

sustainable

TRANSPORT

Winter 2014 | No. 25

A New Way Forward for Buenos Aires

Inside:
Janette Sadik-Khan
Talks New York City's
Transport Renaissance



Join ITDP today.

Show your support for sustainable transportation solutions that cut emissions, reduce poverty, and improve the quality of urban life. Make a donation to ITDP today. www.itdp.org/donate



Mexico City's Ecobici bike share program is extremely popular, with over 17,000 trips per day.



6



10



16



20



35

Contents

Winter 2014 | No. 25

- | | | | |
|----|--|----|--|
| 4 | Letter from the CEO:
Escaping the Urban Poverty Trap | 28 | Integrated Car-Sharing:
An Interview with
Michael Glotz-Richter |
| 6 | A New Standard for
Transit-Oriented Development
By Mariane Jang | 31 | Chennai Walks Again
By Advait Jani |
| 8 | BRT Brings More Bang for the Buck
By Jemilah Magnusson | 32 | Better Streets, Better Cities,
and Less Parking
By Michael Kodransky |
| 10 | The World's Widest Avenue
Gets a Transit Makeover
By Clara Rasore | 34 | The Power of a Park(ing) Space |
| 13 | A New BRT in the Heart of China
By Karl Fjellstrom and Xianyuan Zhu | 35 | In the U.S., Bike Share Hits Its
Tipping Point
By Stephanie Lotshaw and Colin Hughes |
| 16 | Janette Sadik-Khan talks New York
City's Transport Renaissance | 39 | Riding to Fight Climate Change
with Team ITDP |
| 20 | In Brazil, It's about Much More
than Ten Cents
By Clarisse Linke | 39 | Remembering Joel Gaalswyk |
| 22 | Readying Rio for 2016 and Beyond | | |
| 24 | Housing, Transport, and the Fight
for Equitable Cities
By Aimée Gauthier | | |



Cover: One of the 33 newly pedestrianized blocks in the Microcentro area of Buenos Aires, Argentina, part of the revitalized streetscape of the 9 de Julio bus corridor.

Image: Fabricio Di Dio

A publication of:



9 East 19th Street, 7th Floor
New York, NY 10003
Tel. 212.629.8001 Fax 646.380.2360
mobility@itdp.org www.itdp.org
@ITDP_HQ
facebook.com/ITDP.org

Publisher: **Walter Hook**

Editors: **Graham T. Beck & Jemilah Magnusson**

Design & Production: **Cliff Harris**

BOARD OF DIRECTORS:

Enrique Peñalosa, *President*
Former Mayor, Bogotá, Colombia

Joseph Ryan, *Vice President*
ClimateWorks Foundation

Jules Flynn, *Secretary*
New York Metropolitan
Transportation Authority

Bob Hambrecht, *Treasurer*

Dan Abbasi
Game Change Capital and the
Children's Investment Fund Foundation

John Flaherty
The Carlyle Group

Walter Hook, CEO
ITDP

Paul Steely White
Transportation Alternatives

Felipe Targa
Former Deputy Transport Minister,
Colombia

Heather Thompson
HT Strategy

Michael Replogle
Founder, ITDP
Emeritus

Gerhard Menckhoff
World Bank Group, Retired
Emeritus

All views expressed in this magazine are views of the authors and not necessarily the view of ITDP. *Sustainable Transport* welcomes submissions of articles about sustainable transportation activities worldwide.

ITDP is a non-profit advocacy, research, and project-implementing agency whose mission is to promote sustainable and equitable transportation practice and policy in developing countries. ITDP is registered in the United States as a charitable organization that is eligible for tax-deductible contributions under the Internal Revenue Service code. ITDP members include bicycle activists, transportation planners, economic development specialists, small business owners, environmentalists, and other professionals from the U.S. and around the world.

Printed on Recycled Paper

Escaping the Urban Poverty Trap

By Walter Hook



Here in the U.S., following World War II, when our middle class took to their new cars and moved away from our transit-rich cities to the car-dependent suburbs, a huge segment of the population became trapped in a world of agonizing commutes, strip malls, fast food drive-in windows, and minivans. Back in the cities they left behind—in neighborhoods like New York’s South Bronx, Chicago’s South Side, and Compton in Los Angeles—the poor could no longer access the jobs and opportunities that migrated to the suburbs. Without better options, many young people lost hope, turned to crime, and blamed a system that had, quite literally, packed up and moved away. The hardworking low-waged, the chronically unemployed, and those resorting to criminality were lumped together and warehoused in poorly maintained public housing complexes. From there, social problems spread like a cancer through more and more of the urban core, where intergenerational poverty took hold in pockets of lost opportunity. It turned out that concentrating the poor with troubled people in shattered urban areas was not a good idea for anybody.

In the U.S., this sort of urban blight is rapidly becoming part of a bygone era. Our cities are revitalizing and remaking themselves around new downtowns and new transit nodes. In New York, the South Bronx, well served by the bus and subway system, is again attracting major employ-

ers and development. Overcoming this strange legacy of urban blight was the life’s work of a talented group of municipal officials and their partners among non-profit urban redevelopment and affordable housing professionals. The U.S. philanthropic community, such as the Ford Foundation and many others, played a critical role in this urban renaissance, creating networks of community development corporations that catalyzed urban redevelopment. While the U.S. doesn’t build that much affordable housing these days, what it does build is better integrated into stable communities. It looks like the surrounding buildings, it is often in mixed-use developments, and increasingly, it is located adjacent to reasonably high quality transit.

Today, in the developing world, we are seeing a similar alarming trend where the wealthy and aspiring middle class are relocating to new automobile-oriented gated enclaves. Meanwhile, the poor remain concentrated in the deteriorating parts of the city or on marginal land in informal settlements often in the distant urban periphery. Repeating the mistakes we made in the U.S., affordable housing policy in many of these countries, to the extent that it exists at all, is too often concentrating the poor in low income districts far from the nearest jobs.

A poor South African family probably lives in a distant township, commuting several hours a day if they are lucky enough to have jobs. While the Government has built hundreds of thousands of affordable homes, the vast majority are in distant townships in low-income areas, reinforcing the legacy of apartheid. Today in South Africa, the poor spend 17 percent of their income on transport. Only food (18 percent) and housing and utilities (32 percent) are a bigger drain on the household income. This situation is typical in many of the megacities of the developing world.

A growing number of these cities are aware of these problems and turning to ITDP for help. They realize that if they are to tackle the problem of urban poverty, it’s critical that the housing burden and the mobility burden of the urban poor be addressed simultaneously.

Over the next two decades, hundreds of millions of people will move to cities in Asia and Africa. If housing development follows the patterns of sprawl, pushing the poor to the periphery, these new residents will join the hundreds of millions who are already stuck in isolated concentrations of continuous poverty.

There are two main ways to tackle poverty with transportation: Reduce the time and costs of travel for lower income populations, and help the poor get better access to jobs. High-quality, low-cost BRT can reduce the travel time and travel cost burden on the poor for a much lower investment than other alternatives. The working poor often make up a plurality of BRT system users, and a Gold Standard TransOeste BRT can cut their travel time in half.

In Brazil, the new Gold Standard Transoeste BRT is saving the average



A rendering of Avenida Paris in Rio de Janeiro, Brazil, shows the density, bike- and pedestrian-friendly design elements, and mix of commercial and residential uses that are essential elements of Transit-oriented Development.

passenger 40 minutes per trip, or about 14 days a year. If we put a value on this time savings, using one-third of the average hourly wage for the city, TransOeste is saving its users 70 million Reais per year, or 35 million U.S. dollars.

There are other ways that sprawl-inducing housing and transport policy is driving up the cost of living for poor people. One way is displacement. One section of the Linha Amarela highway that was built through Rio de Janeiro forced the involuntary relocation of 3,000 families. The major shopping malls in downtown Jakarta were previously low income kampongs, which are now the parking lots for wealthy motorists. The 5,000 parking spaces around one of the major shopping malls in Barra di Tijuca in Rio takes up roughly the same amount of land as Rocinha, Rio's largest favela, which houses 69,000 people.

Transportation also generates employment for the poor. Bus operations and construction work are some of the best jobs for lifting families out of poverty. Because BRT is constructed and operated with more local labor and less technology, the local employment benefits are several times greater than for rail-based mass transit technologies.

Fortunately, many cities are waking up to these problems. They are investing in high-quality, affordable, sustainable transport solutions such as BRT, car sharing, and bike sharing. The next step is to anchor Gold Standard transit-oriented development (TOD) around Gold Standard BRT.

ITDP scoured the U.S., where TOD efforts are more advanced compared to developing cities, to find out which transit investments leveraged the most transit-oriented development per dollar and why. We found a best practice in Cleveland, Ohio, where the HealthLine BRT leveraged a \$50 million transit investment into \$5.8 billion in new transit-oriented development. With the transit investment at such a modest figure, other city, state, and national funds were available to invest in infrastructure upgrades, like burying power lines, fiber-optic cables, brownfield cleanup, land assembly, and affordable housing. This \$5.8 billion included investments into new businesses, nursing schools, and medical technology start-ups that added

hundreds of jobs to the corridor, as well as hundreds of units of affordable and student housing.

The secret to success in every instance turned out to be intelligent government effort. Cleveland's accomplishment is largely due to their Transit, Planning, and Urban Development departments, which partnered with local community development corporations, and anchor institutions like hospitals and universities that first re-zoned and then actively recruited developers and businesses to the corridor. Success was not a story of the magical unseen hand of the market acting on its own, it was a story of entrepreneurial municipal government hustling to make TOD happen. This is the lesson that ITDP hopes to bring to the developing world: Shaping the urban future is not just about market signals, though they help; it's about intelligent government planning and talented government-led execution.

This year, ITDP released The TOD Standard, a companion piece to The BRT Standard, first released in 2012 (see page 6). ITDP has expanded our organizational focus to delivering an affordable, Gold Standard TOD adjacent to Gold Standard BRTs in each of our core regions. This is in line with new national and municipal political mandates to push TOD in South Africa, India, Mexico, and Brazil. We are experts in designing, building and implementing Gold Standard BRTs, and now we are rapidly learning how to best implement Gold Standard TOD in a developing-country context. This work will be critical for nations and regions that wish to leapfrog many of the design blunders that have been troubling U.S. cities, residents, and municipal budgets for many years.

As we look forward to new challenges and opportunities in the coming year, I want to acknowledge the hard work of our dedicated staff in all of our offices. We would not be able to do this important work without the support of our partners and donors, including the the Asian Development Bank, the Barr Foundation, the ClimateWorks Foundation, the Ford Foundation, the Hewlett Foundation, the Oak Foundation, the Rockefeller Foundation, the Roy A. Hunt Foundation, the UK Prosperity Fund, the Volvo Research and Educational Foundation, and thousands of individual supporters, among others. Thank you all so much for your support.

A New Standard for Transit-Oriented Development

By Mariane Jang



In cities around the globe, the rate of urbanization and its effects are outpacing the ability of governments to attract investment from an international community, and to plan and invest strategically for a higher quality of life for their residents. Many progressive cities and metropolitan regions, which have been attentive to these issues for decades, have seen successes through strategic development that links urban and transport planning. They have tackled congestion and invested in infrastructure and urban environments through the adoption of transit-oriented development (TOD), resulting in higher land values, increased tax revenues, and happier residents.

Recently, this focus on public transport infrastructure investment in developing regions has contributed to a growing interest in how to leverage the social and economic benefits of

citywide infrastructure to create real local value, and TOD is an increasingly popular strategy for marrying the two. Around the world, cities are recognizing the benefits of planning transport systems in conjunction with urban development. Planners and local governments are looking for tools to help them achieve this.

