Historic Revival at the Heart of Mexico City
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**Cover:** Line 4 of Metrobus BRT has helped to revitalize the historic center of Mexico City, along with many improvements to pedestrian and cycling facilities such as public plazas. Image: Adam Wiseman

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Superstorm Surges and Scaling Up

By Walter Hook

Another year, another East Coast hurricane. A 14-foot storm surge swept over the 12-foot protection wall around Lower Manhattan’s power supply, leaving much of New York City, including ITDP’s headquarters, without power for nearly a week. Two weeks after the storm, some folks were still pumping brackish water out of their basements, and others remain without power. The sidewalks were stacked with walls of black plastic garbage bags dripping with soggy refuse.

The cost of Superstorm Sandy is estimated to be about $50 billion, making it the most expensive natural disaster ever to hit the New York metro area. If we’re already seeing this sort of damage, what can we expect when we pass the two-degree change in our temperatures that scientists say could be cataclysmic? Total annual giving in the US for efforts to reduce climate change is under $500 million a year; and now one event is costing our region 100 times that. The costs of continued inaction are becoming increasingly clear.

But over the past year, ITDP remained active in the fight against climate change, and we learned that because transit agencies across the world have called even a few fancy buses and some painted bus lanes ‘BRT’, the public is often confused about what bus rapid transit is all about. At its best, BRT can deliver the same quality of service, speed, and comfort as the best metro systems at a fraction of the cost, and can be implemented in a fraction of the time. BRT remains the best option for most cities around the world to address their urban transit needs quickly and affordably. Yet, without a certification process, it can be hard for the public to know a world-class BRT from a simple bus lane. In response, ITDP and leading international BRT experts have created the BRT Standard. This new Standard (downloadable at brtstandard.org), tested in 2012 for a 2013 formal launch, was funded by the Rockefeller Foundation, and has already been endorsed by GIZ, among others. The BRT Standard is already giving practitioners, politicians, and the general public the critical benchmarks they need to know if they are getting real BRT.

ITDP has also begun to partner more closely with the real estate industry. These businesses are building the cities of tomorrow and have huge influence over municipal politicians. This dialogue is helping to educate developers on both good quality BRT and transit oriented development (TOD). Together, we’ve discovered that zoning regulations around the world are badly outdated and form a huge impediment to sustainable urban development. Internationally, most cities have not changed their zoning regulations in decades. These regulations were developed during an era when the car was king, and often make it impossible to design cities that are oriented to walking and transit.

Many developers don’t like these regulations any more than we do. Parking requirements can add up to 30 percent to the cost of a building, forcing even low-income families to subsidize car use. Cities should have a clear policy that if a new mass transit line, like a BRT, LRT, or metro system is built, the zoning near the stations should be changed to allow for higher

ITDP’s demonstration projects are being replicated at a rapid pace. The Guangzhou BRT system is reducing 86,000 tons of CO2 per year. Over 80 city leaders have visited this project, with Lanzhou and Yichang about to open systems directly inspired by Guangzhou. The Ahmedabad BRT system has won national and international awards and inspired a dozen other cities in India.

ITDP's demonstration projects are being replicated at a rapid pace. The Guangzhou BRT system is reducing 86,000 tons of CO2 per year. Over 80 city leaders have visited this project, with Lanzhou and Yichang about to open systems directly inspired by Guangzhou. The Ahmedabad BRT system has won national and international awards and inspired a dozen other cities in India.
density, less parking, and more transit-oriented land development. If this simple planning principle can be established, suddenly the international real estate industry becomes the world’s leading promoter of BRT. Every new kilometer of BRT would directly increase the value of the properties along its corridor, not only because of the improved access but, critically, also because of the zoning changes it would precipitate.

In just the last year, ITDP and New York City’s dynamic transportation and planning commissioners, Janette Sadik-Khan and Amanda Burden, presented on these topics to India’s national real estate association (CREDAI) and the Minister of Urban Development. Our President, Enrique Peñalosa, gave the keynote at the annual Urban Land Institute conference, and at the annual meeting of the China Real Estate Guide (REG) in Shenyang. I gave a keynote presentation at the annual meeting of ADI, (Asociacion Desarrollo Inmobiliar) in Mexico and discussed these issues with the Secretary of Urban Development. ITDP Brazil held a joint TOD conference with SECOVI, the real estate association of Sã Paulo.

This is just one example of how ITDP is taking the sustainable transport agenda to scale. In June, ITDP and our allies won a significant victory at Rio+20, convincing the eight largest multilateral development banks to redirect $175 billion a year in transportation lending towards more sustainable transport investments. We have begun an initiative in partnership with the Carnegie Endowment for International Peace on national urban transportation policy best practice. So far, the representatives from India, Mexico, Brazil, the US, South Africa, and the European Union have participated. Around the world, national governments are coming to the aid of cities needing to build critical mass transit infrastructure, and ITDP is helping to encourage and improve the quality of this process based on international best practices.

ITDP’s demonstration projects, meanwhile, are being replicated at a rapid pace. The Guangzhou BRT system, which we designed, is reducing 86,000 tons of CO₂ per year. Over 80 city leaders from all over the world have visited this project, with Lanzhou and Yichang about to open new BRT systems directly inspired by Guangzhou. The Ahmedabad BRT system, also designed by ITDP, is now over 45 kilometers long, and has won both national and international awards. It has inspired a dozen other cities in India, most recently Rajkot, which just launched a pilot BRT corridor. Thanks to ITDP’s advocacy and technical support, Mexico City just opened a new BRT through its historic center that connects to the airport, while Rio de Janeiro and Belo Horizonte in Brazil are opening the first real BRT systems in Brazil outside Curitiba. These are just a few of our recent wins.

Most recently, ITDP has built a growing program in the US with new partnerships in Chicago, Boston, San Francisco, Montgomery County in Maryland, Pittsburgh, and Nashville, to develop a Gold Standard BRT in the next few years. We are proving that BRT can anchor transit oriented development. With most of the US living in sprawling suburban areas, and with cities and states strapped for cash, BRT coupled with transit oriented development offers a real hope for the US to dig our way out of our current dependency on fossil fuels and reduce the role we continue to play in emitting greenhouse gasses.

I could not be more proud of our excellent and hardworking staff, or more grateful to them and our many core donors and partners such as ClimateWorks, the Hewlett Foundation, the Rockefeller Foundation, the Rockefeller Foundation, the Ford Foundation, and the Oak Foundation. Thank you for your support over the years, which has been critical to our ongoing success.
With New BRT, Rajkot City Adopts the Ahmedabad Model

By Kumar Manish

The system follows several of the best-practice design features of Ahmedabad’s Janmarg BRT system, which has become a successful model for BRT in India. In addition to Rajkot, two more cities, Surat and Vadodara, are planning BRT corridors. Surat plans to launch in early 2013.

Rajkot, one of the fastest growing cities in India with a population of 1.6 million, has become the second city in the western state of Gujarat to launch a bus rapid transit (BRT) system. Rajkot’s BRT system began free trial runs of BRT buses on an 11-kilometer pilot corridor in October 2012.

The Rajkot Municipal Corporation (RMC), the local municipal body, christened the new service Rajpath, or “Road of the Royal”. The pilot corridor is on the 150 Feet Ring Road, which is rapidly developing and interspersed with shopping malls and residential construction. To allow more residents to live and work near BRT stations, RMC has increased the allowed densities along the corridor.

Rajpath is a major step toward a formal public transport system in Rajkot, where most public transport demand in the city is served informally by three-wheeled auto rickshaws. The system provides an opportunity to achieve a long-term modal shift toward public transport through coordinated land use and transport planning.

The system follows several of the best-practice design features of Ahmedabad’s Janmarg BRT system, which has become a successful model for BRT in India. ITDP played a key role in the planning, design and implementation of Janmarg. In addition to Rajkot, two more cities in Gujarat...
Rajpath features BRT best practices such as median stations, off-board fare collection, and at-level boarding. The Rajkot Municipal Corporation had initially planned a system modeled after the Delhi BRT, but then switched to the more successful Ahmedabad model.

Surat and Vadodara, are planning BRT corridors. Surat plans to launch in early 2013.

Rajpath features BRT best practices such as median stations and at-level boarding. Electronic ticketing with smart cards is planned but not yet implemented. After multiple visits to Ahmedabad, planners made changes to more closely follow the Janmarg BRT approach, such as retaining a private bus operator who receives payment on a per-kilometer basis. RMC has formed a Special Purpose Vehicle, Rajkot Rajpath Limited, to operate the BRT services in the city.

