

## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Environmental & health impacts	Global warming	Bogota	Colombia	South America
<b><i>Title</i></b>				<b><i>Year</i></b>
<b>Dedicated bicycle facilities in Bogota: major modal shift and GHG emission reductions achieved</b>				2000

### ***Source***

ITDP

### ***Summary***

Estimated Greenhouse Gas Emission Impacts of Bogota's BRT, TDM, and NMT Measures

The City of Bogota implemented BRT, TDM, and NMT improvements. At the time for which data was available, Bogota had only opened two lines of a planned 22 corridor BRT system. It had also build 200km of a planned 300km of bike lanes. They also expanded numerous sidewalks, added 1100 new parks, shaded promenades, and a 17 kilometer pedestrian zone, the longest in the world. They also implemented a number of TDM measures. Cars with license plates ending with one of four numbers are not allowed to operate within Bogota during the morning and evening peak, restricting access to 38% of the private vehicle fleet. Parking fees were increased by 100%, gasoline taxes were increased 20%, and bollards preventing people from parking illegally on the sidewalk were constructed. All these measures were promoted by a full car free day, car free Sundays, and other promotional efforts.

The effect of these measures on modal split over a 4 year period has already been impressive. The percentage of trips made by private cars and taxis dropped from 19.7% to 17.5%. Public transit passenger trips rose from 67% to 68% of total trips. Bike trips increased from 0.5% of trips to 4% of trips, a remarkable increase in four years. In 2001, the combined BRT, TDM, and NMT measures resulted in a reduction of CO2 emissions by 318 metric tons per day from 1997 levels in absolute terms. Roughly 90% of this resulted in the modal shift from private car and taxi to bus and bicycle, and 10% from efficiency gains within the public transit system. If the CO2 emission benefit is measured against the JICA - projected modal split for 2001, the benefits of the combined measures per day is 694 metric tons of CO2. The projected benefits per day of the change in modal split will rise to 5688 metric tons per day by 2015 if the projected impacts of the current plans are realized.

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Governance	Financing urban transport	London	United Kingdom	Western Europe
<b><i>Title</i></b>				<b><i>Year</i></b>
<b>Congestion charging</b>				2003

### ***Source***

Dave Wetzel, Vice Chair, Transport for London (on Sustran-discuss)

### ***Summary***

Central London had historically suffered from one of the worst levels of traffic congestion in the United Kingdom. Average traffic speeds were less than 10 miles per hour throughout much of the working day. This congestion was damaging London's economy as people and goods spend unnecessary time in traffic rather than in productive activities. This congestion worsened the environment of London and made conditions unpleasant for other road users, in particular for walkers and cyclists. Something drastic needed to be done.

As new roads generate more traffic and in any case it is completely impractical to build new roads in such a densely developed area as London, a novel solution to rectifying this problem was required. As part of his 2000 election campaign the Mayor put forward his proposals for the central London congestion charge.

The scheme relies on people purchasing the charge, which can be obtained from shops and petrol stations, over the phone, via the web, 100 pay stations in car parks or by mobile phone text messaging. We also provide a fleet scheme used by 11,000 fleet vehicles per day. Their registration number is entered onto a database for that day. The scheme is enforced by cameras, which record the vehicle registration mark of all vehicles entering the zone. These are checked against the database of those that have paid, and if the registration mark is not included the owner of that vehicle will receive a fine. The technological issues in providing an efficient, reliable and integrated payment, monitoring and enforcement system were immense. However, it was essential for this to work well, otherwise it could jeopardise the scheme itself, and given the world-wide scrutiny of this initiative, could lead other towns and cities deciding not to take forward similar schemes for their areas.

The scheme has been an enormous success. No other transport scheme has had such a positive impact on the traffic of a city. Detailed monitoring of its effects has been undertaken, with the key impacts being:

- \* An immediate 30% reduction in congestion within the charging zone, which has been sustained since
- \* An 18% reduction in traffic entering the zone, with the number of cars down by a third
- \* An encouragement of other modes of travel - both cycling and travel by bus is up by 20%
- \* A 60% reduction in delays to buses due to traffic impacts and a 30% improvement in overall bus reliability
- \* A 12% reduction in emissions of oxides of nitrogen (NOx) and fine particles (PM10)
- \* A reduction in road accidents (although too early to quantify)
- \* No detrimental traffic impact on the boundary road or surrounding areas
- \* On-street surveys show that people perceive the charge to have improved the environmental quality of the area.