This year, the Institute for Transportation and Development Policy released the *TOD Standard*. Based on research on sustainable communities and transport, which was undertaken during the development of the *Principles of Transport in Urban Life* and the *Our Cities Ourselves* exhibit, ITDP's researchers have distilled decades of experience into eight principles for guiding the design of TODs. The Standard translates these principles into accessible objectives and metrics for a non-technical audience, giving everyone from developers to interested

In Guangzhou, China, shops and apartments flank the BRT corridor.

local residents a way to understand the essential design components behind a successful TOD.

While the emphases of these strategies should differ according to context, the main goal is to encourage more sustainable travel modes (including the most healthy modes of walking and cycling), reduce car use and congestion, and enhance the environments in which residents live and work. At a macro level, TOD planning is about strategically prioritizing station areas for investment. At a micro level, TOD is an urban development project within walking distance to a high-capacity transit station that provides a rich, diverse mix of uses and supportive walking and cycling infrastructure, such that the community has a number of



Left: Good TOD is founded on sustainable transportation options, including a safe and attractive walking and cycling environment. In Mexico City, Reforma Avenue has been transformed by simple street improvements, like raised crosswalks and physically segregated bike lanes. Coupled with the BRT and metro stops nearby, Reforma is poised to have world-class TODs.

Below: Mixed uses and prioritized connectivity for pedestrians between dense retail and work-live housing units are demonstrated in the high-profile development of Jianwai Soho in Beijing, China.



transport options.

TOD translates into different forms in different places. In the U.S., it brings visions of densely clustered multi-story buildings in walkable neighborhoods built around BRT and train stations. In Guangzhou, China, it brings visions of mixed-use office towers and apartment blocks above a large shopping mall

with supermarkets and a cinema, all built above a major BRT station or mass-transit hub. In Mexico City, TOD means that historic neighborhoods are no longer choked with parked cars blocking entrances and creating congestion on the roads. Streets are more walkable, and shops and restaurants thrive as visitors who travel there by

bicycle or bus now spend their time purchasing goods and services instead of searching in vain for a place to park.

No matter what it looks like, transit-oriented development is undoubtedly the sensible future for growing cities, and ITDP strongly believes that its TOD Standard will play an increasingly significant role in shaping that future.

Images: Top-ITDP; Bottom-ITDP China, Luc Nadal

BRT Brings More Bang for the Buck

By Jemilah Magnusson



In the wake of the 2008 economic downturn, Cleveland, Ohio, faced the same sort of budget crises that slammed rustbelt cities from Rochester, New York, to Gary, Indiana. As municipalities like Cincinnati cut public services and reduced jobs, and Detroit prepared to declare bankruptcy, though, Cleveland managed to transform a modest \$50 million investment in bus rapid transit (BRT) into \$5.8 billion in new private development.

The HealthLine, which is the highest-ranking and only Silver Standard BRT in the United States, sits strategically along Cleveland's Euclid Avenue corridor. Its construction promoted government redevelopment efforts there and fostered new relationships with private developers. The city managed to leverage \$114.54 of new transit-oriented investment for every one dollar it invested into the BRT system, adding jobs, revitalizing the city center, and making Cleveland a U.S. best practice in both BRT and transit-oriented development (TOD).

A growing number of North American cities are looking to follow suit. They are turning to TOD in an effort to reverse the sprawling, car-dominated suburban model that has led to traffic congestion, pollution, and unhealthy lifestyles. Along the way, many discover that rail-based mass transit investments such as light rail transit (LRT) take too long to plan and execute and are cost prohibitive, but that BRT—a lower cost yet still high-quality mass-transit solution—pairs well with transit-oriented development investments. In addition to Cleveland, Pittsburgh, Las Vegas, Ottawa, and Eugene are among the North American cities that have already received returns on their BRT investments.

“Cleveland’s HealthLine is the showcase for how BRT can revitalize urban areas once in decline,” said Annie Weinstock, ITDP’s Director of U.S. Programs. “More and more U.S. municipalities, still strapped by the last recession, are considering the potential of BRT, light rail, and other surface mass transit options as a way to anchor new development. The illusion of the car-driven economy has finally reached a dead end.”

This year, ITDP released *More Development for Your Transit Dollar*, a report that evaluated 21 LRT, BRT, and streetcar corridors in 13 cities across the U.S. and Canada. The report features in-depth case studies on the successes in Cleveland, Ohio, and Pittsburgh, Pennsylvania. It is the first such publication to systematically challenge the widespread assumption that LRT is more



Left: Neighborhoods along Cleveland's HealthLine BRT corridor are bustling. Bottom Left: Planners and developers looking to revitalize the East Liberty neighborhood in Pittsburgh are focused on the community's BRT station as a potential economic anchor for new growth. Bottom Right: The HealthLine's construction promoted government redevelopment efforts and instigated productive public-private partnerships.

an advantage, since the costs of a high quality BRT system are just a fraction of the cost of rail. "Our research found that the most important factor in the success of transit-oriented development is how the TOD around stations is embraced and promoted by the government. The type of transportation doesn't matter, so long as it's good quality," said ITDP CEO Walter Hook, a co-author of the report. "In these fiscally constrained times, how far an investment stretches sparse government dollars is critical."

ITDP's report also shows how urban planners can employ TOD principles when redeveloping urban areas served by existing transit systems. In Pittsburgh, the Martin Luther King, Jr. East Busway, the nation's first BRT, was not conceived as a development initiative. It was built in 1983 to connect downtown neighborhoods with communities and suburbs to the east, which it did, but since there was no accompanying investment in economic development, the area continued to decline. Twenty years later, a public-private initiative looking to revitalize the East Liberty neighborhood focused on the East Liberty BRT station as a potential economic anchor for new growth. By adjusting the zoning regulations surrounding the station, cleaning up industrial sites, and aggressively recruiting economic anchors, the initiative attracted over \$900 million in new development, and the community is experiencing a renaissance. Interestingly enough, while the BRT had been in place for over 20 years, it was only through focused community intervention around the station that development finally began to take place.

In the past decade, several new BRT corridors have emerged in the U.S. and Canada, and this has been a major step in establishing a new



likely to have significant TOD impacts than BRT. The report's authors determined that supportive governmental TOD policies and financing, strength of the land market, and quality of transit—regardless of type—are much better predictors of success in leveraging development than whether the city chooses LRT, streetcar, or BRT.

This level playing field actually puts BRT at



paradigm for transit. However, that's just a start. North American cities still have a long way to go if they truly wish to transform existing auto-oriented suburbs and blighted urban areas into vibrant, high quality, transit-oriented communities.

More Development for Your Transit Dollar: An Analysis of 21 North American Transit Corridors is available for download at itdp.org/moredevelopment. For more information on *The BRT Standard*, visit brtstandard.org.

The World's Widest Avenue Gets a Transit Makeover

Clara Rasore



“I Must Admit, Metrobus Saved My Marriage,” read the headline in *Clarín*, the most popular newspaper in Argentina, just one month after the new bus corridor opened along 9 de Julio Avenue.

The article goes on to tell the story of a husband whose drastically reduced commute time gives him an hour more each workday to spend with his wife and kids. The family can communicate better too, as four of the noisy buses that used to crowd the streets outside their home have been re-routed to run along the new 9 de Julio corridor.

Their tale is common among Buenos Aires residents, whose lives were profoundly changed when the buses that used to rumble and crowd down narrow, stone-paved historic streets were rerouted to a two-lane, ten-line bus corridor. Even the article’s author admits that he loves the streetscape, confessing that he takes his children to Metrobus as if it were an amusement park ride. It only takes them 40 minutes to do the whole trip, he says, while praising the new high quality, sheltered stops with Wi-Fi, traveler information, and security.

On Maipú and Esmeralda streets in the Microcentro neighborhood, just meters from Corrientes and 9 de Julio avenues, which see hundreds of thousands of visitors every day, the absence of bus noise is still a strange sensation. For decades, these narrow streets were the epicenters of the screeching brakes and honking horns that symbolized downtown, but not anymore. Between the 33 blocks of new pedestrian-priority zones—now rich with street furniture, plantings, and other amenities—the new bike lanes, the planned parking reforms, and the bus corridors, the city center of Buenos Aires is transformed and so are the lives of the people that work and live there.

But quiet is not the only benefit that the 9 de Julio Avenue corridor has brought to the neighborhood. And it’s nowhere near the most significant. Fifty-two-year-old Mabel, from the Boedo neighborhood, says the new corridor has also helped her gain an hour in her day.

“It’s not only that it has reduced the travel time,” she said, “but I now actually know how much time it will take me to get home or to work. Now I know I will always be on time because it always takes the same amount of time, give or take a few minutes, since it’s not competing with private cars.”

Across the board, passengers have reduced their travel time by an average of 30 minutes per bus ride. It used to take more than 40 minutes to cross the city. Now it takes an average of 14.

“The stations are much better too,” said Mabel. “We used to wait for buses standing in the middle of the street, with no shelter from the rain.”

Of course, the transition wasn’t easy. “I had my doubts at first,” Mabel admits. And many others, who saw 9 de Julio Avenue and its 40 lanes of motor vehicle traffic as an essential part of Buenos Aires, joined her.

Since its opening in 1937, 9 de Julio Avenue, often called “the widest avenue in the world,” has seen a variety of changes. Over the decades,

travel lanes have been widened, public squares have been built, and the design has been tweaked. Through all of that, however, the thoroughfare remained a monument to cars and the growth, development, and prosperity they once symbolized.

In the past decade, though, it became a monument to traffic jams, chaos, and disorder. Frequently, the congestion was so bad that a driver was better served by avoiding the area entirely. At its worst, to cross 9 de Julio Avenue could take the better part of a day.

After the city government found success with a BRT corridor along Juan B. Justo Avenue in 2011, they quickly realized that growth, development, and prosperity had a new symbol: bus rapid transit, and they set out to apply it



Opposite page: New Metrobus Corridor along Buenos Aires’ 9 de Julio Avenue. Above: Before its transformation, many saw 9 de Julio Avenue, at 110 meters wide, as an essential part of the city.

Images: Opposite page and right: City of Buenos Aires



Bus passengers have reduced their travel time by an average of 30 minutes per bus ride.

along the city's most famous street on a suitable scale. They would build 17 stations along the 3.5 kilometers of 9 de Julio Avenue in order to accommodate 11 bus lines circulating about 200,000 passengers daily.

Mabel and almost everyone else agree that the city's efforts have exceeded expectations. The 9 de Julio Avenue corridor not only sped up bus travel by 50 percent, but also proved beneficial to motorists, decreasing their average travel time by nearly 30 percent. The Metrobus has given an order to the traffic, allowing all vehicles to flow at a faster pace.

"A Metrobus corridor on the most emblematic avenue in Argentina is a strong message to all the population," said the secretary of transportation of the City of Buenos Aires, Guillermo Dietrich. "Public space should be planned and designed for people, giving priority to those who share it with others. Cultural changes are possible. The same has happened with cycling in Buenos Aires."

The 9 de Julio Avenue corridor project is part of a citywide Sustainable Mobility Plan initiated in 2009. The plan includes the pedestrianization of more than 100 blocks of the Microcentro area, an extension of the public bicycle share system,

a 300-kilometer bicycle-lane network, interventions prioritizing pedestrian activity and public transport, traffic calming and road safety infrastructure, and a sweeping on-street parking-reform project planned for 2014 that will incorporate best practices from around the world to combat illegal parking and improve traffic flow.