At present, five air-conditioned buses are running the route on a trial basis. More buses will be added during three months of free trial runs before commercial operations begin. The Rajkot BRT also features integrated and well-designed cycle tracks and pedestrian pathways. “Cycling accounts for around a fifth of all trips in Rajkot, and the city’s cyclists deserve high quality, dedicated facilities,” said Chris Kost, Technical Director of ITDP India. “The cycle tracks along the Rajkot BRT corridor are a great first step and can serve as a model for further non-motorized transport improvements in the city.”

The entire Rajkot system will be implemented in three phases and eventually will cover a length of 63.5 km with three BRT corridors. The first phase was implemented at a cost of INR 175 (USD 29.6 million), of which USD 10.6 million went towards a split flyover along the corridor. The project was supported through the Government of India’s Jawaharlal Nehru National Urban Renewal Mission, which contributed half of the total project cost. The remainder came from RMC (35 percent) and the Government of Gujarat (15 percent).

ITDP, through a Memorandum of Understanding signed with RMC in mid-2011, has been providing inputs to the city for the creation of an extensive network of high-quality pedestrian and cycling facilities as well as parking reform. ITDP also shared information on BRT best-practices with the RMC team and now, at the request of RMC, is helping the city to plan the expansion of the BRT network.
Maria Ribeiro, a resident of Ilha de Guaratiba in the Northwest of Rio de Janeiro, used to spend two hours each way commuting to Novo Leblon in the Southwest. Since Rio’s Transoeste bus rapid transit (BRT) line opened in June, Maria, along with over 65,000 Cariocas (Rio residents) who are using Transoeste daily, has seen her commute cut by more than half. As further stations are launched along the line and additional buses added to the fleet, an average of over 110,000 daily users is expected by the end of the year.

Rio’s first world class BRT corridor, Ligeirão Transoeste, opened in June, and as of October it covers 40 kilometers (km) between Barra da Tijuca and Santa Cruz in the Northwest of the city. Running 24 hours a day, seven days a week, it offers express and local services on comfortable, air-conditioned articulated buses (18 meters long), each with capacity for 140 people. The express service has cut the 40 km journey from about two and a half hours to an average of 54 minutes. All of the 29 stations currently in operation are comfortable and weather protected. All stations are staffed by friendly attendants, security, and cleaning crews. One of the system’s most advantageous features is the off-board fare payment, which allows passengers to pay before boarding the bus and gain significant time savings for their journey. An integrated ticket “Bilhete Unico Carioca” fare of R$2.75 (US$1.30) allows the passenger to use up to two feeder buses and the BRT within a two-hour period, allowing them to use one ticket for the entire trip.

Ligeirão Transoeste represents the first step in a series of dramatic urban transport interventions in Rio. According to Rio’s Municipal Deputy Secretary of Transport, Carlos Maiolino, the city is investing in the construction of four BRT corridors, “not only to address the increase in passenger demand during the 2014 World Cup and the 2016 Olympic games, but primarily to leave a consistent legacy of improvements in urban mobility for Cariocas.” By 2016, Transoeste will form part of a network of 141 km of BRT across four lines, linking vital parts of the city, including the central business district (CBD) and domestic and international airports. These BRT corridors will integrate (both physically and by fare collection) with the Metro system, as well as the light rail planned for the Port of Rio area, a main urban transport project for the Olympics.

One key element of the new Transoeste infrastructure is the 1,100-meter long Vice-President José Alencar tunnel, which links the previously isolated working class zone northwest of the...
Demand is expected to increase to over 220,000 passengers per day by the time its final extension and integrations are completed, for a total of 56 km. By 2016, Transoeste passengers enjoy the new, single station.

This is welcome news given that during the recent United Nations Summit on Sustainable Development, 'Rio+20', more than 110,000 visitors to Rio de Janeiro spent hours stuck in traffic jams between the official venue in the Southwest’s Barra da Tijuca and the concentration of hotels and other events in the South and Center of the city. The congestion was near constant, and even caused some high level speakers to miss their engagements. This reinforced concerns about Rio’s ability to cope during their hosting of the FIFA World Cup in 2014, and of course, the Olympic games in 2016. Fortunately, as the first phase in Rio’s ambitious transportation plan gets up and running, the city is beginning to show that it has the time, vision and commitment necessary to turn things around.

The city is investing in BRT not only for the 2014 World Cup and 2016 Olympics, but to leave a consistent legacy of improvement in urban mobility for Cariocas.

two additional BRT lines, Transcarioca and Transolímpica, will be integrated with Transoeste, along with a new subway line. A state of the art intermodal station will allow passengers to transfer from bus to subway within a single station.
Despite the success of the first world-class BRT in the Brazilian city of Curitiba in 1974, poor quality BRTs in other Brazilian cities have failed to adequately address urban mobility problems, and their performance has tarnished the reputation of BRT. Isabela Cristina, a resident of the Santa Cruz neighborhood, was previously opposed to Transoeste. “At first, we in Santa Cruz thought it would be better to improve the local line 882, rather than invest in a whole new system”, says Isabela, whose commute has been cut by a third since Transoeste opened. “Now that we use it, we all know how much faster it is with the BRT,” she adds. A recent survey of Transoeste passengers by the Brazilian firm Instituto Mapear confirmed Isabela’s statement: in a survey of 400 passengers in July, 90 percent are satisfied with the service.

One of the most important features that allows a BRT system to reach its full potential and provide urban mobility improvements is how well integrated the system is with other modes of transport. One of the most important stations in the network is the Jardim Oceânico Terminal in Barra da Tijuca, where the Transoeste corridor will physically integrate with Metro Line Four, scheduled to open in 2016. This new subway line will link Barra da Tijuca to Copacabana, and continue on to the center of Rio on Metro Line One. Jardim Oceânico Terminal represents a major element of ITDP Brazil’s collaboration with the city of Rio. ITDP consultant and intermodal station specialist Oren Tatcher worked with the city to provide crucial designs and guidelines for the project. The city has requested specific designs for other stations, and is applying these concepts to other major stations in the network. “The learning experience for our team has decisively influenced our treatment of other BRT stations currently in the planning process,” said Maiolino, “ITDP is without doubt a major ally in the implementation of solutions that ensure that transport and urban mobility are orientated towards quality of life for our residents and the sustainable development of our city.”

There is still a long way to go for Rio’s transport system to reach its full potential. Bike infrastructure integration with BRT, for example, is still in the planning stages, and operational hiccups resulting in overcrowded buses are being addressed in negotiations with the city and operators. Yet Rio is making great progress in taking advantage on the opportunities and challenges presented by the World Cup and the Olympics to address the pressing transport needs of its population. If Rio’s BRT system implementation continues to integrate different regions of the city as successfully as Ligeirão Transoeste, the quality of life benefits for Cariocas will last well beyond the major competitions.

By 2016, the Transoeste corridor will be fully integrated with the metro. This new subway line will continue on to the center of Rio on Metro Line One.
In 2007, ITDP CEO Walter Hook and Technical Director Luc Nadal visited Mexico City’s historic yet blighted and neglected center. The area, particularly the eastern sector, was in dire shape. Beautiful, historic buildings were collapsing and being replaced with surface parking lots, the residential population had steadily shrunk (from 500,000 in 1950 to 195,000 in 1990, and then to 30,000 in 2005) and the sidewalks and pedestrian spaces were jammed with vendors and parked cars.

The city had already taken notice of the problem. Government, commercial, and academic leaders were beginning to take action to recover this important cultural legacy. Mayor Marcelo Ebrard had just announced the creation of a new entity, the Historic Center Authority headed by Dr. Alejandra Moreno Toscano, which was tasked with the revitalization of the historic area. Private investment, most notably from Mexican business magnate and philanthropist Carlos Slim, was resulting in newly renovated buildings. Museums, which had been closed for years, were reopening with assistance from the city government and the academic community such as the National University (UNAM). Yet, transit options were still limited.

To access the Zócalo, the historic city center, transit users had to choose between the subway, which meant walking up to a full kilometer between stations, or taking a slow moving bus in

Bernardo Baranda Sepúlveda is ITDP’s Regional Director of Latin America and is based in Mexico City.
traffic, with average speeds of just five kilometers per hour during peak hours. This, combined with the snarled traffic on small streets and sidewalk vendors who left little room for pedestrians, contributed to a chaotic streetscape. “We began to realize that the lack of transit, particularly in the eastern core, was the heart of the problem,” says Dr. Hook, “and we saw an opportunity with the Mayor’s plan and new investment in the area to propose a solution.” Mexico City’s famous traffic (it was ranked as the worst city for car commuters in the world by IBM’s Global Commuter Pain Survey in 2011), offered another opportunity.

