from Downtown to Shawnee Park and the Southwest Levee Trail from Lees Lane to the Farnsley-Moreman Landing.

In 2003 city and county governments merged into a new city, with Jerry Abramson as its first mayor. In 2004 he challenged his leadership team to bring forth ideas to unite the old city and the old county. The County Loop idea emerged. An on-road bike lane was striped and a short section of trail was built, joining the Riverwalk and Levee Trail into a 23-mile continuous active transportation facility that united downtown to points west and south.

Then the planning for the rest of the Loop route got underway. By 2013 all the route planning will be done. Route plans are the prerequisite to secure federal and state transportation funding for design and construction. Local funds have leveraged federal funds at an 80/20 ratio

Meanwhile, city employees and citizens developed the strategic plan that guides the multi-layered, multi-department work of the Louisville Loop. The plan’s focus is the Loop’s potential as the binding element of an integrated active transportation system that will put Louisville at the top of the list of the greenest and healthiest cities in the United States.

The team realized that the Loop had to develop both public and private partners willing to share resources, personnel, funding and ideas. A Louisville Loop Work Group was formed with representatives from Metro Parks, MSD, TARC, Planning and Design Services, Public Works, Kentuckiana Planning and Development Authority, 21st Century Parks and the Kentucky Transportation Cabinet and recently the new Department of Economic Growth and Innovation. Citizens are engaged through an advocacy committee and community meetings. The Work Group determined that planning the route needed to be the first priority to attract funding for design, construction and maintenance.

With the support of the Olmsted Conservancy, an advocacy group, the decision was made to incorporate the Olmsted parkway system, and its connectivity to the Olmsted parks, into the fabric of the Loop. Eighteen Olmsted parks anchor nearly 14,000 acres

of green space including the Jefferson Memorial Forest, which, at over 6,300 acres, is the largest city-owned forest in the country. The Forest will be accessible from the Loop.

The Olmsted Parkway Shared-Use Path project will improve the existing bike and pedestrian paths and add new paths for pedestrians and cyclists along nearly 12 miles of the five Olmsted parkways. This project aims to connect people to parks, neighborhoods, schools, businesses, and health care on the parkways as Olmsted envisioned.

This active transportation network of Southern, Algonquin, Southwestern, Northwestern and Eastern parkways form the centerpiece of the urban portion of the Louisville Loop. Planning and design work is underway to improve the facilities on the parkways and its linkages to the Louisville Loop as detailed in the *1994 Louisville Olmsted Parks and Parkway Master Plan*:

“The character of the parkways should be renewed and multi-use should be provided consistently along the parkway length. The parkway system requires more complete linkage to develop greater continuity. Both the parkways and the proposed city street links should become the green corridors of Louisville.”

The suburban sections of the Loop stand on equal footing with the urban sections of the Loop. A Southwest Greenways Study maps proposed and actual sidewalks, the Loop route, greenways and bike facilities to businesses, schools, parks and attractions from the Watterson Expressway south to the county line and east to I-65. It will serve as a blueprint for an active transportation network in that part of the city, and lessons learned in this analysis will be used elsewhere. The greenways study is funded by a grant from the federal Centers for Disease Control and Prevention to improve the mobility and health of the citizens.

In 2012 construction will begin on another nearly three miles of the Loop connecting the existing Farnsley-Moreman Landing to people who live and work in the Watson Lane area. Route planning from Watson Lane to the Jefferson Memorial Forest and Fairdale is nearly complete. The next and final route to be determined gets underway this year. It will identify the route as it connects from Fairdale to the airport Renaissance Zone, McNeely Lake Park and to Bardstown Road.

The Loop’s public/private partner, 21st Century Parks will build 19 miles of the Loop linking three new parks along Floyds Fork. Metro Parks is partnering with the Kentucky Transportation Cabinet on the section from Middletown to Eastwood (dubbed the MET) along Shelbyville Road. Parks provides trail expertise as KYTC includes the Loop in road and interchange improvements.