In addition to 9 de Julio, the city also opened the Metrobus Sur BRT corridor in September 2013. Metrobus Sur runs in two branches, General Roca and Fernandez de la Cruz, with an extension between the Puente La Noria and Constitution transport hubs. The 22 km BRT has 32 stations and carries 250,000 passengers per day.

Metrobus Sur's designated lane will benefit 18 other bus lines. Residents of the eight neighborhoods along the corridor have already seen a 15 percent commute time reduction, and a reduction in traffic noise and pollution. The project is expected to have development impacts on these



The Metrobus Sur BRT corridor implemented in September 2013 aims to encourage development and density in the eight surrounding neighborhoods.

neighborhoods for years to come. "Metrobus Sur, despite not being the most urgent in terms of demand, is located in a very degraded area of the city," says Andres Fingeret, ITDP Argentina Country Director. "The decision to build on this corridor was that it will generate needed investment and greater densification of the area. It's important to emphasize this point because it speaks to the city's strategy of improving an area by investing in high quality mass transit, a strategy that we highly support."

During the Metrobus 9 de Julio launch, Mayor Mauricio Macri upheld the importance of what the Sustainable Mobility Plan means and promised to continue working in this direction. "We are fighting a battle against cars and on the road to making public transport a feasible, attractive, and efficient option for everyone alike," he said. Millions of Buenos Aires residents, and hundreds of thousands of daily bus riders, agree.

A New BRT in the Heart of China

By Karl Fjellstrom and Xianyuan Zhu

Lanzhou, the capital city of Gansu Province and a major transportation hub in Northwest China, opened Asia's second high-capacity bus rapid transit system in December 2012. The system, which already carries 290,000 passengers per day, is considered Silver Standard by

(GMEDRI), and with the crucial support of the ADB, succeeded in transforming the project into one focused primarily on a high-capacity, high-quality BRT corridor through the heart of Lanzhou's Anning District and extending two kilometers past administrative borders

tion to stop on both sides of a boarding platform. This revolutionary new design, the brainchild of Brazilian expert Pedro Szasz, offers very high capacity sufficient for all but the highest volume BRT stations, but with half of the station length and only around one meter in



Left: Several BRT stations, including Taohai Shichang, shown here, connect directly to shopping through pedestrian passageways. Right: Street-level access, as seen here at the Xi Zhan station, is the preferred way for pedestrians to reach BRT stations. Stations can also be reached by pedestrian bridges and underground passes.

the BRT Standard Technical Committee and will likely achieve Gold Standard when a planned integrated bike sharing system opens in late 2013.

A number of ground-breaking components in the system are set to advance BRT design, planning, and funding in cities around the world in the coming years.

The Asian Development Bank's (ADB's) first BRT project has come a long way since its earliest incarnation. When ITDP first visited Lanzhou in February 2009, the project was mainly focused on building utility tunnels and other roads. The proposed BRT system featured a poorly designed, low-grade median bus-lane concept falling far short of even the Bronze Standard. ITDP, together with the Guangzhou Municipal Engineering Design and Research Institute

to the commercial and transportation hub at Xi Zhan. ITDP, working with GMEDRI, defined intersection design, station architecture, operational design, modal integration, and other key features of the project. In partnership with the ADB's Project Management Office, GMEDRI and ITDP helped pioneer an innovative financing model that employed public-private partnership money to integrate transit-oriented development into the project and help fund station construction.

The most striking difference between Lanzhou's BRT and other high-capacity systems, including the one in Guangzhou, which served as inspiration for Lanzhou's senior officials, as well as its system designers and engineers, is a new split-station concept that allows for BRT buses traveling in the same direc-

extra width.¹ ITDP is already applying this design in the planning and design of several BRT systems currently under development, including in Tianjin, China, Yichang, China, Johor Bahru, Malaysia, and Kuala Lumpur, Malaysia.

The nine-kilometer, 15-station, seven-route Lanzhou BRT corridor doesn't use

¹ The main limitations of this new station configuration are firstly that it is limited to two substops in capacity terms, and secondly that it renders express routes less effective, especially at stations nearing the two-substop capacity limit. The configuration also misses out on the advantages of a single central platform, when compared to split platforms. In ITDP's Tianjin BRT proposals, the same split-station concept is used. In the few stations requiring three substops, a more traditional single central platform is used. Most cities and corridors require a maximum of two substops, which with articulated buses can accommodate more than 15,000 passengers per hour per direction, suggesting that this new configuration has wide potential application.

The Lanzhou BRT includes elements of transit-oriented development, including connections to shopping, public space, and pedestrian passageways.



the split-station concept exclusively. It features a variety of station types based on the corridor conditions, BRT route configuration, and passenger demand. Stations include single central platforms, split platforms with right-side boarding, split platforms with both sides boarding, and combinations of these approaches at the two biggest stations of Xi Zhan (West Railway Station) and Peili Guangchang. An initial fleet of 50 special 12 meter BRT buses with doors in both sides was procured for this system, with 20 additional 18 meter buses going into operation in February 2013.

The Lanzhou BRT includes elements of transit-oriented development (TOD) and public-private partnership financing in the form of six underground shopping malls beneath the BRT corridor, constructed as part of the BRT project. The largest, called “Fifth Avenue,” connects with two BRT stations, Feijiaying and Taohai Shichang. These shopping malls were implemented by the government

in the form of the Lanzhou ADB Loan Project Management Office, with one sold to a private company and the other five rented to tenants. The Fifth Avenue mall is 496 m long with a 16,000 square meter operational area that includes shopping, public space, and pedestrian passageways. It has eight entrances and 16 escalators, along with 24-hour camera monitors, three public plazas and exhibition spaces, and its own system-control center. Gansu Dacheng Investment Ltd. invested in and will operate this shopping mall for 50 years. In addition to the original fee, which was used to offset the BRT corridor construction cost, the company built and maintains the public facilities, including BRT-passenger tunnels and escalators.

Modal integration is a feature of the project as well, with double-tier bike-parking racks provided at the major BRT stations, a bike-sharing system and greenways planned, and bike lanes along the BRT corridor. Following ITDP’s promotion and subsequent planning and design input over the last few years, Lanzhou aims to launch a citywide bike-sharing system this year. The Lanzhou Communications Commission is in charge of the project. The Lanzhou Bus Company, which has already set up a subsidiary bike-sharing company, will be the operator. Several officials from the Communications Commission, Development and Reform Commission, and Lanzhou Bus Company carried out



Above left: Lanzhou’s new BRT station configuration, seen here at Sizhong Station.

Left: Stations are fully enclosed due to weather and potential dust storm considerations.



The Lanzhou Bus Company has improved its performance and service levels in the BRT corridor.

a study trip to Hangzhou, Shanghai, and Zhuzhou earlier this year. The Communications Commission is planning to choose a latest-generation, high-quality system. Lanzhou is currently waiting to hold a municipal executive meeting to discuss the budget of the bike-sharing project, and started the bidding in September 2013. The total budget for Lanzhou's public bicycle system is 100 million yuan (US \$16.34 million), with 50 million yuan allocated for the first phase, which will include 500 stations with 12,000 bikes and 14,000 docks spread through the Chengguan district (the city center), Qilihe District, and Anning District (the BRT corridor). A subsequent phase, slated for 2015, will expand the program to 900 stations, 20,000 bikes, and 24,000 docks, covering the Xigu district and improving city-center coverage, and a final stage will bring the system to the suburban areas of Lanzhou.

As can be expected with any project of this magnitude, the system has experienced some initial challenges, especially related to the BRT operations, which

are still not yet sufficiently connected to the downtown area. Other problems include a lack of continuity of bike lanes, parking intrusion on walkways along the BRT corridor, some passenger information and station architecture issues, and most problematically, the fact that the BRT operator prefers to operate the line primarily as a trunk-only corridor with insufficient route operation outside the BRT corridor.

Despite these teething problems, which are in the process of being rectified with the support of the ADB, the Lanzhou BRT is already showing a range of impressive effects. Ongoing BRT impact analysis surveys find that 73 percent of respondents along the corridor are either satisfied or very satisfied with public transport, an increase of 24 percent from before the BRT system's introduction. The percentage of respondents reporting dissatisfaction has fallen from ten to two over the same time period. Other results indicate a significant increase in civic pride; a decrease in wait times

Lanzhou BRT by the Numbers

Based on an extensive survey program conducted over the last two years, Lanzhou's new BRT corridor is popular and effective.

- Along the BRT corridor, the percentage of people either satisfied or very satisfied with public transport increased from 49% before BRT to 73% after BRT. The percentage of people dissatisfied with public transport fell from 10% before BRT to 2% after BRT.
- Self-reported waiting times fell by 7.1 minutes after the BRT was operational.
- Those agreeing that "I feel safe riding my bike along Anning Road [the BRT corridor]" increased from 23% before BRT to 53% after BRT.
- Those agreeing that "I feel safe walking along Anning Road" increased from 30% before the BRT to 50% after the BRT opened.
- The percentage of people agreeing that "The environment along Anning road is good" increased by more than 35% (increasing from around 20% to 55%) among BRT passengers, pedestrians, cyclists, and car drivers.

and travel costs; improved perceptions of safety for passengers, cyclists, and pedestrians; and major improvements in perceptions of environmental quality and livability. This impressive reception, along with the wide array of innovations on display, makes it easy to understand why other cities are already starting to emulate Lanzhou's BRT. It's also clear why a Gold Standard designation for Lanzhou's BRT is so close on the horizon.

Janette Sadik-Khan talks New York City's Transport Renaissance

Janette Sadik-Khan has been the Commissioner of Transportation for the New York City Department of Transportation since 2007. In her tenure, she has overseen massive sustainable transport improvements to the city, including the installation of 400 km of new bicycle lanes, the pedestrianization of Times Square, Broadway, and several plazas, the implementation of new road safety measures, and the launch of Citi Bike. ITDP spoke with the commissioner about her legacy, the city, and future plans.

There has been a lot of change on the streets of New York City over the last six years, and you've been a very visible part of that change. It has made you a target to some and a hero to others. How have you managed to push through this to get things done?

Every city inherits the streets, roadways, and other transportation infrastructure built by previous generations. But just because something is a certain way, doesn't mean it has to stay like that—that it has to remain frozen in time.

Creativity often comes out of necessity, and in many ways, we didn't have a choice. As people move to urban areas, especially smart tech-savvy young people, we are competing with other world-class cities. If we don't have well-designed streets and plazas, if the streets are utilitarian, accommodating only cars—no bike share or safe bike lanes, no landscaping, no art—if you don't build it, they won't come.

And I think we've tapped into a huge unmet hunger for quality streets, and you're already seeing that people are demanding these kinds of changes, and I think that will only grow from here.

You're also seeing a lot of evidence of these deep relationships we've developed with communities across the city over the years through dialogue, research, and a lot of late-night meetings. I think they see how these projects

get developed and implemented, that they're a part of that process, and that we're there with them after the project is implemented and continue to make improvements.

While it is impossible to make everyone happy, collaboration is key to getting the job done and getting it done successfully. The biggest champions for our street design initiatives are New Yorkers themselves, showing that we're not just in a lab talking about traffic and safety engineering.

And I think the polls back that up. In a city with 8.3 million New Yorkers and 9.3 million opinions, 64 percent say they support bike lanes, 72 percent support plazas, and 73 percent support bike share [NYT poll, 8/16/13]. It shows that New Yorkers were way ahead of the politicians and the headlines on this topic.

Can you help us understand your approaches at the state government level, the city government level, the community level, and with the business community?

First, we owe a lot to Mayor Bloomberg. His sustainability agenda looks to build a greener, greater New York City that accommodates a million more people better than it does today with 8.3 million. And a big part of that strategy involves re-working our streets and bringing better balance to them so they work better and are safer for everyone,

whether they're walking, biking, driving, or taking the bus.