The ITDP team noticed, while mapping the area, that the airport, which took an hour and half in a car to reach the center, was, in fact, only about three miles away. The team confirmed this by biking from the center to the airport in less than 30 minutes, even with a circuitous route. Despite the massive traffic flow to the airport, transit options were limited to an indirect metro line that served only one of the two airport terminals. They began to look at the project not just as an opportunity to move people more efficiently within the city center, but to provide a direct BRT corridor from the airport straight to the tourist attractions, hotels, and government offices of the Zócalo. ITDP promoted this as the best option to preserve and reinvigorate the Zócalo while improving mobility throughout Mexico City.

The Zócalo is one of the largest city squares in the world at nearly 58,000 square meters, and is the center of government for both the nation and the capital, as well as the central venue for national celebration and protest. Although the Zócalo has consistently remained an important political, commercial, and tourist center with more than two million visitors per day, it has seen a loss of population. Many people died in collapsed buildings during the dramatic earthquake in 1985, and the streetscape became increasingly chaotic as the center became overrun with street vendors during the 1990s and 2000s.

ITDP proposed developing a BRT extension of the Metrobus system through the historic center to help connect and improve the area. ITDP’s feasibility study indicated that the city could expect 50,000 riders per day on a new BRT line. Along with the parking reform program of ecoParq (see page 29), ITDP pitched the idea to Mayor Ebrard in a meeting organized by the Clinton Climate Initiative and the C40. The timing was fortuitous. Not only was the Mayor looking for a solution to help the city center, but the city had been considering a light rail option that was proving too expensive and difficult to implement. Both Armando Quintero, the City Minister of Transport, and Guillermo Calderon, the head of Metrobus, the city’s BRT company, were supportive of ITDP’s plan.

ITDP hired transport consultant Cetran to analyze and model the different scenarios that this corridor could provide, and coordinated the proposals with the City Ministry of Transport (SETRAVI) and Metrobus. Once the best route, demand and service were established, ITDP reached out to a Mexican architectural firm, 911, to create a rendering and draft design of the corridor.

Four years later, Metrobus Line 4 is a reality in Mexico City. After only a year of construction, Line 4 was inaugurated on April 1, 2012. This line
places Mexico City as the leader in Latin America in total bus corridor length at 95 km, edging out Bogota’s 84 kilometers. The corridor runs on two major north/south axes along Republica de Venezuela and Heroes de Nacozari in the north and Republica del Salvador in the south. Line 4 makes vital direct connections to Lines 1 and 3 of the existing BRT, the Buenavista commuter rail terminal, and both terminals of the Mexico City International Airport. The new line is carrying about 48,000 passengers in 54 12-meter low floor buses including seven hybrid diesel electric. This increases the capacity of Metrobus System to more than 700,000. Average peak hour speed on the corridor has more than doubled from five kilometers (km) to 12 km. As improvements are made, the line should reach its goal of a 30 minute trip from the city center to the airport.

In addition to the improvements to mobility, this project has helped to massively improve the streetscape and quality of life in the downtown area. Increasing pedestrian and cycling access to such an important and historic part of the city that had deteriorated for decades has contributed to the area’s rebirth. Today, streets that were chaotic and inaccessible are exclusive for pedestrians, cyclists and the BRT.

Downtown business owners, such as Alicia Esquivel, owner of an internet café on Ayuntamiento Street, have noticed the difference that Line 4 has made in their neighborhood. “The street is much cleaner and more orderly, and I think the system is very good,” says Esquivel, “the loud music from the microbuses are gone, the Metrobus drivers are kind and clean. My perception of the street is much more positive now. It looks better. It’s not full of parked cars so more people are walking on the street, and it’s made a big difference for mine and many other local businesses.”

Mexico City has proven that a world-class BRT can help revitalize a dense, central area while maintaining and respecting its cultural and historic heritage.
Cleveland’s Euclid Avenue used to be known as Millionaire’s Mile. It was lined with beautiful, historically preserved office buildings and home to the Euclid streetcar line, the once busiest streetcar line in the city, but was shut down in 1952. Although Cleveland’s downtown never commercially collapsed to the same extent as other rust belt cities, it was hard hit by the suburbanization that killed so many American downtowns in the ‘60s and ‘70s. Today, Cleveland’s Health Line bus rapid transit (BRT) corridor is one of the highest quality BRT corridors in the US. It is also the corridor that has had the most profound impact on land development, leveraging $5.1 billion in new real estate investment. Cleveland has achieved this by creating a high quality BRT corridor as part of a successful integration of the city’s transportation and urban development policy.

The Health Line, named for its route on Euclid Avenue from Cleveland’s central business district to several large institutions including Cleveland State University and St. Vincent’s Hospital, required zoning changes to re-orient development. The developments that did exist were car-oriented and turned their backs on the Euclid Avenue streetscape. The neighborhoods between the institutions and the central business district were afflicted with blight and abandonment during the 60s and 70s, leaving much of the land vacant and creating an opportunity for extensive in-fill development. This availability of land helped to spur new development along the corridor, and create a lively transit and bicycle-oriented mixed-use spine, along which a growing number of Cleveland’s residents choose to live and work car-free.

Many redevelopment efforts on Euclid Avenue pre-dated the BRT corridor. In the 1980s the residential population of the Euclid Corridor was only 3,000. By the late 1990s, it had already risen to about 6,000, and in 2011 it was up to 11,000 residents. The redevelopment authorities have been doing one or two projects each year since the mid-1980s, and the population increase is a testament to the success of the accumulation of these projects. Nightlife has begun returning to downtown, and about a third of the population reverse commutes from downtown to the hospitals and clinics, which is good news for profitability on the Health Line.

Before the Health Line, Euclid Avenue was already the highest demand bus route in the city, and the only transit
route that Cleveland felt had enough passengers to pass the Federal Transit Administration’s cost effectiveness appraisal for a New Starts grant, which was an important source of funding for the project. To prepare for anticipated increased demand, Cleveland also kept a downtown circulator trolleybus: a bus made to look like a trolley car, but runs in the mixed traffic lanes of Euclid Avenue. The BRT buses are all hybrid-electric articulated buses built by New Flyer, and were specially designed for both Cleveland and Eugene, Oregon’s BRT corridors.

The impact of BRT, or any form of mass transit on land development, depends on the quality of the transit system. The seven-mile long Health Line is a fully dedicated BRT corridor that runs through downtown Cleveland. In most parts of the corridor, station platforms are level with the bus floor for ease of boarding. Off-board fare collection, along with a team of inspectors, keeps the buses moving quickly and fare evasion to a minimum. The Health Line completes its run 12 minutes faster than the previous bus service. The buses have doors on the left-hand side of the bus, as there are four stations located along the central median in the downtown areas, which are shared by buses going in both directions. The system has reliable two-minute headways in the peak hour, five-minute headways off-peak, and operates all night.

Stations and buses are very attractive and have a unifying look and branding. The surface is paved with long lasting concrete from the downtown to University Circle, and then it is mill-and-fill asphalt with concrete pads at station stops. It does not have full traffic signal priority, but it has ‘preference’, meaning that the signals are programmed to the schedule of the buses. The system has a semi automated operational control system that tells the drivers if they are ahead or behind schedule. Because of all of these elements, it is one of the most complete BRT corridors in the US. BRT is particularly well suited for avoiding the sorts of bus delay that are typical on urban corridors, but not so typical on highways or along strip-mall type developments. As such, changes in the nature of land development along the Euclid Avenue corridor were also instrumental in ensuring that BRT along this corridor improved bus speeds.

The ridership maximum is about 420,000 trips per month, or about 14,000 trips per day on average. Unlike the rest of the bus system, the Health Line’s popularity continued to rise during the economic downturn of 2010 and 2011, as ridership on the Health Line increased by 67 percent over the last four years. About 13 percent of its new passengers came from the nearby rail line, and 16 percent from people who used to drive.

The city’s investments in the Euclid Avenue corridor were not restricted to the BRT-related infrastructure. They also buried power lines, put in fiber-optic telecommunications cables, rebuilt ancient sewer and water lines, and significantly improved the cycling and walking environment with street furniture, new shade trees, and other urban amenities. Even if it were not for the BRT system, these public investments gave confidence to investors that the city of Cleveland was dedicated to ensuring the commercial survival of the Euclid Avenue corridor. The area was also eligible for residential property tax abatement. All told, the Federal and State tax credits underwrote about 45 percent of the new developments’ costs in downtown Cleveland.