The lessons learnt for the successful introduction of Congestion Charging were:

- \* The political commitment from Ken Livingstone, the Mayor was essential.
- \* Consultation was genuine with a readiness to amend the scheme in the light of reasonable representations.
- \* Public transport, especially buses (as we did not control the trains), was greatly improved.
- \* Traffic management was utilised to ensure the inner ring road around the zone ran freely.
- \* Residential parking restrictions were introduced where it was thought motorists might park just outside the zone.
- \* Extensive public information using most media (including local radio and TV) to inform motorists of the practicalities for how to pay the charge and also to keep the public informed on progress. (We did not want the communication channels swamped on the first day with motorists asking basic questions).
- \* First class project management.

A key test of the scheme's success is the degree to which the public support it. Ahead of the introduction of the charge there was a massive and sustained media campaign against the charge, although the balance of public opinion remained fairly even, with around 40% for and 40% against the charge. After 6 months of its operation almost 60% were in favour of the scheme compared with around 25% against. Probably the best test is that on 4 June 2004 Ken Livingstone was re-elected Mayor of London for another 4 years with more votes than previously and a margin of 11% above his main rival who threatened to abolish the Congestion Charge.

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Mobility management	Land use planning	Utrecht	Netherlands, The	Western Europe
<b><i>Title</i></b>				<b><i>Year</i></b>
<b>ABC location policy in the Netherlands</b>				1993

### ***Source***

Synthesis from T&E publications: Greening Urban Transport-Land use planning

<http://www.epe.be/workbooks/tcui/example12.html>

### ***Summary***

The Netherlands, with its 15 million inhabitants has the highest population density in Europe (410 inhabitants per square kilometre). Due to the high concentration of people, of activities and transport in the Netherlands, national planning authorities have developed ingenious land-use strategies and planning instruments. National authorities set general framework for planning through guidance and national targets. In such a context, the ABC policy is often mentioned as a tool to set up a sustainable development national policy. It integrates land-use and transport.

The general idea is to locate 'the right business in the right place'. The ABC location policy refers to a land use policy aimed at reducing avoidable automobile mobility and ensuring access to economic activity centers. There are three different areas:

1. locations easily accessible to local, regional and national public transport (= areas around public transport junction). Commuting by car should be under 10-20%.
2. locations easily accessible both by local and regional public transport and car (= areas where high standard public transport routes cross ring roads). Commuting by car should be under 35%.
3. locations easily accessible by car (= areas along the highways).

Businesses and services are given a mobility profile according to the number of employees and visitors, their dependency on car traffic and freight traffic. Shops are preferably located in A-areas, never in C-areas. Offices are located in A- and B-areas, while C-areas should only be used for transport activities or land intensive activities. The ABC system integrates a series of standards (density of employee per m<sup>2</sup>, parking places per employees). For instance, concerning parking standards: in A-localities the maximum number is 10 parking spaces per 100 employees and in B-localities 20 per 100 employees in the four largest cities; in other urban areas, the norm is 20 and 40 respectively.

Example of Utrecht: Utrecht has decided to apply the ABC system to the letter. There is a concentration of major commercial and office developments around the Central Station, which also form the key focus for further development of the city's transit routes. The general idea is to develop commercial and industrial areas integrated with transport access conditions. This applies to future commercial development, and is being incorporated into the local land-use plans of all Dutch municipalities.

The national government cannot directly implement the system. Land-use planning is a local responsibility, even if land-use plans have to be approved by the government. This is why cities with more than 100,000 inhabitants are encouraged to make action plans for their location policy, parking policy, traffic management. When the plan is prepared, the national government can fund current projects (ex.: rebuilding of the area around the central station in Amsterdam and The Hague). In addition, national authorities use economic incentives to promote such plans: local and regional authorities could be forced to implement them in order to receive national funding.