But to bring these things from ideas to asphalt, you need to find innovative ways of working within the city at large. That often means using quick, simple, temporary materials that can make things happen quickly yet leave a lasting impression on our streets.

Once you demonstrate that a new bike lane or plaza space can work, New Yorkers themselves start looking at their streets in new ways. We're now seeing dozens of neighborhoods demanding residential slow zones, community plazas, bike share, and other innovations all over town.

One of the ways we've built that support is by documenting the economic impact of our projects. For instance, on Fordham Road in the Bronx, we found that retail sales by locally-based businesses grew by 71 percent since the introduction of Select Bus Service, which is three times the borough-wide growth rate.

In Brooklyn, retail sales grew by 172 percent around Pearl Street plaza in DUMBO, nine times the rate across Brooklyn.

And sales went up by as much as 49 percent on portions of Ninth Avenue in Manhattan after we installed the nation's first parking-protected bike lanes. This growth was a staggering 16 times the borough-wide growth.

New York is an influential city, and our documentation of the economic and safety benefits of these projects and designs has helped them spread across the country and around the world.

You've been called a "cycling visionary" by the *New York Times*, among many others, and there is no doubt that the city has drastically improved cycling



Commissioner Sadik-Khan at the 2012 Summer Streets launch event.

under your guidance. At the end of your tenure, how close will we have come to your ideal vision for New York's bike infrastructure? How about its bike culture?

Today, New York City's bike infrastructure is being held up as a model around the world. We've built almost 400 miles of on-street bike lanes, and it's transformed the city in several important ways.

Streets with bike lanes are safer for bike riders and also for those that walk and drive on them. Our bike lanes are anchors to many of our traffic safety projects, and our landmark pedestrian safety study shows that streets with bike lanes on them are 40 percent less deadly for pedestrians, and protected bike paths see reductions in injuries upwards of 50 percent for everyone on the street, not just bike riders.

The last six years have seen the fewest traffic fatalities in more than a century, and despite the incredible, four-fold growth in commuter cycling, serious crashes and fatalities have remained flat over the last decade, representing a 75 percent decrease in risk.

So if you really want to build a street that's safer to walk on, safer to drive on, safer to live, work, and play on, and which supports the economic vitality of the street, you can start by building a bike lane.

Another major accomplishment has been the improvement of pedestrian spaces in the city, particularly Times Square, which has been a big success and is being considered an international model. What kind of impact has this made on Midtown and the city overall?

There's no more famous example of economic development through street design than Times Square. Its nickname was the Crossroads of the World, but the sad fact was that it underperformed economically by as much as 25 percent behind other Midtown corridors, and it was as equally populated by tchotchke shops as its landmark theaters.

In 2009, using just paintbrushes and planters, we cut the Gordian knot and put the square back into Times Square. The initial result—safer streets, better-moving traffic, and better public space—was documented years ago. But each year, we're getting more and more economic data that tell a story that reaches far beyond transportation.

By changing the street, we provided an incredible pedestrian experience, and that's where the economic return is for cities: on foot.

That's why a wave of new flagship stores opened right on the plaza area, asking rents more than doubled after the project, and retail sales grew. Cushman & Wakefield put Times Square on the company's list of top ten retail locations

on the planet for the first time ever.

But it's not just Times Square. We're implementing plazas all over the city. In the last six years alone, we've set more than 50 plazas in motion in all five boroughs, covering 26 acres of former roadbed.

One major accomplishment that hasn't gotten much attention is the improvements in road safety. Can you talk a little about what you've done on that front and what you think still needs to be done?

Safety is at the forefront of everything we do here. Our 2010 *Pedestrian Safety Report and Action Plan* became the Rosetta Stone for understanding the who, what, why, where, and how of traffic crashes, helping us to target the right improvements and driving our safety investment strategy.

We've re-engineered 137 corridors and 113 intersections citywide in just the last five years, installed 3,600 pedestrian countdown signals, 910 speed bumps, installed or planned 14 community-requested neighborhood slow zones, installed speed zones near 146 schools in the last six years, and won state authorization to use speed cameras near schools for the first time ever.

We rolled out safety education campaigns, warning drivers against drunk or distracted driving, warning pedestrians to stay safe by staying aware of their surroundings, and reminding cyclists to follow the rules of the road.

Your department has also published a number of powerful, data-driven reports on the impacts of bike, pedestrian, and transit projects on local economies and communities. Can you talk about the efficacy of hard data? And maybe you

It's the data-driven inspiration that gets these projects built, but the way New Yorkers perceive and experience the benefits builds momentum behind them.

could compare and contrast that efficacy with the power of anecdote when it comes to pushing for change?

I work for a data-driven mayor, and being able to point to safety statistics makes it that much easier to work with other communities that could benefit from similar changes to their streets.

We've used data to an extent never seen to measure the before-and-after effect of our projects. On the plazas side, when we closed Broadway through Times and Herald squares, we documented the before-and-after effect of the project in a detailed report called *Green Light for Midtown*. It found a 35 percent reduction in injuries and traffic speeds improving up to 17 percent. And on the plazas side, retail rents quickly doubled at Times Square according to the Real Estate Board of New York. These findings helped make the case for the permanent closure of Broadway to vehicles in Times Square.

In the bus arena, data on our five Select Bus Service lines across the city has shown a 20 percent reduction in commute times and a 10 percent increase in ridership, outperforming other, non-SBS lines. By the end of this year, these combined bus enhancements will save some 60 million annual passengers a cumulative 578 years in annual commuting time. We're also working to roll out our sixth line, serving Nostrand and Rogers avenues in Brooklyn in the fall and the seventh, on 125th Street in Harlem, next spring.

These kinds of data are a very powerful way to communicate the benefits of a project and a big reason that communities across the city are asking for SBS.

Finally, in our 2012 *Measuring the Street* report we looked at the economic performance of streets after we installed

changes like bike and bus lanes, plazas, and other street redesigns. We found that retail sales went up by as much as 49 percent on portions of Ninth Avenue and injuries also decreased by 50 percent after we installed the nation's first protected bike path there in 2007. Talk about retail therapy.

The meeting point of data and anecdote is where New Yorkers can see these improvements in one neighborhood and want to see them where they live and work as well. It's the data-driven inspiration that gets these projects built, but the way New Yorkers perceive and experience the benefits builds momentum behind them.

Wayfinding is another arena where your team has really made a big difference. A decade ago, even life-long New Yorkers would need a few seconds to orient themselves at the top of a subway staircase. Now pedestrian-oriented neighborhood maps and bicycle maps are starting to pop up around the city. How do those fit into your larger vision?

Just a few years ago if we so much as said "wayfinding" in New York City, you may as well have been speaking in Swahili.

But we did a survey and found that one out of three locals couldn't tell which way was North and 10 percent of locals admitted to being lost the previous week.

It's not hard to imagine why: As neighborhoods grow and develop, long-time landmarks change and new destinations emerge across the bor-



From left to right: Walter Hook (CEO, ITDP), Janette Sadik-Khan (Commissioner, NYC DOT), Congressman Earl Blumenauer (represents Oregon's 3rd District), Enrique Peñalosa (ITDP Board President).

oughs—and more and more New Yorkers are stepping out to explore new parts of their city.

New York has an extensive sign system for those in a car. But even though every New Yorker is a pedestrian at some point in the day, we've never had a unified system to make it easier to get around while on foot. The wayfinding system you're seeing in more and more neighborhoods since we launched bike share and the stand alone signs are changing that.

And these signs are helping to knit our neighborhoods together, and helping businesses along the way. When people know where they're headed they're more likely to explore their city, wallets in hand.

After your experience partnering with the private sector for the city's new bike share system, as well as on other projects, what have you found about the role of the private sector in transit? What is useful about this, and what are some pitfalls?

There are tremendous opportunities that the private sector provides, and



there there's no better example than Citi Bike. Private investment underwrites the bike share system, which augments our transportation system with 6,000 bikes, at no cost to taxpayers, while at the same time creating 170 jobs—which in turn generates and additional \$36 million in local economic activity annually.

Today there are 70 new bike stores in New York on top of the 100 there before the bike lane expansion started in 2006.

far-reaching effects on businesses big and small.

And all of these accomplishments we've been discussing are in addition to the more than \$6 billion invested in the city's bridge infrastructure in the last decade. That sort of nuts-and-bolts investments is needed to build any economy—from your local retail strip right up to the national level.

Of everything you've accomplished in your time as commissioner, what are you most proud of?

It's hard to pick a favorite project when you're talking about remaking Times Square, doubling our bike lane network, and creating more than 50 plazas all over town, but few projects have remade the city as quickly and completely as Citi Bike.

We knew the blue bikes would quickly fold into the transportation mix, but it's just incredible just how quickly it's taken off with New Yorkers.

Less than four months since launch, Citi Bike riders logged 4.5 million trips for nearly 9 million miles. If Citi Bike riders created their own city, it would be the nation's second largest, and those 9 million miles would be enough to circle the earth more than 360 times. And more than 91,000 annual members have signed up and another 319,000 have purchased daily and weekly memberships.

Other than New York, what is your favorite city for transit?

Every city has its strengths, and one of the best things about this job has been being able to see what works and what doesn't from around the world.

I looked to Copenhagen or Amsterdam for world-class bike infrastructure, London for its amazing wayfinding system, and Paris and Washington, D.C., when we were prepping for our bike share launch.

Of course, leaders from these cities and many more are also now looking to New York for ideas on how to transform their own city streets and make them work better for their own citizens.

What are you planning to do next?

With less than three months left, we're focused on the basics—making our streets safer, expanding options for getting around, and making investments in our long-term infrastructure.

And with the planned launch of those additional SBS lines, millions more riders will see reductions in commuting times. We will also continue to make much-needed street redesigns across the city to make our streets safer to cross and more inviting to live, work, and travel on.

By the end of the year we will cut the ribbon on the first of the new, world-class plazas being built in Times Square, expand the pedestrian wayfinding signs to even more neighborhoods, and help usher in a new era of enforcement with our speed cameras near city schools.

As for me, when my time is up here, I hope people will look back on the last six years as the era when we, as a city, started to look at how we value and prioritize our streets.



Commissioner Sadik-Khan at the Citi Bike launch.

And real estate listings now list proximity to Citi Bike as a selling point along with subway stations.

And then working the other way, there's the impact that transportation investments can make in the local economy that we talked about in *Measuring the Street*. Initiatives like wayfinding and street improvements can have

In Brazil, It's about Much More than Ten Cents

By Clarisse Linke

Brazilians are used to some of the world's largest public gatherings. Two million people turn up on Rio de Janeiro's beaches for New Year's Eve celebrations, and Carnival brings the country together for a weeklong party. But in June of 2013 a different sort of assembly—the largest protest in 20 years—swept the nation. The last time a crowd that size got together in the streets, Brazil's first post-dictatorship president was impeached.

So what triggered such a massive show of civic engagement this time around? A 10-cent increase in bus fares.

In a country well known for its rapid economic growth, where a decade of targeted job-creation programs have lifted more than 20 million people out of poverty, and where the World Cup is imminent and the Olympics are a few short years away, it might seem strange that such a small uptick in the cost of a bus ride could cause such an outpouring of frustration. Certainly, the rest of the world was bewildered by the scale and intensity of the protests, but Brazil's status as a land of opportunity is more complicated than many understand.