Prior to the BRT, the parking policies in downtown Cleveland were a good precursor to a transit-supportive environment. In many US cities, developers are required to provide a minimum number of parking spaces in proportion to the building size. This incentivizes

The Health Line’s median stations include off-board fare collection and safe access for pedestrians.

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driving, and it also places an undue burden on developers who would generally prefer to build parking in accordance with market demand. In Downtown Cleveland, however, there are no parking requirements. In addition, there was little on-street parking.

A vast array of municipal, state, and federal programs were all carefully targeted on the same corridor to ensure project success. University Circle Inc. (UCI), a community development corporation, has been instrumental in the increase in residential and commercial development. UCI and local institutions reworked the master plan for the area in 2000. It prioritizes maximizing density, mixed-use development, and pedestrian and cycling infrastructure.

UCI has been buying property along the corridor for decades with the help of local foundations, and is currently allowing institutions to use the land for off-street parking. Post-BRT, UCI launched a seven million dollar corridor revitalization initiative along Euclid Avenue, with the help of the Kent H. Smith Charitable Trust that upgraded pedestrian facilities, built a visitor center and funded streetscape enhancements such as lighting, benches, and flower beds. The area is also undergoing two billion dollars worth of construction and renovation projects, about 96 million of which is residential and commercial developments. The increase in housing has also prompted collaboration with a local foundation to create a mortgage assistance program to attract homeowners to the area.

Developments in the area have received New Markets Tax Credits, which provide tax credit incentives to investors for equity investments in certified community development entities, and can be sold to fund developments. Case Western Reserve University and University Circle Inc. also spearheaded a 100 million redevelopment of a retail district into an Arts and Retail District. Case Western Reserve University and University Circle Inc. also spearheaded a 100 million redevelopment of a retail district into an Arts and Retail District. The $53 million renovation of The Cleveland Museum of Art is also located on this site.

Even outside of new investments into the central business district, there has been $4 billion in new real estate development investments in the corridor completed, and another $200 million in the next two years is already underway. These investments resulted in the construction of 128,000 square feet of new space, of which 80 percent is already occupied. The universities also changed the orientation of some of their university buildings so that they would front on the corridor. They received a grant to modernize the Agora Theatre, and are going after TIGER grants from the USDOT. The universities also put in 400 units of new subsidized affordable housing. A program that offers a $5,000 to $15,000 grant and one month of free rent if you invest in housing along the corridor has led to the renovation of 3,500 units.

Euclid Avenue is demonstrating what cities like Cleveland can accomplish with a comprehensive approach to transit-oriented development. The new complete streets with bike lanes and BRT are appealing to the young new staff of these new businesses, which is in turn drawing more business and real estate development into the downtown without the accompanying traffic headaches. Bike use has already increased by 150 percent, property values along the Euclid Avenue corridor have doubled over the last six years, and commercial real estate prices are now on par with prime suburban properties. Euclid Avenue is, once again, the hottest market in the city.
8 Principles for Transport in Urban Life

By Luc Nadal

No building is an island. While a rising crop of green(er) buildings is making a visible mark on the skyline of major cities across the world, many a building with fancy low-emissions wall and windows, and advanced low-energy internal systems nonetheless fails to also green their access and transport connections. Ironically, the certified green automobile parking garage is a rising industry in some countries. Truly green buildings need to be located in places where walking, cycling, and riding public transport and other shared vehicles are the most evidently practical and enjoyable choices for urban trips.

The Principles for Transport in Urban Life infographic on pages 18-19 highlights 8 fundamental traits of such places. These simple principles should serve as a foundation for a transformation of the practice and regulation of urban design, planning, development, and management throughout the world. ITDP worked on identifying and detailing these principles with partners including Nelson/Nygaard, Gehl Architects, Peter Calthorpe Associates, the China Sustainable Cities Program, and with the support of the ClimateWorks Foundation.

ITDP has more in the works with a transit-oriented development (TOD) standard that builds and expands on the basic principles. The TOD Standard will lay out concrete objectives and simple-to-use metrics for assessing how well the principles are implemented. It is meant to complement the various urban development rating schemes that already exist in the US, the UK, and elsewhere, none of which focuses specifically on the integration of transportation and urban form, and uses metrics easily transferable to different national, regional and development contexts. A recognition scheme, with bronze, silver, and gold distinctions awarded to qualifying projects, will be based on the standard metrics.

Many of the best loved and most successful cities and neighborhoods in the world are illustrations of the Principles for Transport in Urban Life, which all came naturally in the pre-automobile era. ITDP calls for reapplying these principles creatively to the shaping of exciting, vibrant, practical, and sustainable contemporary urban development across the world.

Luc Nadal is Technical Director at ITDP Headquarters in New York. Luc is an architect and urbanist who has written extensively about the role and functions of urban public space.
Principles for Transport in Urban Life: Better Together

Successful sustainable cities in the twenty-first century will prioritize people by integrating transport and urban development. Making this happen means putting the Our Cities Ourselves principles into practice to create vibrant, low-carbon cities where people want to live and work.

The Our Cities Ourselves principles show how the future of transport in urban life lies in reinforcing the complementary nature of sustainable urban transport and urban development. In the face of rapid urbanization and climate change, the future of transport in urban life will depend not only on these principles, but how they work together.

**Compact**

In a compact city, activities are located closer to one another, requiring less time and energy to connect. When all the principles are applied collectively, a thriving compact city is created.

**Densify**

By building up instead of out, cities absorb urban growth in a more compact way. Density supports a lively mix of activities and better transport services, but also requires that the transport systems can handle the increase in people.

**Transit**

Public transit connects and integrates more distant parts of the city. Transit corridors are the natural places where densification should begin. High quality transit is critical to create a prosperous and equitable city that is easily accessible by all.

**Connect**

A city needs a tight network of streets and paths for pedestrians and cyclists as well as public transit. Creating highly permeable places allows for a variety of mobility options that make trips more direct.
Mix
A connected city becomes more animated when there is a mix of activities along the streets and paths. Different uses encourage shorter trips and more lively neighborhoods.

Cycle
Like mixed uses, cycling activates streets and provides people with an efficient and convenient way to travel for medium distances. Cycling increases a person’s access to a larger area, as well as increases the coverage of transit.

Shift
With the above principles in place, getting people out of their cars becomes easier but is not enough. Pricing and traffic reduction tools encourage people to shift away from cars.

Walk
When all the principles come together, the results are most keenly felt by the pedestrian. Vibrant, active streets where people feel safe are fundamental to the successful twenty-first century city.

For more information: www.itdp.org

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In June, the United Nations Conference on Sustainable Development, commonly known as Rio+20, saw a major victory for sustainable transport. Thanks to a strong effort and committed leadership by ITDP, the Asian Development Bank and the Partnership for Sustainable Low-Carbon Transport (SLOCAT), eight of the largest multi-lateral development banks (MDBs) pledged to redirect $175 billion USD to more sustainable transportation over the next ten years. These commitments represent a new direction for transport funding, and come after decades of pressure by ITDP for stronger commitments to sustainable transport from the MDBs and also represent a breakthrough for transportation within the broader global movement for sustainable development. They advance a broad alignment of governments, the private sector, and NGOs in scaling up sustainable transport. Now that these commitments are in place, though, what does it really mean for cities?

Michael Replogle, Managing Director of Policy for ITDP, laid out the impact in an interview with The New York Times. “Having banks that have focused principally on building massive new roads focusing more on public transit, safer walking and bicycling, pollution reduction and improved freight systems is a huge breakthrough.”

The real victory is that the banks are now willing to be held more accountable for the sustainability of their investments and the impacts they create on people’s lives and the environment. The Joint Statement produced by the eight banks defines sustainable transport as “transport that is accessible, affordable, efficient, financially sustainable, environment friendly, and safe.” This new direction for the $175 billion, indicative of the amount that the banks already expect to invest in the global transport sector over the next ten years, changes how decisions will be made in the types of transport in which money is invested. Previously, MDBs were reluctant to set binding sustainability goals or to have the impacts of their transport investments measured. The banks’ Joint Statement at Rio+20 changed that, pledging that these funds will now be directed to “help to develop more sustainable transport systems.” It also called for “reliable arrangements for measuring, monitoring and reporting results at country, regional and global level.”

The $175 billion commitment was considered not only the biggest achievement for the transport community, but also one the biggest success stories to come out of the conference. Over 60 transport organizations from around the world, lead by ITDP, were able to bolster transportation’s position in the political agreement and register over a dozen official volun-
In leading this initiative, ITDP activated and empowered a diverse global network of organizations and individuals who support sustainable transport and raised the profile of sustainable transport globally.