The route planning team, led by Metro Parks, worked with a trail committee from the city of Anchorage to figure out the route from Shelbyville Road to E.P. Sawyer Park. With its consulting team, Metro Parks defined the route north and east to River Road where KYTC will build the section that connects Prospect to the Loop. Public Works secured a National Scenic ByWay



grant to identify the cultural assets of the route as it travels along River Road, another multi-agency effort. That same cooperative approach, this time including KYTC, continues from River Road Cox's Park to Champions Park and onward to mile one at the Big Four Bridge in Waterfront Park.

The Louisville Loop will cross seven major road arterials: Dixie Highway, National Turnpike, Preston Highway, Bardstown, Taylorsville, Shelbyville and Brownsboro Roads. It will engage with five expressways, either on existing overpasses, tunnels or planned new bridges. It will criss-cross transit routes and neighborhood pathways. It will weave along or near the Ohio River and major creeks, including but not limited to: Pond Creek, Beargrass Creek, Floyds Fork, and Harrods Creek. Driving all of this is the focus on how transit, roads, bike lanes, and multi-use paths give citizens a safe, active and healthy way to move from place to place while protecting the cultural and natural assets of the city and encouraging economic and innovative growth.

All of these elements are addressed as completely as possible in the planning process. Without the cooperation among city, state and federal agencies, the Louisville Loop might still be a drawing on a cocktail napkin. The multi-agency approach allows for flexibility and maximum resource use. At the heart of all the work is this focus: listen to, look at, and respect the land; listen to and respect the people.

Despite the country's down economy and its impact on cities, enormous progress has been made in a short time because of the cooperative efforts of the multiple agencies. Nearly \$75 million in federal and state transportation funding and from the Corps of Engineers have gone toward route planning, parkway, roadway, bike facility and drainage improvements. An additional \$38 million in federal transportation funds was secured by the Loop's private partner, 21st Century Parks.

Founded in 2004 by David Jones, Sr. and his son, Dan Jones, 21st Century Parks Inc. will build and open 19 miles of the Louisville Loop by 2015. That section will thread through nearly 4,000 acres of new parkland, called the Parklands, in the city's east and southeast neighborhoods and eventually link to the rest of the Loop at Bardstown Road and Shelbyville Road.

Planning for the final segment, National Turnpike to Bardstown Road, will be completed by 2013. By 2015, the estimated mileage for the completed Louisville Loop, including the Parkland area, will be nearly sixty miles, because of the public/private partnerships. These partnerships extend beyond the agencies that build roads, sidewalks, provide transit, and so on. MSD and the U.S. Corps of Engineers worked together on the Levee Trail as part of a stream mitigation effort on the Loop section along Pond Creek from Lambourne Avenue to Manslick Road.

The Louisville Health Department and the Centers for Disease Control and Prevention became Loop partners when the project received \$2.2 million of an \$8 million grant to target the prevention of disease and the promotion of healthy lifestyles in 12

neighborhoods. The Loop runs through 10 of those neighborhoods. As a result of this grant, the Loop will have trailheads and signage in place by spring 2012 on the built section, including safety plans in a joint effort with LMPD, Fire and Rescue, and Metrosafe. The safety plan will imprint on the entire Loop.

Most importantly, the grant sharpened the focus on the Loop as a pivotal part of the city's active transportation network. It guided us in answering these questions: How do we stay healthy? How do we move? As the Loop circles the city and connects neighbor to neighbor and person to place, it does and will provide a safe, attractive way for people to move and by moving get and stay healthy.

The draft of *The Louisville Loop Wayfinding Plan* states the intent of the grant: "The purpose behind an anti-obesity grant funding this project is to use the Louisville Loop as a tool to increase activity and use of the Loop in high obesity areas." Data shows that six to 10 percent of children who live within one mile of the finished Loop are obese. "Thirty years ago, two-thirds of all children walked or biked to school. Today, only 13 percent of children walk or bike to school and 73 percent of children fall short of recommended minimum weekly physical activity" (Wayfinding Plan draft).

This inactivity crises sets Louisville up as an unhealthy city but as stated in the *Louisville Loop Design Guidelines*, the Mayor's Healthy Hometown Movement, Active Louisville, and Bike Louisville share goals with the Loop to make "Louisville a healthy and safe community. The Louisville Loop will play a key role in achieving this goal." The Loop is a catalyst that "continues to build upon the high quality of life in Louisville, promoting alternative transportation and establishing a strong community connection."