Brazil's steady GDP growth in the last two decades has helped address the country's income disparity. The latest United Nations Development Program Human Development Index showed a whopping 47.8 percent improvement across Brazil's municipalities since 1991. There is, however, a big gap remaining between living standards for urban slum dwellers and the upper classes, and all but the wealthiest experience the daily struggle of high living costs and poor service delivery in critical public sectors like transport, healthcare, and education. With 82 percent of the population now living in urban areas, the cities are more than ever a locus of social injustice. This, coupled with decades of car-centric policy and construction, helped set the stage for the bus-fare protests.

Brazilian cities in the last 40 years have followed the global pattern of heavy invest-



Millions of Brazilians took to the streets last June to protest an increase in bus fares.

ment in roads, with tunnels and elevated highways reshaping cities to facilitate motorized transportation. Often, this development has happened at the expense of public transportation, as well as bicycle and pedestrian infrastructure, and it has made a tremendous impact on travel patterns in the country. In Rio de Janeiro, for example, between 1950 and 2005, public transport trips fell from 451 to 149 trips per capita, while private car use increased from 8 to 137 trips per capita. Similar figures were replicated in most metropolitan areas in the country.

There have also been significant automobile incentives put in place. The “IPI Zero,” a tax break for new car buyers, was introduced in 2012 to stimulate economic growth and employment. As a result of incentives, from January to August of 2013, almost 2.5 million new cars were registered. This isn't a one-year anomaly. The number of automobiles in the 12 main metropolitan regions in Brazil increased by more than 8.9 million between 2001 and 2011, according to the Metropolis Observatory. These programs have certainly succeeded, but as with a stream of other measures over past decades, like fuel subsidies and tax concessions for automakers to set up shop in Brazil, they have also stimulated monumental traffic congestion.

Concurrent with these recent trends and incentives, there have been massive rounds of infrastructure investment. In 2007, former president Lula da Silva launched the Growth Acceleration Program (often called “PAC”), a federal program consisting of a set of investment projects in construction, sanitation, energy, transport, and logistics. The continuation of the program (PAC 2), led by President Dilma Rousseff, has set aside an additional \$30 billion for mobility projects, which has already been dedicated and partially invested. International commitments such as the



Protesters crowd on to one of Rio de Janeiro's main highways.

FIFA World Cup in 2014 and the 2016 Olympics have given many of these projects, particularly transportation-related undertakings, a heightened sense of urgency.

While huge investments in infrastructure are to be expected in the approach to both the World Cup and the Olympics, many Brazilians, acutely aware of the car-centric spending in previous decades and roiled by a small but symbolically significant bus-fare increase, have started questioning the lack of dialogue and transparency in the management of these massive resource allocations. Among the many questions being asked at the June protests was: To what extent will the Games' legacy address ordinary Brazilians' need for improved services?

Transportation is one of the crucial levers to make cities socially fair and equitable. Though the demonstration's trigger was a small increase in bus fares, its power sprung from the need to reconcile urban transport systems and social justice at the street level. For Miguel Lago, the Director of Meu Rio, one of the main civic organizations involved in the protests, the source of the problem is in the lack of transparency in the concession contracts, which do not establish clear performance benchmarks. This means that the operators, who set the fare based on the system's efficiency, have no real incentive to improve the quality of service. "Is it fair that the passenger pays the costs of inefficient management, because the public sector does not effectively plan and monitor the private concession?" Lago asks.

Brazil has been growing economically, but the quality of life for some in its cities has not risen accordingly. For those whose daily routine still includes hours in traffic jams or standing in a crush of people on public transport, it is, in fact, diminished.

The June protests weren't simply about the cost of a bus trip. No, the

stakes were much higher. As a sign at one of the larger rallies made clear: "It's not only about 10 cents, it's about rights." Brazilians are concerned with their right to space in the city and their right to know about the dealings that shape it. The conditions of sidewalks, the numbers of bicycle lanes, and above all the quality and cost of public transportation define the quality of life in cities and the quality of life for millions of residents, be they rich or poor. Whether June's protests will truly catalyze government action to address these issues has yet to be seen.

In the weeks following the gatherings, the federal government announced a National Pact for Urban Mobility, which aims, among other things, to reduce the cost of transit ridership by 50 percent. As part of the Pact, President Dilma also announced a new funding package with an additional \$25 billion for mobility, though it is still unclear how these funds will be allocated. These are heartening signs. A shift in the



Brazilian cities in the last 40 years have followed the global pattern of heavy investment in roads, with tunnels and elevated highways reshaping cities to facilitate motorized transportation.

priorities set by the government, the private sector, civil society, and citizens will be part of any long-term and mutually beneficial solution. After all, quality mobility that is affordable, safe, comfortable, and inclusive of all Brazilians is in everyone's best interest.

Images: Top-Semilla Luz ; Bottom: Fernando Stankuns

Readying Rio for 2016 and Beyond

Rio de Janeiro's municipal leaders are working hard to ready the city for the massive influx of visitors and athletes that will accompany the 2016 Summer Olympics, and ITDP is helping them ensure that their transportation plans become a lasting legacy for all Brazilians.

In September, academics, city officials, civil society organizations, state representatives, and international guests packed a standing room only auditorium to discuss how TransBrasil, the last of the four major BRT legacy projects to be built in preparation for the Olympics, can catalyze new investment in neighborhoods along Avenida Brasil. That gathering followed closely on the heels of a design charrette with City of Rio officials to discuss transit-oriented development around a yet-to-be-built TransBrasil BRT station in

Bonsucesso, a neighborhood in the city's North Zone.

Both gatherings were heavily informed by ITDP's *Our Cities Ourselves* visioning program, a ground-breaking effort that pairs urban designers with official stakeholders to ensure that renderings aren't just imaginative interpretations divorced from political realities, but deeply informed, consensus-based, practical documents that can be carried forward to guide implementation. The design charrettes also used evaluation tools developed by ITDP with support from Vicente del Rio, a Brazilian architect and urbanist, and the principles outlined in ITDP's *TOD Standard*.

A final report on the design charrette and conceptual plan (including renderings like the one pictured) will be submitted to the city later this year.





Avenida Brasil before its reimagining.

Housing, Transport, and the Fight for Equitable Cities

By Aimée Gauthier

Affordable housing is not just about the cost of a home, but the cost of living somewhere, commuting to work, and visiting friends and family. Unfortunately, the trend in affordable housing worldwide is to build it further and further away from jobs and disconnected from mass transit. This policy not only isolates the residents of new affordable housing developments, but also perpetuates an unsustainable car-based transportation system that is especially untenable for the low-income populations that it is meant to serve. Linking affordable housing to transit-oriented development (TOD) could help break the isolation of poverty, while providing a lasting solution in the fight against climate change. The United States has already changed direction from creating single-use, single-income concentrations of poverty with its affordable housing policy to creating mixed-use, mixed-income TOD projects.

What's more, as cities in developing countries are working to address an affordable housing crisis and a transportation shortage simultaneously, now is the time to link the two and act in lockstep. Smart and strategic TOD could help cities around the world to address the housing/transport burden, lay the framework for a more socially and environmentally sustainable city, and ensure a future where residents will drive less, use transit more, and have better access to jobs, schools, fresh food, and health services.



This mixed-use development in San Francisco's SoMa neighborhood combines affordable housing and retail near transit.

Missed Opportunities

Minha Casa, Minha Vida (My House, My Life) is the main national social housing program in Brazil. With funding from the second Program for Accelerated Growth (PAC-2), a stimulus funding package from the national government, *Minha Casa, Minha Vida* is supposed to build 1,000,000 homes and is well on its way to meeting that goal. As of December 2012, out of the 100,000 units promised, 30,199 units had been delivered in the city of Rio de Janeiro and 41,622 units in the state of Rio. Most of these homes, however, are located far from the city center and mass transit. Most of these developments are single-use and single-income enclaves, creating continued concentrations of poverty. Because of this, a two- to three-hour commute one way is the norm.

In India, developers moved into the affordable housing space after the global economic recession dried up the higher-end housing market. The demand for affordable housing remains high, but a similar pattern of locating affordable housing far from city centers is emerging. Both Mumbai and Delhi have housing projects located 65-75 kilometers from city centers. An affordable housing development, being built by Tata Housing, is 1,300 units over 67 acres. This development is considered housing for Mumbai's low income residents and is located 98 kilometers from South Mumbai in the exurb of Boisar. While these may be the extremes, Chennai and Pune have projects located 25-35 kilometers from the city center. Developers in India are creating affordable housing units, but for them to be able to do so, it is on 15-35 acre tracts



This low-density corridor along Johannesburg's Rea Vaya BRT would benefit from the sort of TOD proposed by the Corridors of Freedom initiative.

of land located at least 20 kilometers from a city center, according to a report by Jones Lang LaSalle, an international financial and professional services firm specializing in real estate.

This sort of affordable housing boom is happening in Mexico too, as are the unintended consequences. According to *State of Housing Mexico*, a report by Harvard University's Joint Center for Housing, the overall number of housing loans per year tripled from around 400,000 in 2000 to 1.4 million in 2008. While this was due to a variety of reasons including the macro economic environment and improvements to the two main financing mechanisms, it is in part due to the substantial increase in federal government subsidy programs, like *Esta es tu Casa* ("This is your house"). The number of households receiving financing through these federal programs increased eightfold, from 50,000 in 2000 to 400,000 in 2010.

While the government was greatly expanding access to financing for individuals and families—as well as developers—the urban population doubled between 1980 and 2010, and the urban footprint increased a staggering sixfold. This was, in part, due to the national affordable housing policies driving development further and

further away from city centers, according to the same report from the Joint Center for Housing. Large shares of this housing, though, remain unoccupied. Two out of every ten units financed by INFONAVIT were uninhabited according to a 2010 study conducted by that agency. One-third of those homes were abandoned because they were simply too far away.

In South Africa, the provision of affordable housing has been a hot issue since the apartheid system was dismantled in 1994. Facing a need of about 3 million housing units, the 1994 government implemented its Reconstruction and Development Programme (RDP). Under this national subsidy program, households earning less than R3 5,000 (U.S. \$500) a month and satisfying a range of other criteria can apply for a fully subsidized house. However, these homes are typically far outside of the city, with little to no public transport. In addition to the provision of affordable housing, the government also provides grants and long-term loans to assist government-accredited affordable housing developers. Similar to the abandonment of homes in Mexico, many of the owners are choosing to rent their RDP homes and live in more convenient locations.

In India, South Africa, Mexico,

Mumbai and Delhi have housing projects located 65-75 kilometers from the city center. Chennai and Pune have projects that are 25-35 kilometers from the city center.

and Brazil, the government's use of affordable housing policy and financing—despite seeking to address a real housing shortage and bolster the economy—is inadvertently driving the development of cities towards more and more sprawling and unsustainable forms. Moreover, any savings gained by lower income families from affordable housing is being eaten by increased transportation costs.

Connecting the Dots

The United States has decades of experience with the unintended consequences of national housing policy, including inducing sprawl, emptying out city centers, and shrinking the urban tax base. The U.S. is now embracing mixed-income transit-oriented development as a way to correct the missteps it made in the past. Brazil, Mexico, South Africa, and India have a chance to learn from those mistakes and bypass the blunders the U.S. made in the middle of the twentieth century. And the timing couldn't be better as many of the cities in need of affordable housing are either concurrently building public transit systems, like bus rapid transit, or already have a strong legacy of public transport. By linking these two, cities around the world can build more efficiently, while addressing the two most critical expenses of a household—housing and transportation costs.

According to the Center for Transit-Oriented Development, working families who move far from their employment to find affordable housing end up spending their savings on transportation. As its report, *Mixed-income Housing Near Transit*:

The U.S. has decades of experience with the unintended consequences of national housing policy: sprawl, emptying out city centers, and shrinking the urban tax base.