“These unprecedented commitments have the promise to save hundreds of thousands of lives by cleaning the air and making roads safer; cutting congestion in hundreds of cities; and reducing the contribution of transportation to harmful climate change,” said Joan Clos, former mayor of Barcelona and Executive Director of UN-HABITAT, “They will create more efficient passenger and freight transportation, spurring sustainable urban economic growth.”

In order to ensure this commitment translates to more sustainable transport, it will be essential for the NGO community to take full advantage of this transparency, and keep transport’s profile and momentum on the global development stage in order to set agreed-upon transport sector goals and ensure any future Sustainable Development Goals are transport-inclusive. It is also important for NGOs to steer the Secretary General’s Panel on Sustainable Transport, and to ensure transport is addressed in the new climate-negotiating track established at Durban.

In leading this initiative, ITDP activated and empowered a diverse global network of organizations and individuals who support sustainable transport and raised the profile of sustainable transport globally. The Asian Development Bank (ADB) was a vital partner for achieving the Rio+20 transport commitments. ADB has been breaking new ground in setting MDB investment strategies supportive of sustainable transport since the release of its 2010 Sustainable Transport Initiative. The ADB was the first of the MDBs to respond to ITDP’s vision of a Rio+20 commitment and worked tirelessly to coordinate with the other banks in order to make Rio+20 a success for sustainable transport.

End Fossil Fuel Subsidies

According to the International Energy Agency, 37 nations spend an average of $409 billion a year artificially lowering the price of fossil fuels. These massive subsidies boost oil and gas consumption and impede investment in more efficient, environmental and equitable transport models that would benefit those who need it most. Only eight percent of fossil fuel subsidies go to the poorest 20 percent of the population, and ending these would promote efficiency as well as equity.

For the past three years, the G-20 has been calling for the phase out of fossil fuel subsidies, but national political will has been lacking. A more politically feasible option would be to shift them to mass transit and targeted poverty alleviation programs. With fuel subsidy expenditures already rising to unsustainable levels, governments will soon have no choice but to make cuts. The only question is whether these cuts will be made in a way that gives people a viable alternative to the gas pump.
In Johannesburg, A Test of Transformation

By Colleen McCaul

Johannesburg, South Africa, a city where the dominant form of public transport on all major corridors is the minibus-taxi, is facing an ambitious test. As the nation continues to modernize in a post-apartheid era, the informal minibus taxi system needed to modernize as well. In 2006, city political leaders approved the proposed bus rapid transit system, Rea Vaya, as the choice for future mass transit investments. Discussions with taxi industry leaders with a view to their operating the new system began that same year, and there were some fundamental questions: Can you get individual, informal taxi owners to switch to running a very modern bus company? Would they be able to maintain the buses and keep the system running efficiently? Would they make the loan repayments for the bus financing raised from the Brazilian Export Credit Agency?

The stakes are high at many levels. When Piotrans, the taxi-owned BRT operating company, was launched, the political head of transport in Johannesburg and champion of the Rea Vaya project, Councillor Rehana Moosajee, told the Board that the city had high expectations, “You dare not fail, because if you do, people will say that economic transformation and the transformation of the public transport sector is not possible.”

It is notable that a strong platform for success was in place from the outset. The city focused on building a partnership on BRT implementation with taxi leaders. Supported by ITDP, taxi leaders went to visit BRT systems in South America and met operators who were previously also operating informally, such as Sí99 in Bogotá. In
2009, these general talks progressed to formal negotiations with the representatives of the taxi owners directly affected by the first line, known as Phase 1A. These were chaired and managed by some of the country’s most experienced mediators and facilitators, and were met with varying success. Although many taxi owners were willing to participate in its implementation, there have also been those who resisted. Participants were intimidated, even attacked, and the project faced scepticism from both supporters and opponents. Referring to Joburg’s discussions with the taxi operators, one speaker at the annual bus operators’ conference in February 2009 said that Johannesburg “has lost the plot.”

Yet, as the city’s executive mayor Amos Masondo said two years later, “It always seems impossible until it’s done.” The city introduced BRT services known as Rea Vaya on its Soweto-downtown corridor on 30 August 2009. In 2011, Masondo announced that, after a 14-month negotiation between the city and taxi owner representatives, 313 taxi owners were scrapping or selling the 585 taxis they operated on the Phase 1A routes, and becoming 100 per cent shareholders of the bus operating company that would be contracted to operate the services for 12 years. With the help of technical advisors of their choosing, paid for by the city, these owners had formed taxi operator investment companies (TOICs), one for each of the nine taxi associations to which the owners belonged. Owners were entitled to buy one share in a TOIC for each taxi they took off the Phase 1A routes and cancelling its operating licence. Each had to invest R54 000 per share held into the company equity, which is the amount of money government pays for the scrapping of old taxis.

The temporary company that had been set up by the city was sold to the nine TOICs, who designated 13 non-executive directors to the company’s board, appointed one of the taxi leaders in the negotiations, Sicelo Mabaso, as chairperson, and re-named it “Piotrans.” This name was given to reflect “the pioneering steps of the taxi operators who have decided to transform and grow into the fully-fledged public transport operator as part of the public transport transformation process in the city and South Africa”.

The city set up the new company to succeed in a myriad of ways. Piotrans in its interim phase had 17 months of operations under its belt, and staff was already in place, including a full complement of drivers drawn from the taxi industry and trained by Scania, while a three-year maintenance agreement was in place for the buses. A depot was in operation with a fuel-supply contract, and the city, on behalf of the company, had procured the 143 buses. Loan financing had been arranged, and while the company was responsible for repaying the loans to the Brazilian Export Credit Agency, the City of Johannesburg was ultimately liable. Further, the bus contract itself is performance-based, with a schedule of offences and penalties, which enables compliance and monitoring. The city sets the service schedule, and through its control room and GPS devices on
the buses and in the system, can monitor that services are operated as required at all times. The city also has access to the company’s monthly management accounts and the agendas, minutes and documentation for meetings of the board of directors and shareholders.

There was a six-month period during which handover from the management of the temporary company to the new board and management occurred. During this time, the city provided an in-depth orientation and capacity-building program for the new board of directors, as well as mentoring for the new management team. Penalties for non-performance were only introduced after an initial grace period.

The city also required the new company to present a management plan, and to sign a management contract with “a suitably experienced bus operating contractor and/or key management personnel”, meeting the city’s requirements.

Fanalca, the large Colombian industrial group, was announced in early 2010 by the taxi leadership as its choice of experienced bus operating contractor. Fanalca already has BRT operating companies running 5,000 buses in South America. It operates BRT as part of Transmilenio (Bogotá), Transantiago (Chile), Metrobus (Panamá), MIO (Cali), MetroSinú (Montería), and SITP (Bogotá), and subsequently established Fanalca South Africa as a local subsidiary.

Fanalca was understood from the outset to be both a management and an equity partner. The city included a clause in the bus contract to allow the shareholders (TOICs) to sell up to 24.9 percent of the shares to a suitably experienced BRT operator approved by the city, no sooner than a year after the signature date. The proceeds from selling the shares could only be used for the purpose of capital expenditure and/or working capital for the bus company. The nine TOICs and Fanalca entered into a “heads of agreement” outlining the management and operational support which Fanalca would provide to Piotrans, and that the discussions leading to Fanalca purchasing the allotted shares in the company and becoming a co-owner with the TOICs would take place a year from inception of operations.

Sicelo Mabaso, as chairman of the Piotrans board, said the decision to partner with Fanalca was done to ensure the success of the company. He said, “This is a totally new project, and we need to deliver a professional service. We looked locally and found no one, so we had to look at successful BRT systems.” Regarding the proposed sale of shares to Fanalca, he added: “We are looking for sustainability and we felt the best way of ensuring success was by providing them with an interest and stake in the company.”

An announcement by the new directors in February 2011 named Victor Cordoba of Fanalca South Africa as the inaugural CEO. Taxi leaders from the negotiations were placed in the roles of deputy CEO and corporate affairs director. The chief financial officer from the temporary company stayed on, as did the majority of incumbent staff, and roles such as human resources and company secretary were filled by South Africans. However, Fanalca supplied a significant number of full-time and part-time personnel to the operations. Fanalca estimated that at any one time, it had up to ten of its staff in Johannesburg working with Piotrans. This included its engineers in the minimum three positions in terms of the heads of agreement, namely the CEO, Technical Manager, and Operations Manager, supplemented with three other full time engineers in the roles of a second operations manager, deputy chief financial officer, and driver trainer. Piotrans only covered costs for the three full-time positions, and Fanalca did not charge any management fee or the costs of other personnel seconded to the operation, nor did they share in any profits.