Cities committed to active transportation networks have found financial benefits, especially when trails and transit link. The November 2011 issue of *Parks and Recreation* magazine cites an anticipated \$20 billion in new economic development when the Atlanta Beltline is completed. Chicago's greenways have provided "an ecologically sound way to reclaim formerly contaminated sites." Cleveland's Emerald Necklace of parks and greenways "has become one of the most visited attractions in Ohio." Cities are also finding reduction in traffic congestion and commute times, improved air quality and healthier citizens.

Projections show that properties within ½ mile of the Monon Trail in Indianapolis experience a 14 percent increase in sales price due to trail proximity. "This translates into a combined premium of \$115.7 million in property values for the homes within one-half mile of the Monon Trail" *Understanding the economic benefits of trails on residential property values in the presence of spatial dependence. Oliver Parent and Rainer vom Hofe, University of Cincinnati.*

A study by Duke University students, *Impacts of Proposed Greenways in Southwest Louisville, Kentucky, 2010* documents these economic impacts: potential increased home resale value,



which increases property tax revenue; decrease in crime; safe routes for commuting; health benefits; increased tourism; business attraction and retention; protection of natural resources; and documentation of the area's history and physiology.

Many studies have been done about how these trails increase a city's revenue and save city tax dollars. To cite those studies would add pages to this piece. An excellent resource for this data is the American Trail Association webpage: www.americantrails.org. Even with all the data in support of active transportation networks, in today's economy the most asked question is how can we afford to build it? The question should be: How can we afford not to build it?

The calculation of the economic impact of the Louisville Loop is still to be made, the least of which is the number of jobs for engineers, planners, landscape architects and their firms that have been engaged in the planning, design and construction of its segments. Statistics from other cities building trail systems document the economic and health impacts to those cities and support the need for an analysis of the full economic benefits of this active transportation network.

The Loop team is partnering with the University of Louisville to develop two ways to measure benefits: a method to assess health impacts; and, identification of potential economic development nodes so that the City can maximize business attraction and retention for the city.

Meanwhile, the work goes on to improve the built portions of the Loop. Public Works, MSD and Parks has short and long term maintenance plans. Those departments do not have sufficient budgets to cover all the work, which necessitates enlisting volunteers. Recognizing that funds will be needed to maintain the Loop as it is built, the exploration of long-term funding opportunities has also begun.

Interest in the Loop grows. After two training sessions sponsored by Metro Parks and the Louisville Metro Police, one hundred and two volunteers signed up for the Loop Trailwatch Team. They will be the eyes and the ears on the Loop, reporting maintenance or safety issues that they encounter as they ride and walk. Another group of citizens, cyclists and walkers, is forming a charitable organization to advocate for the Loop and to raise funds.

As the linchpin for Louisville's active transportation network, the Louisville Loop will provide, across the city's 365 square miles, an interconnected system of bike, pedestrian and transit facilities that uses green space, woods, watersheds, roads, and sidewalks to move people safely and to improve their health and the health of the land. It will do for the entire city what the Olmsted parks and parkways have done for the city over the last 100 plus years and what together the parks, parkways and Loop will do for the city in the next 100 years and beyond.

As Mayor Greg Fischer stated in the Louisville Loop Strategic Plan: 2010:

"The Louisville Loop will not only set us apart as a desirable city... it will bring us together as a community... it will be a wedding ring for our city... joining neighborhoods... helping connect people to recreation, to their work and to the places where they do business."

Mary Lou Northern oversees the coordination of the Louisville Loop for the City of Louisville. She is a founding member of the 21st Century Parks board and sat on the Olmsted Conservancy Board from 2003 until 2010. She served on the Advisory Review Committee for Cornerstone 2020, as chairman of the board of the Transit Authority of River City from 1994 to 2003 and as chairman of the 2002 Olmsted Parkway Design Standards Advisory Committee. Her writing has appeared in over a dozen local, regional, national and international publications.