Increasing Affordability with Location

Efficiency concludes, affordability is not just about housing costs, it is also about transportation costs. Thus, when it comes to affordability, location matters and location near transit is critical to ensuring that affordable housing does not lead to isolation and a lack of access to services and jobs. That is missing from affordable housing policy in Brazil, Mexico, South Africa, and India.

Rio de Janeiro is planning 180 kilometers of bus rapid transit to be completed by 2016. When comparing where the new affordable housing developments are located to the planned BRT routes, there seems to be no link or coordination. Mexico City and the State of Mexico are rapidly rolling out new corridors of bus rapid transit, and the city just opened a new metro line, but affordable housing developments are not happening around those either.

While a lack of coordination may be an issue, site selection for affordable housing is driven by the private sector or financing institutions that may be charged with land assembly. Therefore, the critical considerations in site selection are low costs for land and ease of land assembly. Often around transit or in more urban areas, land ownership is fragmented and parcels are small and may not be available. Land assembly is complex, and it can take years—as long as a decade—to piece together all the land for a larger development in an already built-up area. Unlike higher-end housing, developers do not make their margin on appreciation of land. For developers to make a margin on affordable housing, they need quick turnover and short implementation and construction times. This is because they do not want to tie up their capital for too long in investments that give a lower

rate of return, whereas with higher end housing markets, the longer they hold onto their developments, the more it appreciates and the higher the rate of return on their investment.

The other main issue for developers is the length of time it takes to get approvals for development. In Mexico, it is often easier and cheaper to build new housing along the urban fringe because doing so in denser areas involves lengthy bureaucratic transactions, a costly approval process, and lots of time. In India, the project approval processes can add 30 percent in project costs and 2.5 years to the pre-construction phase, according to a report by KPMG, a professional services firm that specializes in auditing.

One of the ways that many governments are able to acquire land is through expropriation (also known as eminent domain), but that often stipulates that that land be used only for public uses or for the public good. In South Africa, the government is able to take land for municipal purposes, of which affordable housing is included. However, it cannot use the expropriated land for mixed-use projects, as the commercial uses are not considered a municipal purpose. If the government owns or buys the land, though, the government is not restricted to use that land only for the public good.

Another problem with most new affordable housing units is that they are single-use projects, consisting only of residential development. This is partly due to the fact that commercial and

residential developers often operate in distinct silos, using different financing sources and working with different government groups, according to the *Financing Equitable TOD* report from Living Cities. Developers may not have the capacity to take on the more complex, mixed-use, mixed-income TOD projects, or they may not have the incentive to do so. Regardless, the outcome—as



Some affordable housing developments in Mexico have a 20 percent vacancy rate, in large part due to the projects' distance from city centers and transit.

the U.S. learned through decades of similarly directed policy—is an isolated lower-income population without easy access to employment opportunities or basic services.

Lessons Learned

The U.S. found that economic isolation—both in terms of having large groups of low-income people living with each other and not being integrated physically into the urban fabric—is detrimental and does not lead to economic or social mobility. The HOPE VI program, a U.S. Department of Housing and Urban Development program initiated in the 1990s to revitalize squalid and deteriorated public housing projects, devoted \$4.5



In Mexico, the urban population doubled between 1980 and 2010, but the urban footprint increased a staggering sixfold.

ment include land banking, where a local government acquires and unifies the small parcels often available in denser urban environments; fast tracking project approvals and permits; help with financing mechanisms, like mezzanine loans; inclusionary zoning policies; and streetscape improvements for mixed-income developments that make the whole project more marketable. As the United States has seen, design matters for these types of projects. The integration of housing and transit must begin with the physical environment, high quality public spaces, and places for walking and cycling.

India, Brazil, South Africa, and Mexico are already making steps in the right direction. Parking reform is underway in Mexico City, BRT is in construction in Rio de Janeiro, and South Africa's "Corridors of Freedom" initiative aims to use TOD to redress spatial inequality that resulted from apartheid-era planning. In Ahmedabad, India's bold efforts to increase density around their new transit corridor show ample evidence that significant change is possible. The critical factor will be pairing those efforts with a holistic understanding of the interplay between transport, housing, and sustainability.

U.S. cities are spending hundreds of millions of dollars retrofitting and rethinking their urban landscapes because they weren't able to do it right the first time around. India, Brazil, Mexico, South Africa, and other rapidly urbanizing nations around the world can learn from that mistake and with planning, patience, and help from local governments, they can not only provide affordable housing but provide an affordable lifestyle rich with the possibility of upward mobility and designed with a better future in mind.

TOD and Climate Change

- Studies show people who live in TOD are 5 times more likely to use transit and that people who work in TOD are 3.5 times more likely to use it.
- The *Growing Cooler* report found that people drive between 20 and 40 percent fewer miles in transit-rich neighborhoods in the U.S. due to increased use of transit, walking as well as cycling, and shorter trip lengths.
- Data from Washington, D.C., shows that people drive between 30 and 70 percent less in TOD neighborhoods than the regional average.
- A 2009 IDB study found that private cars emit 50 percent less CO₂ per vehicle because of more efficient land use patterns. (CCAP article May 9, 2013)
- Residents of TODs, use transit 2 to 5 times more than other commuters regardless of trip purpose. (CAI LAC report)

billion over 10 years to demolishing and redeveloping distressed public housing projects as mixed-income developments. But developing mixed-income housing near transit presents several significant challenges, including increased complexity around land assembly and high land costs. This means that attracting or supporting mixed-income housing as a significant component of TOD will require incentives or policy tools that ensure that housing is available for all income groups by helping to mitigate the risk for developers to work on such projects.

In the U.S., city, state, and federal governments are beginning this move by focusing on transit. Twenty-eight states, when approving projects to receive the low-income housing tax credit (LIHTC), are already requiring proximity to transit or giving preference to projects that are close to transit. For example, California's LIHTC program automatically grants transit-accessible, affordable-housing projects 7 out of 15 possible points in its amenities evaluation category, increasing the project's eligibility for the tax credit.

Some municipalities have also targeted parking regulations to lower construction costs, while ensuring density and encouraging transit use. In San Francisco, the Folsom and Dore apartment complex had its parking require-

ments reduced to .31 spaces per unit, freeing up space for 28 protected bicycle parking spaces and a car-share car.

Other policy interventions that facilitate smart affordable housing develop-

Integrated Car-Sharing

An Interview with Michael Glotz-Richter

Car sharing is a model of car rental that is preferable to city residents, as stations are located in city centers and neighborhoods, much like bike sharing stations, so they are easily accessible as a point-to-point form of transit. Car sharing is available in over 1,000 cities and allows short periods of car rental, often by the hour. This model is attractive to customers who need only occasional use of a vehicle. Most car sharing programs are either station-based, requiring the user to make a round trip to a reserved parking space, or free-floating, allowing users to leave a car anywhere in a designated area.

Bremen, Germany, has emerged as a best-practice in car sharing with Cambio, a station-based system that is fully integrated with the city's cycle share, bus, and metro, allowing users to seamlessly switch modes with one integrated fare card. Bremen received an honorable mention at the 2013 Sustainable Transport Awards and was awarded the 2013 European Sustainable Energy Award for its car sharing action plan.

Michael Glotz-Richter is a Senior Project Manager for Sustainable Mobility for the city of Bremen. Throughout his 20-year career in the city, he has worked to link transport and urban development with lifestyle issues for the sake of better facilitating what he calls "mobility culture." These efforts have led to a number of innovative programs focused on cycling, walking, promoting collective transport, and especially car sharing. Glotz-Richter spoke with ITDP's Michael Kodransky earlier this year. Their conversation has been edited for publication.

Why did Bremen decide to promote car sharing?

A private car in Germany is usually in operation for about 55 minutes a day, so it's parked for more than 23 hours a day. We don't have the space or money to build garages for everyone's private car, so those vehicles end up sitting idle and taking up precious street space for about 95 percent of their time. Car sharing significantly reduces that percentage. More people can benefit from the car's purpose and fewer people have to deal with the consequences.

What does that mean in practical terms? How have the numbers worked out in Bremen?

Every car-sharing vehicle replaces 11 private cars, and we have 200 cars in our system. That means we've taken more than 2,000 cars off of Bremen's streets, or roughly one percent of the 200,000 cars in a city of 500,000 people. That's very significant. It is now part of an extensive strategy developed by the city.

So do you have a specific goal in mind by, say, 2020?

Yes. Right now, we have 8,000 car-sharing users. By 2020, we have the target of achieving at least 20,000 car-sharing users, which means we would need around 500 car-sharing cars and about 100 additional stations. These cars will replace about 6,000 private cars. This is a huge gain—a huge benefit for the city, for the streets, for the citizens—because we can really take out on-street parking, which is usually a very sensitive political issue. We have put this all into a municipal car-sharing action plan which was unanimously—and that's really an important point—unanimously adopted in September 2009 by the political committees. Bremen is, as far as I know, the first city worldwide that delivered a politically-adopted action plan on car-sharing by the municipality.

Do you find that the public has been in support of the Bremen system?

In the beginning, there was a lot of skepticism. Now we have much more support because we can prove the success with a lot of data and also a lot of reports. There are even public administration departments using car sharing. Building parking garages is, for us, not an option because it's expensive. We don't have the money so we need to work with smarter approaches. We have the support, for instance, of the waste collectors and the firefighters, because they also now understand that car sharing is really reducing the pressure and the demand for parking on our inner city streets.



How does the Bremen system work?

We have an independent car-sharing operator called Cambio, a medium-sized, private enterprise, running a station-based system with a variety of cars. It started in 1990. By 1998, we had the first public transport fare-ticket integrated car sharing option, the so-called “Bremer Karte plus AutoCard.” It allows people to use one payment card for their transport needs. They could pay for a bus ride, buy a train ticket, and use the car-share system with one card.

Can you describe the difference between a station-based and free-flow car sharing system? Is one or the other the next generation of car sharing? And going further, how is car-sharing different from car rental?

The first car-sharing systems were station-based. You have to return the car to the same station where you picked it up, so it is for round-trips only, but it also allows users to reserve a car in advance. In free-floating systems, the cars can be parked in a certain defined operational area of the city—but you can’t make reservations in advance. Within that area, you can make one-way trips. If you leave the operational area, you have to return the car into the operational area. That’s very convenient, but the vehicles are not always where you want them when you need them. One other thing is that free-floating systems usually have a very limited choice of vehicle types. The next generation of car sharing is very likely a hybrid system.

Every car-sharing vehicle replaces 11 private cars, and we have 200 cars in our system. That means we’ve taken more than 2,000 cars off of Bremen’s streets, or roughly one percent of the 200,000 cars in a city of 500,000 people.

Car sharing offers a good opportunity for inner city developments to prosper because public street space is a valuable asset. When you don't have to provide so much parking, you can create much more affordable housing.



Images: City of Bremen

Top: The Bremer Karte plus AutoCard can be used for car sharing, bus, and light rail.
Bottom: The Cambio mobile app tells users where they can find the closest available car.

With car rental you have to go to an office to get the car, and a staff person checks it after every use. That makes car rental much more expensive than the automated stations. Of course, car rental has its place too, especially when you want to use a car for a longer period or a long distance, like between two cities.

What are the average cost savings to drivers from using car sharing versus a private car?

Owning a car in Bremen is at least 250 euros a month with insurance, tax, and depreciation costs. Together my wife and I pay 7 euros a month for being members of the car sharing system. Then we have to pay for the usage, but this is rarely more than 100 euros a month.

Has car sharing allowed Bremen to refine the land-use regulation related to private off-street parking?