Fifteen months after the takeover, Piotrans had improved on many aspects of the service compared to the performance of the temporary company. For example, by May 2012, levels of absenteeism, breakdowns, accidents, maintenance costs and dead KM (kilometres travelled with no passengers) were all significantly reduced. The number of buses washed per day doubled and 99.86 per cent of scheduled KM were being operated.

In February 2012, a year from the launch of Piotrans, shares of the com-
pany were to be made available to Fanalca. However, dissension began to develop within the Piotrans board. Various TOIC directors were reluctant to sell shares to Fanalca, preferring that ownership of Piotrans remain with the original shareholders. Others were in favour of honouring the agreement, and of negotiating the sale of the allotted 24.9 percent of shareholding to Fanalca. While the board did appoint a negotiation team, and agreed to follow a process with timeframes, this did not happen. In Fanalca’s perception, there were continuous failures by the board to move forward with this process, or to make progress with producing the proposed transaction document. By mid-May, this had created serious doubt for Fanalca about whether its commitment was reciprocated, and whether a long-term relationship with the TOICs was feasible any more. Fanalca took the view that it had no interest or intention of forcing its participation in Piotrans if the TOICs did not wish to pursue a partnership. In their view, this would create instability, which would be bad for the company, the system and the passengers.

On June 7, 2012, Fanalca formally withdrew from any further participation in Piotrans, and terminated its staff’s services from June 13th. To avoid a negative impact on passengers, Fanalca developed a transition plan and made its technical team available for eight further weeks to hand over the full operation of Piotrans to the TOICS and local staff.

As of this writing, restructuring is underway. A new key position of Chief Operating Officer has been created to oversee the operations and technical functions, and alleviating the concerns of many is the news that this will be filled by Javier Cajiao, the former Technical Manager supplied by Fanalca. His former position has been advertised, while Eric Motshwane, the former corporate affairs director and key taxi leader in the negotiations, has taken the Operations Manager position. He was trained by Fanalca during the eight-week handover period to assume this role. M K Mohlala, the chairperson of the Board, who will act as CEO, is confident that service levels will not be compromised. He asserts that “the skills are replaceable” and adds that a great deal of skills transfer to local staff, reinforced in the two-month handover period, has already taken place, and that the plan always was for Fanalca to hand over to local management and staff. He says that Fanalca’s technical and operational expertise, the people they sent, and their attention to detail had “overjoyed” him, and that they had transferred a lot of skills to the people they worked with closely.

There is reason to be optimistic, but many challenges remain. Key indicators will need to be measured and monitored over the next year so as to address any negative effect of these events on the company and the service, and to sustain the success achieved to date by this ambitious project. Among the difficult gaps to fill may be the plan to replace the outsourced maintenance contract with full in-house maintenance, which Fanalca had projected would cut overall maintenance costs by 26 percent. Another is the crew scheduling function where the company will need to purchase software to replace that previously supplied by Fanalca and train staff to use it. The city’s Rea Vaya staff will assist Piotrans in this transition. Labour relations are another area of difficulty, evidenced in a protracted strike of two months in August and September 2011 by the Piotrans drivers, all of whom were former taxi drivers.

In the meantime, Rea Vaya remains popular and ticket sales continue to improve, reaching 45,000 on an average weekday in August 2012. In the first customer survey, large proportions of passengers cited travel time savings, the comfort of the service and its reasonable price as the attributes of Rea Vaya they particularly value. The automatic fare collection system being introduced from November to replace the current paper ticket system will also enhance the customer experience.
China Shows Leadership in Bike Share and Greenways

By Bram van Ooijen and Shanshan Li

China’s 1.4 billion people are streaming into cities. At the end of 2011, China’s urban population passed the 50 percent mark, with nearly 700 million urbanites, 21 million of them having migrated to cities in the last year alone. This massive and rapid urbanization has forced city leaders to look for solutions to increasing traffic congestion and air pollution, and to improve overall mobility. Fortunately, mayors and planners across China have embraced bike sharing and greenways, which are improving mobility and quality of life for all.

Bike sharing systems offer a human-powered, no-emission option to complement transit, serve the demand for short trips, and solve the ‘last mile’ issue of public transport. Five years ago, when ITDP first began work on bike sharing in China, there were no systems in place. Now, over 60 cities in China have bike sharing systems. In the past years alone, 13 Chinese cities opened new bike sharing systems, adding over 30,000 bicycles to the national bike sharing fleet. As of
China Shows Leadership in Bike Share and Greenways
By Bram van Ooijen and Shanshan Li

October, there were over 250,000 bike sharing bicycles nationwide, making China the world leader in bike sharing.

Since the first bike sharing system opened four years ago in the city of Hangzhou, Chinese cities have implemented different types of systems. Some cities have chosen a low-tech and low-quality system, causing some operational problems, but most cities have opted for high-tech, third-generation systems that are proving themselves to be worth the cost and effort. Features such as automated docks, operated with smart cards and through sophisticated, domestically developed technology, have encouraged more users and kept more cars off the streets. Guangzhou’s bike sharing system is integrated with the city’s BRT, with stations located at BRT stations and in residential areas within a couple kilometers from the BRT-corridor that moves 850,000 people per day. More than two thirds of Guangzhou’s bike sharing trips replaced trips that were previously made by a motorized mode, saving an estimated 636 tonnes of CO₂ per year. Hangzhou’s bike sharing system, with 80,000 bikes on which 1,123,200 kilometers are traveled every day, is having an even greater CO₂ reduction.

China’s highest quality bike sharing system was developed in Zhuzhou in 2011. The system, with 502 stations and 10,000 bikes, is mostly aimed at reducing motorcycle trips, and stations are deployed citywide at bus stops, commercial centers, offices and residential areas. The third-generation system is fully automated and includes CCTV cameras, resulting in much lower theft. Zhuzhou’s sturdy bikes have seats with adjustable height, three gears and direct drive pedals, as opposed to chains, resulting in a smoother ride and lower maintenance costs. As in many other cities, after the opening of Zhuzhou’s bike sharing system, the city government improved bike facilities and expanded the bike lane network to support cycling. Due to the success of its system, Zhuzhou plans to expand the current system to 20,000 bikes in the coming year. Zhuzhou’s bike sharing company is also expanding to other Chinese cities with Shenzhen, in Guangdong province, recently starting operation of a 5,000-bike system, supplied by the company.

Simultaneously, Chinese cities are implementing greenways on a large scale, and promoting them as the backbone of walking and cycling networks, as well as a public space for families and friends to walk, play, exercise, rest and have fun. These linear parks along roads and rivers include safe and convenient bike lanes, making them a great alternative to the large, noisy and polluted streets.

Greenways, which first appeared in the southern city of Guangzhou in 2010, are rapidly spreading across the country. In the past two years, more than 6,000 kilometers of greenways have opened, and another 14,000 are planned. By 2015, the southern province Mayors and planners across China have embraced bike sharing and greenways, which are improving mobility and quality of life for all.
of Guangdong will have 8,770 kilometers built, covering every city in the province. Hebei and Fujian provinces are also planning extensive greenway networks, and many more cities are continuously announcing implementation and extensions of greenways. The beautifully landscaped greenways of Guangdong attracted 25 million users in its first year of operation and have improved quality of life.

The move toward increased bike sharing and greenways is also having a positive effect on local economies. In Guangzhou, land values near the most successful greenways have risen by 30 percent, compared to districts’ averages. Studies have shown that economies around greenways are 54 percent stronger than areas without greenways. Greenways attract more people, stimulating investment and services like restaurants, hotels and bike rentals. The success of demonstration projects in Hangzhou and Guangzhou has been followed by a large expansion of bike sharing systems and greenways across Chinese cities, which have seen a range of positive environmental and economic development impacts.