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The Safe Routes to School Program: From Creation to Integration

Co-authored by Brooke Driesse,
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Today, just 13 percent of children ages 5 to 14 walk and bicycle to and from school—a dramatic drop from 1969, when nearly 50 percent of children walked to school. Nearly 85 percent of children are either bused or driven by their parents, costing school districts and families billions in gasoline each year.¹ In addition, the sheer volume of vehicles crowded onto the streets around schools creates traffic congestion, air pollution and wear and tear on roads.

Childhood obesity has increased among children ages 6 to 11 from 4 percent in 1969 to 19.6 percent in 2007.² Nearly one in three young people in the United States—more than 23 million children and adolescents—are overweight or obese.³ Approximately 70 percent of obese youth ages 10 to 17 will grow up to be obese adults.⁴ And the total cost of treating obesity is estimated at \$168 billion per year, more than 16 percent of national medical care spending.⁵

Fortunately, local school systems and governments can turn to the federal Safe Routes to School program for help in addressing these pressing safety and congestion issues. Created in 2005 as part of the federal SAFETEA-LU transportation law, the Safe Routes to School program makes it safer for children to walk and bicycle to and from school. Approximately \$950 million has been allocated to state departments of transportation from fiscal years 2005 to 2011, with current funding at \$183 million per year following extensions of SAFETEA-LU.

State departments of transportation award these federal funds, which do not require a match, to local governments and school districts for comprehensive efforts to improve safety and get more children walking and bicycling to school. The bulk of funding (70% to 90%) is spent on infrastructure improvements within a two-mile radius of schools. Examples of critical infrastructure include sidewalks, bike paths, crosswalks, school zone signage and traffic calming. The remaining 10 percent to 30 percent is allocated for programs that complement the infrastructure—such as teaching children traffic safety skills, ensuring that motorists are driving safely around schools, and running programs that encourage more children to walk and bicycle. Safe Routes to School infrastructure projects and programs benefit children, families and adults on more than just the trip to school. Because this infrastructure is located in the neighborhoods around schools, it also provides safe ways for families to walk and bicycle to parks, stores and other destinations—providing community-wide benefits.

The SAFETEA-LU legislation also created a Safe Routes to School Clearinghouse to provide general public information and support to state Departments of Transportation, as well as a Task Force that developed strategies for advancing Safe Routes to School nationwide. Additionally, the Federal Highways Administration (FHWA) is responsible for administering the Safe Routes to School program funds to State Departments of Transportation.

All 50 states and the District of Columbia are actively implementing the Safe Routes to School program, providing guidance and funding to local communities and schools. As of September 2011, 74 percent of available funds have been awarded. At least 12,382 schools have benefited or will benefit from funds announced by state Safe Routes to School programs, with approximately \$710.7 million announced for local and statewide Safe Routes to School activities since the national Safe Routes to School program began.⁶

The Safe Routes to School National Partnership's Integral Role in Advancing Safe Routes to School

Launched in August 2005, the Safe Routes to School National Partnership (National Partnership) is a fast-growing network of more than 550 organizations, government agencies and professional groups working to set goals, share best practices, leverage infrastructure and program funding, and advance policy change to help agencies that implement Safe Routes to School programs. The Safe Routes to School National Partnership's mission is to advocate for safe walking and bicycling to and from schools, and in daily life, to improve the health and well-being of America's children and to foster the creation of livable, sustainable communities.

In 2007, the National Partnership initiated the state network project in nine states and the District of Columbia. For 2010 and 2011, the project was funded in the District of Columbia and nineteen states, resulting in many policy successes. The Robert Wood Johnson Foundation recently provided a three-year renewal grant (2012 through 2014) for leveraging federal funding to advance physical activity opportunities for kids that will build on policy wins from recent years, and advance built environment improvements in all 50 states and the District of Columbia, including the development of a new national learning network. The National Partnership also has a regional network project, launched in 2010 with support from Kaiser Permanente, advancing built environ-



ment policy work with regional government agencies which include the areas of Southern California (Southern California Association of Governments--SCAG), the San Francisco Bay Area (Metropolitan Transportation Commission – MTC), the Greater Washington DC Area (Metropolitan Washington Council of Government--MWCOG) and the Atlanta Region (Atlanta Regional Commission--ARC).