In our historic inner-city areas, there is very little off-street parking. In these areas, car sharing works really well. People don't like the hassle of finding a parking spot, and with car sharing you have a reserved spot. In terms of regulations, the building regulations require a certain provision of both car and bike parking. Previously, a developer had the option to pay a fee in lieu of building the car parking, but since January 2013, instead of paying a fee or tax to the city, developers can invest in what's called "mobility management" by providing transit tickets or car-sharing memberships, or subsidizing car-sharing stations. This reduces parking needs. We want to reduce the dependence on the car. So this is another step we have just recently taken, changing the building regulations to favor mobility management instead of car parking.

What is the impact of car sharing on real estate values?

Car sharing offers a good opportunity for inner-city developments to prosper because public street space is a valuable asset. When you don't have to provide so much parking, you can create much more affordable housing. And again, in the inner-city you don't depend so much on the car to do your grocery shopping and get to work. We are able to create more affordable housing and make inner-city areas more attractive—to be a real alternative to suburbia. It's a chance to regenerate the city and to achieve a higher-level quality of life. We see in Europe and some American cities a movement back into the city with every improvement. People want a certain quality of life. That requires a high standard of neighborhoods. Car sharing is part of that standard.



Chennai Walks Again

by Advait Jani

Detroit may be the Motor City, but it has always provided at least a modicum of facilities for pedestrians. Ever since Chennai earned the title “the Detroit of India,” street design in the metropolis has seemed focused on taking away pedestrian space to make more room for cars.

For years, footpaths and sidewalks have suffered serious losses. They were always a planning afterthought, but more recently, they’ve been eaten away until almost no dedicated space remains for people to walk. Along some streets, they were completely removed, leaving anyone without a car to brave the traffic-filled thoroughfares.

Recently, though, this trend has been

reversed. With the help of ITDP and an NGO called Chennai City Connect, the Corporation of Chennai, the local municipal government, has started to plan and build high-quality footpaths along 71 bus-route roads. All of these new footpaths include separate walking space, outdoor furniture, and are free of utility boxes, poles, and other impediments. They also adhere to the latest Indian Roads Congress standards.

While senior city officials and some media houses support the idea of providing better spaces for walking, there is a need for much wider acceptance from engineers and traffic police. What is heartening is the fact that, despite external and internal pressures, the top

Above: A newly constructed granite footpath on Police Commissioner Office Road in Egmore gives ample room to pedestrians.

city officials have remained resolute when pressed by those with a singular focus on the movement of personal motor vehicles. They have stood up for pedestrians and redoubled their efforts, recently announcing a new plan that will see footpath improvements on 249 additional roads over the coming year, as well as an official non-motorized transport policy that will make it mandatory for the city to design pedestrian friendly streets.

The future looks bright for walkers in Chennai!

Left: Before the improvements, illegal parking and storm-water infrastructure would force pedestrians to walk on the carriageway alongside fast moving vehicles. Right: A new bus bulb out and wider footpath under construction on Pantheon Road.



Better Streets, Better Cities, and Less Parking



By Michael Kodransky

Lately, Nashville, Tennessee, has been gaining attention for more than tunes about broken hearts and cheating lovers. Best known as the epicenter of the country music industry in the United States, the city is now gaining acclaim as an innovator in sustainable transport, most notably by eliminating parking requirements to attract investment, tame traffic, and improve quality of life. These changes have also allowed for mixed-uses with higher densities in the downtown.

Along with density and transit, city regulators are starting to see that resolving parking policy is a critical instrument to creating better streets and better cities. Along with Nashville, Ahmedabad, India, and New York City offer insights into how these intentions are playing out to reshape parking policies and the cities themselves.

In early 2012, Nashville passed a new local ordinance that abandoned parking requirements and traditional use-based land regulations in the city center. The Downtown Code, as it is known, allows the market to guide land uses and off-street parking, while the city regulates design elements such as setbacks, street level facades, and height limits.

Developers of Velocity, in the Gulch neighborhood of Nashville, took advantage of the Downtown Code to build only the off-street parking they needed, which saved money and boosted density.

Prior to this change, nearly 95 percent of investment in the downtown required developers to go through hurdles in order to build the types of projects they thought would be successful. In 2002, every single one of the projects submitted to the planning department for review were non-conforming, according to the old code. The focus on uses, specifically single uses, in the old code had made redevelopment a challenge. To create a new urban fabric, the city needed to focus on form rather than use. The new Downtown Code does just that. Though the city has yet to see a development without any parking included, Downtown Nashville is slowly getting more of the amenities people want in the way of mixed uses, high rises, and greater pedestrian connections.

A truly compact urban fabric will not be possible until high quality mass transit is in the mix, and Nashville is well on its way to addressing the lack of mass transit that would make fewer driving trips a real possibility. The East-West Connector, a high quality bus rapid transit corridor is being planned for the city and could be a Silver or Gold Standard corridor. But in the downtown section, the BRT would run in mixed traffic, becoming more like regular bus service and losing all of the most important benefits of BRT where they are most needed. To fully capture the progressive moves the city has been making, maintaining full BRT in the downtown will be critical to creating the quality of transit service that will retain and grow ridership. ITDP has been providing technical assistance to the city on

In 2012, Nashville passed the Downtown Code, a local ordinance that abandoned parking requirements and traditional use-based land regulations in the city center.

that project.

On the other side of the world, Ahmedabad, India, is struggling with a different section of the same tune. The city is keen to support transit-oriented development (TOD) around the Janmarg BRT by increasing density, but it has yet to reform off-street parking regulations to be transit supportive. Ahmedabad has a high capacity public transit system (Silver on the BRT Standard), which passes through some of the central parts of the city.

New regulations passed in 2013 for designated TOD zones require a staggering 40 percent of floor area to be parking in all new commercial

in the city, contradicting the purpose of a TOD policy in the first place.

Meanwhile, affordable housing would only require that 10 percent of a development's floor area include parking. While this is an improvement on the old regulation, it is still a burden on affordable housing developers. In a TOD zone, and in the case of affordable housing, parking requirements only undermine any principles of an equitable city.

In the case of New York City, Manhattan's central business district gives light to the kind of urban harmony that is possible when parking, transit, and density are properly balanced. Instead of requiring parking, the city has a cap on the number of spaces allowed in new buildings, should a developer decide parking is needed or desirable. The cap allows a maximum of 20 percent of the number of dwelling units in a building to include parking within a large portion of the Manhattan core. A second area within the core allows only up to 35 percent of the number of dwelling units in a building for parking development. Commercial uses also have a cap on the total number of accessory spaces allowed. This restriction is part of why most residents in Manhattan do not own a private vehicle, which helps boost transit ridership and further encourages density, forming a virtuous cycle that makes the city more and more livable.

Structured parking is also expensive to build and often skews housing costs. In a city with an affordable housing problem, more parking would only further increase housing costs. New York City's Department of City Planning changed the zoning laws in the last years to concentrate new development around subway stations while restricting development in areas with less transit access. This is a step that will give residents greater mobility and access to high-capacity transit.

Image: ITDP



In New York City's Chelsea neighborhood, developers have taken advantage of zoning that allows increased density near transit and a parking-space cap that ensures the neighborhood remains a world-class destination.

buildings and 20 percent of floor area in all residential buildings along Janmarg. These are increases in the requirements from the old regulations of 15 percent of floor area for residential and 30 percent of commercial floor area. Such a measure would impact ridership on Janmarg's BRT by enabling easier access to driving and also exacerbate traffic congestion



In Ahmedabad, outdated planning regulations require a stilt building with parking below the main structure to have redundant setbacks that inflate costs, reduce building size, and hurt the pedestrian environment.

Transit and parking go hand-in-glove. People want easy access to destinations. They want to be able to travel comfortably and affordably. If a city allows development in an area without transit then driving is the only feasible way to get around, especially if that development caters to middle-to-upper income residents who can afford a private vehicle. This type of development exists on the western periphery of Ahmedabad, where gated communities of taller buildings with good plumbing and modern amenities are rising (along with car use) far from the transit of Janmarg.

Nashville changed its land use regulations, in part, to develop enough density, and thus ridership, to support transit. The lack of current transit is still stimulating lots of parking development and may impact transit use in the future. At the same time, Ahmedabad has transit and ridership but might be headed on a parking riff that undermines both.

Transit quality must appeal to high-income earners in order to make living without a car attractive, and that's another part of the key to managing parking. The blurred lines between the provision of parking and city livability need more focus and fine tuning. In Nashville and Ahmedabad, as in any other city, planners and city officials will need to boost transit access and manage density to capture the full benefits of parking reform.

The Power of a Park(ing) Space

Now in its ninth year, Park(ing) Day is a worldwide celebration of public space and creativity. It also raises a serious and often overlooked question about parking policy: Is the storage of a vacant vehicle really the best use of every single parking spot in a city?

The theme for 2013 was “Park It and Relax!” In Rio, ITDP Brazil partnered with Studio X and Transporte Ativo, and used the event to launch a “pocket version” of downtown cycle routes. ITDP Mexico partnered with other local NGOs on an event in the neighborhood of Colonia Juárez, and used the event to engage the media on the value of street space. ITDP Argentina hosted a full block of pocket parks, with seven parks total, and the event was covered in the country's most popular newspaper, *Clarín*. In Jakarta, ITDP Indonesia hosted a picnic, open to the public, with the NGO Ruang



Publik Jakarta in Menteng Square.

Across the globe, the day was a huge success, with parks in more than 162 cities in 35 countries and six continents. ITDP's policy-minded staffers got some time in the sun and helped spread the word to hundreds of thousands of passersby that there are more options for their streetscape than car storage.

For more information on Park(ing) Day, visit parkingday.org.



In the U.S., Bike Share Hits Its Tipping Point

By Stephanie Lotshaw and Colin Hughes



With the success of French systems Velo'v and Vélib' in Lyon and Paris, and the explosion of bike share in China and Latin America, bike share has begun to spread rapidly around the world. Over the last decade, bike share has become an increasingly accepted form of public transport that has finally caught on in the United States. This year, several U.S. cities brought this option for urban commuting into the American mainstream.

While the U.S. remains one of the most car-oriented countries in the world, the status of cycling is rising and so is bike share. Hopefully, just as the U.S. model of car-centric development has spread around the world, this shift will create a new,

Capital Bikeshare has helped double cycling in the District of Columbia and increased the bicycle mode share to 3.5 percent of all commuting trips.

Image: DDOTC



Bay Area Bike Share opened in August with 700 bicycles at 70 stations.

cycling-focused model of development. In particular, the growth in bike share has the potential to influence the creation of bike share in regions, such as Africa, India, and Southeast Asia, where bike share has yet to take hold.

San Francisco is the latest U.S. city to hop on the country's bike-share bandwagon, bringing the number of metropolitan areas with bike share programs to 34 and the total number of bike share bikes available nationwide to more than 18,000. That's 8,000 more bikes than at the start of 2013 and 17,000 more than at the start of 2007.

This unprecedented boom in U.S. bike sharing is the result of a number of factors: the hundreds of successful systems up and running around the globe that serve as an example; the goals of increasing cycling, reducing congestion, improving air quality, and offering residents an active mobility option that are frequently on the agenda of city officials. There are also key advantages when compared to other transportation projects: the implementation costs are comparatively low (in the millions of dollars, not the billions); they rarely require government subsidies; and the timeline is short. It is possible for an ambitious city government to plan and implement a bike-share system in one mayoral term.

For these reasons, dozens of cities across the country have implemented bike share, and more programs are starting every year. Many of the most successful systems share certain features: a dense network of stations; comfortable, easy to ride bicycles; a fully automated locking system; GPS tracking; and pricing structures that incentivize short trips.