Progress has been encouraging, yet many challenges still remain. Bike sharing systems need expansion to cover larger areas of the city, attracting more residents to switch from motorized transport to cycling. Many greenways have connectivity issues around intersections, road junctions, and river crossings, resulting in a fractured network. This hampers the use of greenways for transportation, especially for cyclists. Safe crossings, with mid-road refuge islands, continuous bike lanes and green bridges are needed to ensure continuity of greenways, which is particularly important for their use as a transit corridor. ITDP continues assisting government bureaus and local planning and design institutes in a dozen Chinese cities with improving and expanding bike sharing systems and greenways. While progress has been mixed, there is no denying that China has emerged as a world leader in bike share and greenway development, and city leaders and planners are showing an admirable commitment in dealing with their cities’ mobility challenges with more sustainable non-motorized transportation solutions.
Taming Mexico City’s Parking Frenzy

by Michael Kodransky

Mexico City has set a precedent for better street management in Latin America. With support from ITDP, the city launched the most ambitious parking program in the region, ecoParq, as part of Plan Verde, the city’s long term plan for a cleaner, greener future. EcoParq has brought order to the streets with installation of multi-space meters to accept payment for parking coupled with an innovative enforcement protocol. The customer-oriented, environmental system introduces logical parking pricing and management practices to what was a network of chaotic and often dangerous streets.

In Latin America, the most prevalent method of on-street parking management is designating areas as “blue zones,” where paper slips and valet attendants handle fee collection. In this formalized system, a concession is granted by the city to a private operator. This model has high potential for fraud or spillage of revenue since there is weak accountability and strong potential to manipulate the system. For example, an attendant and driver may negotiate a discount below the official fee while leaving no paper trail of the transaction. This is possible as supervision happens only occasionally and the parking occupancy rate is only loosely monitored.

Before ecoParq, on-street parking in Mexico City was either free or informally controlled by franeleros, independent valets who manage the parking but also bring an element of criminality to the operations. The franeleros might earn between 10,000 to 40,000 Mexican pesos ($770 to $3,078 USD) a month, making it a lucrative business venture. This type of phenomena exists across Latin America. In Buenos Aires, they are known as trapitos and in Rio de Janeiro, as flanelinhas. Their name alludes to the supposed window cleaning service they provide to justify fee collection.

A few cities in Latin America have emerged as best practices in terms of recouping parking revenues effectively. Some cities like Bogotá and Saõ Paulo experimented with mobile-phone payment technology to streamline fee collection digitally, going beyond single-space or even multi-space meters, but these pilots struggled with problems in monitoring and management. In Mexico City, enforcement is handled by a pair that includes someone from the traffic police and an employee of ecoParq, a model for how to potentially avoid corruption.

EcoParq’s arrival proclaims a new era for Mexico City, and a best practice for parking reform in Latin America. The system has been in operation since January in the neighborhood of Polanco, and since July in Las Lomas. As of this writing, the city had 486 multi-space meters overseeing around 6,000 regulated parking spaces. Mexico City dedicates resources to

New multi-space parking meters improve accountability and the customer experience in Mexico City.

Michael Kodransky is a program manager for ITDP in New York, focused on parking and land use reform.
street management in the way of an enforcement and oversight protocol. The Public Space Authority, a department within the Ministry of Urban Development and Housing, championed the creation of the new system with the objectives of improving traffic congestion, mobility and public space recovery. Thirty percent of the revenue is invested into neighborhood improvements, such as better street lighting, which has helped win support from local residents.

EcoParq’s success can be measured by its potential for self-replication.

If one neighborhood enforces parking regulations, drivers search for parking in nearby areas where no charge is required, increasing the street chaos in those neighborhoods and offering a stark contrast with the more regulated area. When ecoParq was piloted in Polanco, neighborhoods beyond the pilot zone almost instantly began vying for the system to be extended.

When payment, enforcement and reinvestment of revenue from parking management are handled in a transparent and systematic way, all stakeholders can win. Not since Enrique Peñalosa took on illegally parked cars in Bogotá in 1999 has a Latin American city made such a proactive effort to create more space for pedestrians, bicyclists and transit users by bringing order to the street. EcoParq demonstrates how such initiatives can work in the Latin American context and serves as a guiding example to other cities considering a similar program.
Peter Park on Zoning Reform

Interview by Michael Kodransky

“There’s a relationship, in my view, between transportation and zoning policies that have increased travel distances, which is anti-urban.”

Peter J. Park led comprehensive zoning code updates in Milwaukee and Denver while he served as Planning Director of those cities and has implemented form-based codes at various urban scales. He was the 2012 Lincoln Loeb Fellow at the Harvard Graduate of Design where he researched opportunities for removing elevated highways in cities and citywide applications of Form-based codes. He teaches urban planning and design at the University of Colorado-Denver and Harvard Graduate School of Design. Peter is currently assisting in the comprehensive zoning code update for Los Angeles, California.

Michael Kodransky: How did you get involved in zoning reform?

Peter Park: While I was City Planning Director of Milwaukee, the city needed a new zoning code, and people complained about the permit process. Not just developers, but businesses and homeowners had issues with the zoning code. I think of that as a symptom, not the problem in itself. I think the bigger problem is whether a clear vision exists for the city. If you don’t have the vision, it doesn’t matter what your regulations might be.

MK: What is the problem then if it is manifesting in the permitting process?

PP: It’s a lack of planning in the first place. A city needs to have a vision; otherwise the codes will always be confusing, negotiated and transactional. In the case of Milwaukee, the other piece was a desire on the part of the city to accelerate economic investments, create higher quality developments, and increase predictability and certainty for developers and investors. That’s the right reason to create zoning laws in the first place. The first zoning laws were not about any of those things. They were about stopping things that were undesirable rather than describing things that are desired. Most of the time we think about laws in terms of limits, like you can’t go faster than 30 miles per hour. It’s all about a system of what you can’t do. Form-based codes describe what you can do. It’s a paradigm shift.

MK: What are the advantages of form-based codes versus use-based codes?

PP: Form-based codes have several advantages. They provide a more direct linkage between the aspirations of a plan, the image and the character of desired places, to the outcomes, in that the regulations use graphics. One doesn’t need to be an expert to see the relationship between the rowhouse form standards and the intention of creating a rowhouse-lined urban street or square. So there is a more direct association in visualizing the plan. Also, the code is just easier to use and understand. You can convey the regulatory intentions in graphic standards more quickly than having to write them out. Take Legos as an example. My son wanted a 10,000-piece Millennium Falcon from Star Wars. It’s got a little pamphlet that shows how to put together these ten thousand pieces, but there are no words, just graphics. Imagine if you were trying to explain how to put together these ten thousand Lego pieces and you used only words. The graphic technique in a form-based code is superior. It’s able to communicate understandably to anyone whether you are a design professional or not.

MK: Do you feel that form-based codes are too prescriptive? My understanding of use-based codes is that there is a lot of variation on what can happen in terms of the building form. Are you defining things to look a certain way that negates the possibility of variation?

PP: Not at all. Again, it links back to the plan and vision for your city. Being too prescriptive is often a concern of designers, that it limits their innovations and creativity. One of the criticisms I have of FAR (floor area ratio)
What are Form Based Codes?

Form-based codes offer an alternative to conventional zoning foster by using physical form (rather than separation of uses) as the organizing principle for the code. They are regulations as opposed to guidelines, adopted into city or county law. Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in form-based codes are presented in both words and clearly drawn diagrams and other visuals. They are keyed to a regulating plan that designates the appropriate form and scale (and therefore, character) of development, rather than only distinctions in land-use types.

Form-based codes commonly include:

- Regulating Plan: A plan of the regulated area designating locations where different standards apply, based on intentions regarding the physical character of the area.
- Public Space Standards: Specifications for the elements within the public realm such as sidewalks, travel lanes, and on-street parking.
- Building Form Standards: Regulations controlling the configuration, features, and functions of buildings that define and shape the public realm.

Source: Form-Based Codes Institute (FBCI)

used in typical zoning codes or the basic dimensional standards in typical zoning codes is that they’re generally kind of formless.

We have plenty of examples of really poorly designed buildings. It wasn’t the code that made them poor, it’s the work of poor designers. If form matters to you, the shaping of the public realm, one of the fundamental reasons of why you would use form-based codes is that you have an urban design perspective about making places and shaping public corridors, the streets, and public rooms, urban squares. Without this, you don’t know what you’re going to get. Someone might have a building set back fifty feet from the street with a parking lot in front; somebody else might put the building right at the street with the parking lot in the back or to the side. You might get high variation. If you follow urban principles of places that are walkable, that are engaging, that are vital, I think form-based codes help you get the urban design right. But again, the question is do you have that plan? That doesn’t mean a use-base code can’t get you there, but I think form-based is a more direct way of clarifying the intentions of the city’s vision.

MK: With use-based codes, when things aren’t right with the code, there is a way to intervene by applying overlay districts. Is there ever a need for this in form-based codes?