A sign of success is the support of the business sector to half of the Dutch provinces which, by 1993, had integrated the ABC-principles in their plans: office buildings along highway have lost popularity and station locations are considered as sites of future value. To conclude, the ABC system is a strict spatial strategy for a good localisation of different activities, with the objective to increase the quality of life.

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Mobility management	Traffic management	Guangzhou	China	East Asia

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>'Post traffic calming' measures in Guangzhou</b>	2002

### ***Source***

Karl Fjellstrom, ITDP

### ***Summary***

The Dongshan District government in Guangzhou has implemented a form of 'post traffic calming' in which the street is paved not with asphalt but with pedestrian-oriented tiles. There is no sidewalk; the street is raised to a single, flat level.

Cars and motor vehicles are not banned from entering the area, but the paving, lack of sidewalks, and high volumes of pedestrians generally:

- deter drivers from entering the area
- cause drivers to hesitate, and feel that they are intruding on a pedestrian area
- effectively confer a pedestrian priority and claim to the space
- cause drivers who enter the area to drive slowly.

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Mobility management	Transport demand management	Guangzhou	China	East Asia

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>Banning of motorcycles in Guangzhou</b>	2004

### ***Source***

Karl Fjellstrom, ITDP

### ***Summary***

Guangzhou is in the process of banning motorcycles from the city, and has for some years not accepted new motorcycle registrations. Motorcycles have already been banned from Ersha Island. The main concern is that motorcycles are associated with crime, but additional concerns include noise, pollution, and the habit of parking and driving on walkways.

Guangzhou began to ban motorcycles on Renmin Road in 2002. In May 2004 the city implemented a ban on motorcycles on 10 roads from 8pm to 5am and 9am to 4.30pm. The Transport Committee opened 11 new night bus routes to alleviate the inconvenience caused by the ban. The 10 roads are Dongfeng Road, Huanshi Road, Tianhe Road, Zhongshan Avenue, Huangpu Avenue, Zhongshan Rd, Tianhe North Road, Changgang Road, Xingang Road, Jiefang Road, Jiangnan Avenue, Guangzhou Avenue, Linhe East Road, Linhe West Road, and Tianhe East Road. Motorcycles will be banned for 24 hours during the day on the entire length of Dongfeng Road from 1 January 2006. Motorcycles will not be permitted to enter the city area at all after 1 January 2007.

Xi'an has implemented a similar gradual ban on motorcycles.

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Mobility management	Transport demand management	Perth	Australia	Oceania

***Title***  
**Travel blending or social marketing**

***Year***  
2002

### ***Source***

Hook & Wright, ITDP, Nairobi 2002

### ***Summary***

Several cities in Australia and Europe have developed a new technique for achieving dramatic changes in mode shares at very low costs. The technique, a form of social marketing, is known as "travel blending". The idea is to simply give people more information on their commuting options through a completely personalized process, and then facilitating changes in travel behavior. While the focus to date has been in developed countries, recent successes in Santiago de Chile indicate that it may be applicable to higher income developing economies.

The technique involves phone contact with all households in the area, identifying the proportion of respondents who would be interested in making some changes in travel behavior, and supplying them with information, e.g., public transport timetables, maps of cycling routes, information on local facilities. For a proportion of respondents there are follow-ups with household visits. In some cases the informational work is complemented by improvements suggested through the interviews, such as better access to public transport services, new bus stops, provision of new timetables, and the extension of service hours, but for the most part the technique relies upon people changing their behavior. Travel blending uses similar techniques but often also has residents complete seven-day travel diaries, which teams later analyze to devise suggestions on alternatives for the participant.

The results to date have been remarkable. In the first trial in Perth, approximately \$61,500 was expended in consulting costs to conduct the surveys and information provision activities. Of the 380 households targeted, the program produced a 6% decrease in auto use immediately and an additional 1% decrease after 12 months. Public transport trips rose from 6% of all trips to 7%, cycling trips doubled from 2% to 4%. The results have held even two years after the assistance was delivered. The technique is now being applied throughout Australia and in some cities in Europe. Similarly impressive results are being achieved at extremely low costs.