The National Partnership offers dozens of resources and publications for use in promoting and documenting the success and goals of the national Safe Routes to School movement, in addition to a free monthly E-Newsletter, up-to-date research, a thriving list-serve for local practitioners and much more. The National Partnership also provides technical assistance (TA) to Communities Putting Prevention to Work (CPPW), communities that are working on Safe Routes to School plans and related policies, and we plan to expand our technical assistance department.

A Sampling of Successes to Date

Increasing Physical Activity

Studies clearly show that children who walk and bicycle to school are more physically active, have lower body mass index scores, lower obesity levels, and are more likely to meet physical activity guidelines than students who are bused or driven to school.^{7,8,9,10} An evaluation of the America on the Move initiative found that two small lifestyle changes—specifically eliminating 100 calories per day and walking an additional 2,000 steps per day (roughly one mile)—can help address childhood obesity by preventing excess weight gain.¹¹ This story from Alpine, Utah, exemplifies the role Safe Routes to School can play in increasing physical activity in daily life.

Located in the small city of Alpine, population 7,000, Alpine Elementary School is located in a compact area without much room for parking and drop-off areas. Nearly three-quarters of children live close enough to walk to school, but traffic congestion around the school has discouraged many from doing so. The congestion contributed to two children being struck by cars while walking to school. While the children only suffered minor injuries, it prompted the community to work together to embark on a Safe Routes to School initiative. Before applying for funding, parents, school officials and the city engineer mapped the routes to school. The city made some initial low-cost improvements, such as repainting crosswalks and adding school zone signs.

With two federal Safe Routes to School awards totaling \$71,500, Alpine Elementary was able to make some additional infrastructure improvements, including creating a safe walking path to a rear entrance of the school and installing speed monitoring signs. Most importantly for Alpine Elementary, however, was the funding to support education and encouragement activities. They have placed a strong emphasis on teaching children to safely walk and bicycle to school. In partnership with parents, Alpine Elementary holds regular walk-to-school events, walking school buses and special events to ensure the streets and sidewalks around the school are safe.

The biggest key to motivating students to walk and bicycle more has been Alpine Elementary's partnership with a "sister school" in Kenya. For the past three years, as students walk and bicycle, they earn money to help support their sister school's feeding program. In three years' time, students have raised enough funding to support three months of lunches for the African school, plus enough donations for the school to purchase a cow, goats, chickens and fruit. All told, the number of students who regularly walk and bicycle to school has increased from 32 percent in 2008 to 50 percent in 2011. With more students walking and bicycling to school, there is less traffic congestion around the school with 60 fewer cars com-



muting to the school campus each day. In a little over half of a year (September 2010 to March 2011), students walked a total of 28,000 miles and experienced more than 500,000 minutes of physical activity.

Improving safety

The infrastructure improvements being made through Safe Routes to School initiatives are proven to reduce pedestrian and bicycle deaths and injuries. Pedestrians are more than twice as likely to be struck by a car when walking in a location without sidewalks as they are when walking in an area with sidewalks.¹² Adding speed humps decreases the risk that a pedestrian will be struck by 53 percent.¹³ Installing refuge islands in crosswalks, which are protected medians that allow pedestrians to safely wait in the middle of the street for a break in traffic before continuing to cross, can reduce the likelihood of pedestrian-vehicle crashes by 66 percent.¹⁴ Simply increasing street lighting to improve visibility can reduce pedestrian-vehicle crashes by 59 percent.¹⁵ This success story from Sheffield Village and Sheffield Lake, Ohio show one of many examples of safety improvements made by implementing the Safe Routes to School program.

The school district covers two small towns, Sheffield Village and Sheffield Lake. Students attending Sheffield Middle School have to travel along Harris Road, which is a narrow two-lane road with no sidewalks. Because busing is limited due to budget constraints, most children are either dropped off at school by their parents, creating significant traffic congestion, or walk or bicycle on the edge of the same high-traffic road. Cars must veer around the children on the very narrow road, which has no shoulder. As a result of this dangerous situation, in October 2009, a student riding his bicycle home from school was injured when he was struck by a car on Harris Road. School and local government officials agreed that improving safety along Harris Road was a top priority, but did not have the financial resources to make the improvements using local funds.