PP: Not in the same way. You end up doing overlays because your base zoning doesn’t accomplish what you want to happen. In the case of Denver, the 1950’s zoning code was not adequate for the intentions of what people wanted to see. Rather than fixing the zoning code, Denver took on an incremental approach—coming up with different design overlays and negotiating zonings in planned unit developments (PUDs). Some people might call it a legalized form of spot zoning. To me, it’s fundamentally an issue of whether to administer the rules and laws on a reactive, transactional, one-project-at-a-time basis, which is where Denver had gotten. Or do you say, hey let’s stop this madness and commit to a new operating system? That is what I think going from use-based to form-based is about, really changing the operating system.

You still can get bad design out of form-based codes, but one of the advantages is that form-based sets minimum standards for how you shape the public realm. Conventional zoning today has anti-urban underpinnings in that it suggests that separating uses and buildings will result in a better environment, a better outcome. Those approaches of separating uses and buildings came in the early evolution of zoning to solve the problems of overcrowding and speculation in times when residential building and housing codes didn’t really exist. The foundation of zoning was about trying to separate residential from heavy industrial uses. In Denver and Milwaukee, with form-based codes, we legalized the city again.

MK: What about form-based codes from the developer perspective?

PP: What developers want most are consistency, predictability and fairness. They want to know that everyone has to follow the same rules, no matter who you hire as your attorney and lobbyist. In Denver when we rezoned the whole city to be form based, it helped developers. There was a site where a developer went through three years of
negotiations and created a whole zoning package that was very expensive to accomplish. They spent a lot of money getting the rezoning from industrial to a transit-oriented development, which is what the city wanted in the first place. But to achieve that, the developer had to go through years of negotiations with neighborhoods, politicians and city departments. When we rezoned the whole city, we developed a plan in advance with the neighborhood, property owners and the developers. So, for me, the process of connecting the code to the plan and getting government to act in proactive ways is what developers want.

MK: If zoning now is a very transactional way of doing business and a lot of zoning is about deal-making, how do you change that mindset?

PP: It’s a political and a leadership question. The dysfunction of government is something that a lot of people thrive on: attorneys, lobbyists, government employees. So we have a system that is a labor intensive process, and you need to hire people to be involved in the negotiation process. That is kind of the norm. Most cities talk about their zoning code and wish it was better, but they don’t do anything about it because there is not enough political will. In Milwaukee, [former] Mayor Norquist was interested in accelerating economic investment in the city, creating higher quality development that aligned with the community vision, and creating a more predictable environment and greater certainty for developers and investors over time. If you have that long view about your city, then you would actually create laws that make it easier to build great development faster, right? But the reality of politics is that zoning negotiations make people relevant. It creates the need and opportunities for a politician to be relevant in their community, in their constituency. It’s the culture of that place. People complain about the zoning code, but they’ll never do anything about it because it’s the system that they know and they don’t see any other way to deal with it.

MK: You’ve been to India. What do you think is the applicability of form based codes in India? Often, and especially where we’ve been working in Ahmedabad, the FAR is consistently low across the entire city.

PP: When FAR, a number, is applied uniformly like peanut butter spread across a piece of toast, then there’s no vision. It’s just an accounting system. The important piece is not so much the zoning. It’s the prioritization for development across the city, the vision, and what kind of development is desired around transit. For example, if the government wants to prioritize investment in particular areas and channel new development around transit, one way to do that is to increase the development potential.

Denver did Blueprint Denver, this great plan integrating land use and transportation. The city identified places of opportunity and places of stability. Areas of stability were primarily the established and mature neighborhoods. A lot of the neighborhoods were fighting development. At the same time, there were all these commercial corridors that had seen disinvestment and underutilized industrial areas. We had transit corridors with underutilized land where the stations would be. The basic idea was to get the right zoning regulations in areas of stability to help protect the character of existing neighborhood and places of opportunity was where growth should happen in the future. Blueprint Denver prioritizes growth around areas of change like around new transit, revitalizes older commercial corridors and helps

What is FAR?

Floor area ratio (FAR) is the ratio of a building's total floor area to the size of the parcel of land upon which it is built. Floor area ratios are used as a measure of the intensity of the site being developed. The ratio is generated by dividing the building area by the parcel area, being sure to use the same units. For example, a FAR of 2.0 would indicate that the total floor area of a building is two times the gross area of the lot on which it is constructed, as would be found in a multiple-story building. By combining the horizontal and vertical limits into a single figure, some flexibility is permitted in building design, while achieving a hard limit on at least one measure of overall size.
redevelop underutilized industrial uses. The problem was that the old zoning code from the 50s didn’t do anything to prioritize development to the areas of change. Developers went to the areas of change identified in the plan and had to pay for changing the zoning. It’s kind of like inviting everyone to a party and asking them if they bought all of their stuff for it. Did you bring something to drink? Something to eat? Did you bring a chair to sit on? Did you bring some music to listen to? It was this weird thing where the city was saying one thing in its plan but the zoning was not supportive.

**MK:** What do you think is the future of zoning and codes?

**PP:** I think form-based approaches are basically going to become standard practice, but I think it will take a long time. There are going to be form-based codes prepared by people who don’t use them properly. Or they introduce a form-based code in lieu of doing a plan, and then it won’t work and it will give form-based codes a bad name. A code, whether form-based or not, has to line up with your intentions and your vision. I’ve observed a lot of zoning codes just copied from other cities and communities. Then a place is stuck with zoning codes that aren’t the right fit. For example, a lot of downtowns have FAR bonuses. So you get higher FAR if you build a public space, or whatever it is, and that’s what New York City did. But, a city like Milwaukee doesn’t need to have FAR bonuses.

Many American downtowns are over-zoned. They aspire to be Manhattan or like Chicago but they don’t have the market strength, and that actually slows development. More and more cities will see the advantage of form-based approaches as they get better. Form-based approaches are often seen as applicable only in greenfield sites. It’s not that they are only applicable there, but it makes sense if you’re going to start from scratch. Examples of cities that have used form-based codes in built areas are still rare. That’s why in Denver we describe it as a context-based approach. The patterns are very different in the gridded, alley-fed urban neighborhoods in Denver, with 25 foot wide lots from the suburban parts with no sidewalks and alleys with much bigger lots. It’s a bit more of a challenge to account for the existing pattern of a city. One of the advantages of form-based codes is it goes beyond the one-size-fits-all of traditional zoning and is actually tailored to the specific character of different neighborhoods. Cities and urban places are about proximity.

Cities are about access and exchange. That’s what makes cities. Cities should be about shortening travel distances, that’s how you make better access. You shorten the distances between places and their economic, cultural, and social exchange. Traditional zoning separates uses and actually increases the distances between places. There’s a relationship, in my view, between transportation and zoning policies that have increased distances, which is anti-urban. So both transportation policy and zoning policy are culpable in creating anti-urban places, and we need to pull them together to create better cities.
Ahmedabad, the fifth largest city in India with over six million people, has the all-too-common problem of pedestrians and cyclists competing for street space with heavy traffic. Since April 2012, three of the city’s busiest streets have been experiencing something unique to Gujarat’s commercial capital: Car-free Sunday Streets.

Large crowds of Amdavadis (Ahmedabad residents) flock to the event every week. Keyur Shah, who was out with his family enjoying the car-free C.G. Road one recent Sunday, observed that “One can leisurely walk and enjoy the evening with family with no fear of traffic.” Ahmedabad Traffic Police, in collaboration with the Ahmedabad Municipal Corporation (AMC), declared three roads to be vehicle-free zones for one evening each week. Every Sunday from 4 PM to 11 PM year-round, some of the busiest streets in the city, choked with vehicles on regular days, become a walking and cycling paradise and a playground for children and families.

Car-free Sunday Streets are part of a larger plan to improve mobility in the city. “We are introducing a lot of no-vehicle zones on particular days and we will see how it helps the traffic situation, movement of people, and the environment,” says G. Mohapatra, Municipal Commissioner of Ahmedabad, adding: “We will encourage more pedestrian movements and safe facilities for cycling as we go forward.”

People are encouraged to reach the Car-free Sunday Streets by foot, bicycle, or public transport. Options include Janmarg, Ahmedabad’s BRT system, which won the Sustainable Transport Award in 2010. The Traffic Police barricade the designated stretches and also guide those who do arrive by car and motorbike to detour routes and to available parking areas.

Car-free Sunday Streets came out of a previously successful ‘Car-free day’, a one-day only event that garnered strong support from various citizen groups and local media, and was initiated by an Ahmedabad-based non-governmental organization, Aproch, with support from ITDP. The success of these events encouraged municipal authorities to dedicate a day free of vehicles at busiest locations in the city on a regular basis. This initiative of has garnered a lot of interest among other cities in India, and many are encouraged to follow the example set by Ahmedabad.
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