The consulting firm Steer Davies Gleave implemented a Travel Blending program in Santiago, Chile. The Santiago results suggest that Travel Blending could become part of an effective, low-cost emission reduction package for certain developing-nation cities. Steer Davies Gleave report an astonishing 17% reduction in car driver trips (as a proportion of participating and non-participating households combined), with a 23% reduction in car driver kilometers and a 17% reduction in time spent traveling.

Travel Blending techniques may be well suited to an active role by NGOs, particularly in the collection of survey data and the development and dissemination of transport alternatives. In many communities, NGOs maintain a close dialog with residents and thus would be well suited to this sort of activity.

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Mobility management	Transport demand management	Bogota	Colombia	South America

### ***Title***

**Dedicated bicycle facilities in Bogota: major modal shift and GHG emission reductions achieved**

### ***Year***

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### ***Source***

ITDP

### ***Summary***

Estimated Greenhouse Gas Emission Impacts of Bogota's BRT, TDM, and NMT Measures

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Mobility management	Transport demand management	London	United Kingdom	Western Europe
<b>Title</b>				<b>Year</b>
<b>Congestion charging</b>				2003

### **Source**

Dave Wetzel, Vice Chair, Transport for London (on Sustran-discuss)

### **Summary**

Central London had historically suffered from one of the worst levels of traffic congestion in the United Kingdom. Average traffic speeds were less than 10 miles per hour throughout much of the working day. This congestion was damaging London's economy as people and goods spend unnecessary time in traffic rather than in productive activities. This congestion worsened the environment of London and made conditions unpleasant for other road users, in particular for walkers and cyclists. Something drastic needed to be done.

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The lessons learnt for the successful introduction of Congestion Charging were:

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- \* Consultation was genuine with a readiness to amend the scheme in the light of reasonable representations.
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Non-motorised transport	Bicycle & NMT planning	Kunming	China	East Asia

***Title***

**Median bus lanes in Kunming**

***Year***

1999

***Source***

Karl Fjellstrom, ITDP

***Summary***

Kunming's transport planners, led by the newly established Urban Transportation Institute, have been amongst the public transport planning leaders in China since opening a median buslane BRT system in 1999. Kunming's 20km median buslane system, combined with high rates of bicycle usage and excellent conditions for pedestrians, has provided the benchmark for bus priority in China and has been imitated in Shijiazhuang.

The outstanding feature of the median busways is the ability of this configuration to accommodate high volumes of buses (around 8,000 passengers per hour per direction), bicycles (more than 6,000 per hour per direction), pedestrians, and mixed motorised traffic in the same corridor and without meaningful conflicts, including at the 4-phase intersections.

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Non-motorised transport	Bicycle & NMT planning	Delhi	India	South Asia

***Title***

**Modern cycle rickshaws in India**

***Year***

1999

***Source***

Lisa Peterson, ITDP

***Summary***

Over 100,000 modern cycle rickshaws have appeared on Indian streets in just a few years, encouraging non-motorized transport use while improving dignity and income for the poor. The Institute for Transportation and Development Policy (ITDP) launched a program to update the traditional rickshaw design, first introducing improved vehicles in 1999. The modernized vehicle costs the same, is more comfortable and is easier to steer.

Very popular near tourist destinations, the modern rickshaws attract passengers because of their greater comfort and safety. Surveys found 15% of their passengers used to take highly polluting motorized three-wheelers.

The rickshaws were designed collaboratively by an international team and are manufactured by over two dozen local businesses. First introduced in Agra, the modern rickshaws have now spread to several cities including Delhi, Lucknow, Jaipur, and Vrindavan

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Non-motorised transport	Bicycle & NMT planning	Bogota	Colombia	South America