In 2010, Sheffield received a \$475,000 federal Safe Routes to School award to construct a sidewalk along Harris Road from the middle school to the major population center in Sheffield Lake. The school administrator estimates that approximately 150 children at the middle school who are not currently bused will benefit from the significant safety improvements and congestion reduction resulting from the creation of a safe and separate place for children to walk and bicycle. The project is also benefitting the nearby high school, as the district has had to eliminate busing for high school students due to financial pressures.

Policy Change

State policies have a profound impact on the safety, convenience and ability of children to be able to walk and bicycle to schools. The National Partnership's state network project has a strong focus on advancing state-level policy reform in conjunction with other partners and state agencies. For the past five years, the networks worked on a variety of policies. This Lexington, Kentucky example touts success with joint-use agreement policies.

William Wells Brown Elementary, which was built for joint-use of its facilities, is located in a lower-income area of Lexington, where 96 percent of the students qualify for free or reduced-price meals. The county parks and recreation department and public school district signed a joint-use agreement, which protects the school from liability and allows community activities in the school facility, including classes about financial literacy, adult wellness and healthy cooking.

Conclusion

In conclusion, because of the Safe Routes to School movement and the National Partnership, new bike lanes, pathways, sidewalks and street crossings are being built throughout the nation. As a result, children are safer and more active. It is already evident that Safe Routes to School is making a difference: one study revealed that schools receiving infrastructure improvements through Safe Routes to School funding saw walking and bicycling increases by as much as 200 percent.¹⁶ Safe Routes to School is positively changing lives – in addition to bettering children's health. One principal of a Columbia, Missouri elementary school said, "Safe Routes to School promotes a greater sense of community among our students, and I believe it has contributed to our school's tremendous turnaround in both academics and behaviors." Safe Routes to School is truly changing the habits of an entire generation through bicycling and walking one step – or roll – at a time.

The Safe Routes to School National Partnership (the National Partnership) is a fast-growing network of more than 550 organizations and professional groups working to set goals, share best practices, leverage infrastructure and program funding, and advance policy change to help agencies that implement Safe Routes to School programs across the nation. The National Partnership's mission is to advocate for safe walking and bicycling to and from schools, and in daily life, to improve the health and well-being of America's children and to foster the creation of livable, sustainable communities. The National Partnership is hosted by Bikes Belong Foundation, a 501(c)(3) non-profit which is a sister organization to Bikes Belong Coalition.



Brooke Driesse executes internal communications among staff, manages the production of public relations materials, and organizes media outreach.

Prior to joining the National Partnership, Brooke worked in public relations and marketing at a crisis communications firm, an international association for defense lawyers and the U.S. Department of Justice Office of Public Affairs. Previously, Brooke taught middle school and high school in San Diego County, and saw firsthand the need for a program like Safe Routes to School to establish the importance of an active lifestyle early in childhood.

Brooke received a B.S. in Political Communication from The University of Texas at Austin in 2003, and has a long history of volunteering with children and young adults through various philanthropic organizations.

Margo Pedroso serves as the deputy director for the Safe Routes to School National Partnership. In this role, she manages government relations, grassroots lobbying, policy research and analysis to advance the SRTS national movement, and assists the Director with partner outreach, fundraising, and strategic planning.

Prior to joining the SRTS National Partnership, Margo spearheaded public policy and advocacy for MENTOR/National Mentoring Partnership. During her tenure, she built bipartisan Congressional support for youth mentoring, resulting in a four-fold increase in federal funding for mentoring programs and a Congressional pilot program that allows mentoring programs to use FBI background checks to screen volunteers. Margo served as the policy liaison with human service organizations, state partners, and federal agencies. She also carried out a wide-reaching initiative to conduct a national conversation on mentoring and develop a "National Agenda for Action" to expand the availability and quality of youth mentoring.

Margo has also held positions with the federal Institute of Museum and Library Services and the U.S. House of Representatives Committee on Education and the Workforce, focused on government relations and education policy. In total, she has over twelve years of experience handling appropriations and policy issues, focusing particularly on priorities that will improve the lives of children.

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