Where U.S. cities have taken different paths to success is in establishing a business structure to operate their bike

share systems. New York, after undergoing a lengthy feasibility study that identified various options for institutional structure and financing, decided on a privately owned and operated system that is fully sponsored and requires no public funds.

New York's bike share system, Citi Bike, is operated by NYC Bike Share, a fully owned subsidiary of Alta Bicycle Share, and all funding for operations comes from sponsorship and user fees. The city decided to focus on the higher-demand areas (as identified by population density), so that the operating revenues, combined with sponsorship, would cover the operational costs. Citibank provided New York City's bike share with \$41 million to sponsor the system over five years, and received exclusive naming and branding rights. MasterCard provided \$6.5 million for a five-year sponsorship and was named Citi Bike's Preferred Payment Partner, with its logo displayed prominently on the station terminals.

Denver's bike sharing program had slightly different origins. It began in 2008 at the Democratic National Convention with seven "Freewheel Stations" in manned tents around the downtown. The small system had 7,000 riders within the DNC week. Then-mayor John Hickenlooper saw the success of the system and lobbied the DNC Host Committee for \$1 million to start the bike share system. Now the program, known as B-cycle, is owned and operated by a non-profit, Denver Bike Sharing (DBS). Currently, Denver's system has 520 bikes and 52 stations. Unlike New York, DBS is sustained through sponsorships, grants, and advertising. With these funds, DBS purchases hardware and does all of the sponsorship, marketing, customer service, and bike maintenance. The Nice

Ride bike-share system in Minneapolis uses a similar model.

Capital Bikeshare, in Washington, D.C., uses the same bicycles, stations, and operator as New York City, Chicago, and San Francisco. It now has 1,800 bicycles and 265 stations. D.C.'s system has helped double cycling in the District and brought the bicycle mode share to 3.5 percent of all commuting trips. Capital Bikeshare has no corporate

sponsors but nonetheless has managed to recoup 120 percent (\$2.5 million) of its operating costs (\$2.1 million, not including marketing and management costs), according to the District Department of Transportation's spokesman John Lisle. Given that the region's public transport authority, WMATA, recovers about 55 percent of its expenditures from the fare box and expansion of public transportation can be expensive

and time consuming, bike sharing is a great complement that helps make transport in the Capitol more environmentally sustainable while minimizing the economic impact.

Though these paths to success are strikingly different, the fact that the U.S.'s bike share programs are wildly popular is obvious. In cities across the country, people are taking to bike share, and municipal governments are tak-

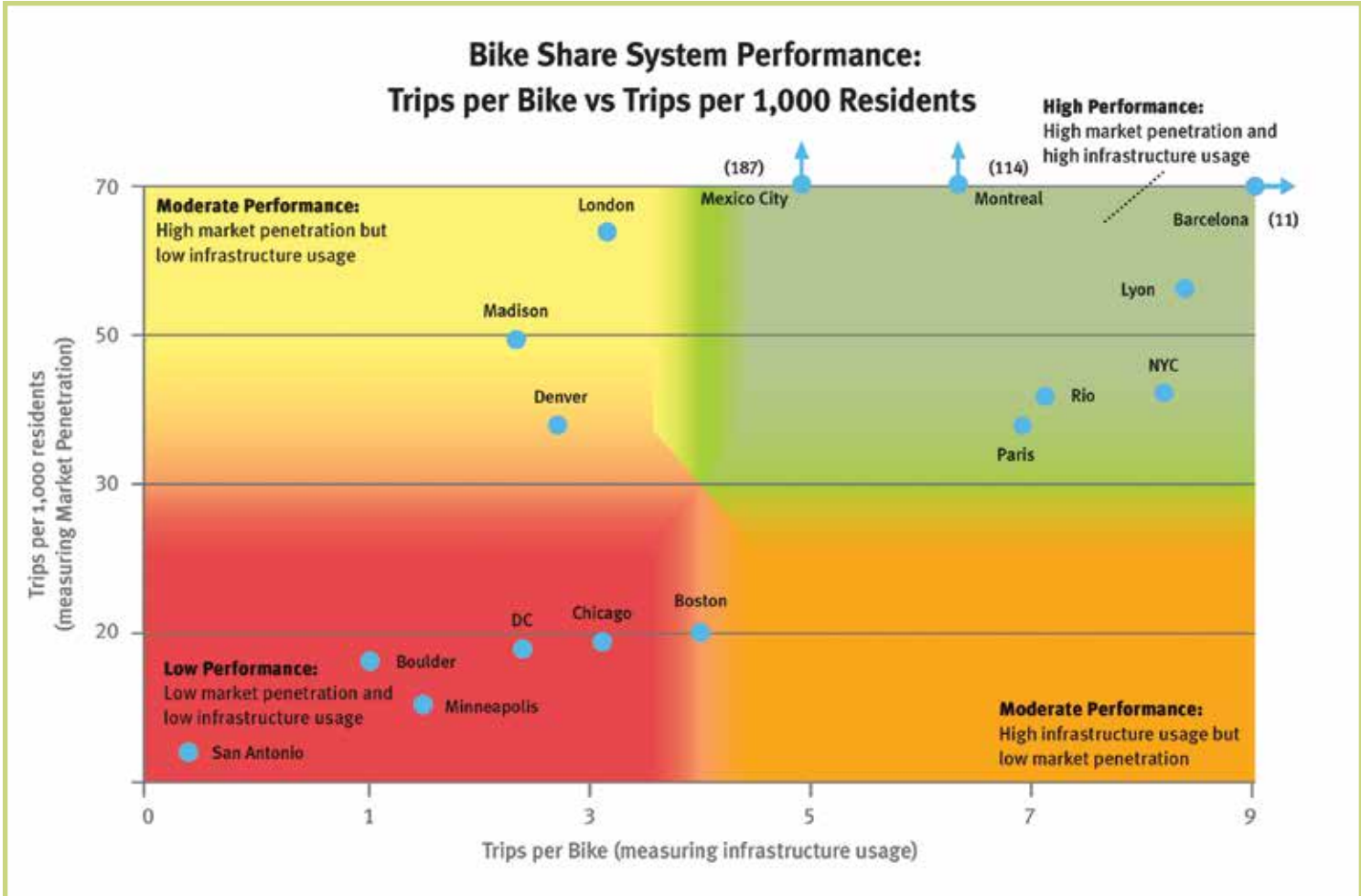
New York's Citi Bike system logged 4.5 million trips in its first four months.



Image: ITDP

ing notice and getting results with a wide array of context-specific adaptations and business models. Next year, already-planned programs and expansion efforts will nearly double the number of bike-share bikes available in U.S. cities to 37,000.

This big jump for bike sharing in the U.S. is a sure-fire sign that more innovations are on the way. Cities around the world, from the largest system in Hangzhou, China, with 65,000 bikes, to cities reinventing their bike share systems, like Rio de Janeiro, Brazil, and Buenos Aires, Argentina, are continuing to improve and grow. The next wave to watch will be in India, Africa, and Southeast Asia.



As part of ITDP’s new *Bike Share Planning Guide*, a team of researchers set out to determine which of the world’s major bike share systems worked best, both in terms of cost-benefit and actual on-the-ground performance.

As shown in the figure, the best bike share systems maximize two critical performance metrics: average number of daily uses per bike and average daily trips per resident. However, many systems have high use because they have too few bicycles in circulation, while others have a high number of daily trips per resident, but too few trips per bike, indicating too many bicycles in circulation.

The results shows that the green section, including Ecobici in Mexico City, Bicing in Barcelona, and Bixi in Montreal perform the best at generating high trip rates among their populations and also high usage rates of their bicycles, making them the most cost-effective. While the red section, including San Antonio and Boulder, perform the worst, largely due to having too few bikes in circulation.

To download the complete study, learn what other factors contributed to the high performance of these systems, and read ITDP’s recommendations for bike share system planners worldwide, visit itdp.org/bikeshareguide.

Riding to Fight Climate Change with Team ITDP

In September, nine ITDP staff and supporters cycled the 300 miles from the frenetic bike lanes of Manhattan, through the historic farm country of the Mid-Atlantic, to the lawn of the U.S. Capitol as part of the annual, five-day Climate Ride. Climate Ride participants are required to raise a minimum of \$2,400 in contributions, which is donated to the climate-mitigating non-profit organizations of their choice. This year, Team ITDP members raised over \$23,000 for important climate initiatives.

and Project Evaluation, summed up the importance of the ride: “This is a great event for ITDP. Not only are we raising awareness about climate change but we’re utilizing one of the most important solutions: the bicycle. The participants, the daily speakers, the organizers, the routes we cycled, and the places we visited were all amazing. We left really empowered. We hope more ITDP supporters will join us in the ride next year!”

The next Climate Rides will be in

California in May 2014, from New York to Washington in September 2014, and a third, to-be-determined date through the Midwest. ITDP plans to organize teams to participate in each of those rides. All participants will receive a newly designed ITDP cycling jersey, assistance in fundraising, and invites to team activities before, during, and after the ride. If you are interested in joining Team ITDP, as a rider or supporter, contact Colin Hughes at colin.hughes@itdp.org.



Team ITDP celebrates a successful Climate Ride finish after biking from New York to Washington, D.C.

“It was really awesome all the support that I received from my family, friends, co-workers, and even people that don’t know me,” said Team ITDP member Juan Manuel Prado, who traveled from Colombia to join the ride.

Once the trip reaches Washington, D.C., Climate Ride organizes meetings with congressional representatives so each rider can lobby on behalf of addressing climate change. This year, the riders were met with a welcome speech by Senator Sheldon Whitehouse (D-RI).

Colin Hughes, Captain of Team ITDP and ITDP’s Director of National Policy

Remembering Joel Gaalswyk

Long-time ITDP supporter Joel Gaalswyk passed away last year at his home in Spring Green, Wisconsin. A public servant and an environmentalist, he spent his life advocating for peace and inspiring others to make ecologically conscious decisions.

Even as a child growing up on a farm in the Midwest, Joel seemed hard-wired to conserve and reduce his participation in the deterioration of the environment. He lived in constant connection with his natural surroundings and exhibited genuine concern for the fate of the planet with his philanthropy and his lifestyle choices.

Joel believed that every human needed to do their part to reduce the negative effects their actions were having on the world. He liked to use his bicycle when it was a reasonable transportation option. “Those who most need bicycle transportation are the more numerous people around the globe who cannot pay the price, neither for fuel nor the motor vehicle,” he wrote in his journal.

Joel was a true believer in ITDP’s goals and lived its mission. He shared stories of our work with his com-

munity, and as a political leader, he advocated for the most pedestrian and environmentally friendly use of public space.



The Institute for Transportation and Development Policy is truly grateful for loyal supporters like Joel Gaalswyk. His passion for the environment and leadership in his community were nothing short of admirable. Special thanks to Joel’s wife, Chloe Gaalswyk.

Institute for Transportation & Development Policy
9 East 19th Street, 7th Floor
New York, NY 10003

Presorted
First Class Mail
US Postage Paid
New Haven, CT
Permit No. 39

2014 sustainable transport award

For visionary achievements in sustainable
transportation and urban livability

Washington, D.C.



Join ITDP and our partners as we celebrate cities that
are transforming their streets and fighting climate change to
create high-quality public spaces.

2014 Finalists

Buenos Aires, Argentina

Indore, India

Lanzhou, China

Suwon, South Korea

Join Us

Sustainable Transport Award Ceremony

January 14, 2014

International Ballroom, Washington Hilton

Washington, D.C.

For more information visit www.st-award.org.

Images: Fabricio Di Dio, EMBARQ, ITDP China, ICLEI