### ***Title***

**Dedicated bicycle facilities in Bogota: major modal shift and GHG emission reductions achieved**

### ***Year***

2000

### ***Source***

ITDP

### ***Summary***

Estimated Greenhouse Gas Emission Impacts of Bogota's BRT, TDM, and NMT Measures

The City of Bogota implemented BRT, TDM, and NMT improvements. At the time for which data was available, Bogota had only opened two lines of a planned 22 corridor BRT system. It had also build 200km of a planned 300km of bike lanes. They also expanded numerous sidewalks, added 1100 new parks, shaded promenades, and a 17 kilometer pedestrian zone, the longest in the world. They also implemented a number of TDM measures. Cars with license plates ending with one of four numbers are not allowed to operate within Bogota during the morning and evening peak, restricting access to 38% of the private vehicle fleet. Parking fees were increased by 100%, gasoline taxes were increased 20%, and bollards preventing people from parking illegally on the sidewalk were constructed. All these measures were promoted by a full car free day, car free Sundays, and other promotional efforts.

The effect of these measures on modal split over a 4 year period has already been impressive. The percentage of trips made by private cars and taxis dropped from 19.7% to 17.5%. Public transit passenger trips rose from 67% to 68% of total trips. Bike trips increased from 0.5% of trips to 4% of trips, a remarkable increase in four years. In 2001, the combined BRT, TDM, and NMT measures resulted in a reduction of CO2 emissions by 318 metric tons per day from 1997 levels in absolute terms. Roughly 90% of this resulted in the modal shift from private car and taxi to bus and bicycle, and 10% from efficiency gains within the public transit system. If the CO2 emission benefit is measured against the JICA - projected modal split for 2001, the benefits of the combined measures per day is 694 metric tons of CO2. The projected benefits per day of the change in modal split will rise to 5688 metric tons per day by 2015 if the projected impacts of the current plans are realized.

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Non-motorised transport	Carfree events and zones	Bogota	Colombia	South America

### ***Title***

**Car Free Day in Bogota**

### ***Year***

2000

### ***Source***

UN DESA, 2002

### ***Summary***

In an effort to change the current trajectory, many cities have begun to imagine - and a growing number to implement - a new form of urban development where private vehicles are not the primary mode of mobility. Increased use of public transit and alternative modes of transport is essential if cities are to continue to grow without further polluting the air, increasing congestion on the roads, and threatening the historic built environment, public space and quality of life. Yet the greatest obstacles lie not in the planning for public transport, but in changing the behaviour and attitudes of people. One method of imagining a new city is holding a broadly supported Car Free Day (CFD) in which the use of private vehicles is temporarily banned on a weekday and citizens are asked to use buses, trains, taxis, and safe cycling and walking for their trips, thus allowing them to see that alternative modes of transportation are indeed possible in their city.

Car Free Days can be used to spark a public dialogue about transport policy and to inspire and empower citizens to take a more active role in their city's transport planning and policy. One example of a good CFD is that which was organized by the city of Bogotá, Colombia held Thursday, 24 February 2000. The entire urban area was closed to private vehicles and people were asked to use public and non-motorized transport to travel throughout the day. Although the Day was initially met with resistance in some quarters, it was ultimately so successful that a public referendum to have a CFD every year was passed, providing a firm long term base for the move to a fully sustainable transportation system.

In light of its accomplishments both during the Car Free Day and as a result of the extensive on-street follow up work that resulted and which is literally changing the face of the city, the City of Bogotá and its seven million citizens were awarded the Stockholm Challenge Award for Environment for the year 2000, in conjunction with EcoPlan (a Paris based NGO that helped plan the event), as an exemplary innovative public project that opens up new paths and empowers people, society and the environment. Car Free Days have since been used in Colombia as a means of promoting a more socially equitable transport system, as an educational tool to promote alternative transport, and as a way of identifying and finding solutions to problems in the transport infrastructure. As a result of these accomplishments and the creation of the long term base for the necessary transition, Bogotá has emerged as an exemplary new model for transport and democracy for cities around the world.

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Non-motorised transport	Pedestrian planning	Bangkok	Thailand	Southeast Asia

### ***Title***

**Elevated pedestrian network in Bangkok, linked to Skytrain stations, shields pedestrians from traffic**

### ***Year***

2005

### ***Source***

Karl Fjellstrom

### ***Summary***

From Chitlom Skytrain Station in the city centre pedestrians will from January 2005 be able to take an elevated pedestrian walkway to Central World Plaza and the Paragon Plaza (currently under construction); a length of around 1km. The walkway has been built along the Skytrain alignment, underneath the elevated Skytrain structure.

This further entrenches a trend in Bangkok to link Skytrain stations to nearby buildings - especially shopping centres, which are charged a fee by the Skytrain operators. This benefits both Skytrain passengers as well as pedestrians wishing to cross the road and enter the building. The latest construction from Chitlom to Central World Plaza, however, is far longer than the other walkway linkages between buildings and the Skytrain stations, and establishes an elevated pedestrian network which is almost complete from the central Siam Square station. This network will likely continued to be expanded in the city centre area.

In 2004 a pedestrian linkage was also constructed providing a segregated walkway between the Silom subway station and the nearby Sala Daeng Skytrain station.

## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Non-motorised transport	Pedestrian planning	Manila	Philippines	Southeast Asia
<b><i>Title</i></b>				<b><i>Year</i></b>
Elevated pedestrian network in Manila				2003

### ***Source***

Karl Fjellstrom

### ***Summary***

- complete details, linkages with shopping centres, new park, and rail stations, protecting pedestrians from traffic.

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus rapid transit	Kunming	China	East Asia
<b><i>Title</i></b>				<b><i>Year</i></b>
Median bus lanes in Kunming				1999

### ***Source***

Karl Fjellstrom, ITDP

### ***Summary***

Kunming's transport planners, led by the newly established Urban Transportation Institute, have been amongst the public transport planning leaders in China since opening a median buslane BRT system in 1999. Kunming's 20km median buslane system, combined with high rates of bicycle usage and excellent conditions for pedestrians, has provided the benchmark for bus priority in China and has been imitated in Shijiazhuang.

The outstanding feature of the median busways is the ability of this configuration to accommodate high volumes of buses (around 8,000 passengers per hour per direction), bicycles (more than 6,000 per hour per direction), pedestrians, and mixed motorised traffic in the same corridor and without meaningful conflicts, including at the 4-phase intersections.

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## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus rapid transit	Jakarta	Indonesia	Southeast Asia

### ***Title***

**TransJakarta Busway: Indonesia's first mass transit system**

### ***Year***

2004

### ***Source***

Karl Fjellstrom, ITDP

### ***Summary***

Jakarta in January 2004 implemented a BRT system 12.9 km long between Jakarta's Blok M and Kota areas, offering some valuable lessons for other cities in Asia.

As with metros in other cities, the TransJakarta Busway initially struggled with relatively low ridership, though the popularity of the system has grown rapidly during its first year in operation, and is now around 60,000 daily passengers on weekdays. The second and third lines, which will greatly enhance the commercial viability of the system, are under construction and are planned to begin operation in 2005.

While the Jakarta government established a coordinating team to develop the busway, the very rapid timeframe - 8 months from creation of the coordinating team to the opening of the busway - caused difficulties. In this short time period, the government was not able to transfer budgetary control to the coordinating team. This meant the team had to rely on different agencies to implement different parts of the system, with limited ability to control and plan centrally. The team could not therefore easily control aspects such as bus station design, ticketing systems, roadway construction, and so on.

In addition, Jakarta's planners have so far missed the opportunity to implement corridor-wide improvements in public pedestrian space and bicycle access at the same time as the bus system improvements. In cities like Bogotá and Curitiba the implementation of wide pedestrian boulevards and scores of kilometres of bike lanes, all built around a new bus-based mass transit system, contributed to a perception of a new and transformed city.

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus rapid transit	Beijing	China	East Asia

### ***Title***

**Beijing Bus Rapid Transit**

### ***Year***

2005

### ***Source***

Karl Fjellstrom, ITDP

### ***Summary***

The first line in Beijing's Bus Rapid Transit system, 16km from Qianmen southward, will partially open in early 2005. The system features:

- Pre-board fare collection at the stations, allowing rapid boarding and alighting
- Level or near-level boarding and alighting
- Median, dedicated bus lanes, with bicycle lanes along the corridor. (The dedicated bus lanes will initially not, however, extend to the part of the corridor which is currently congested, which stretches from Tiantan to Qianmen.)
- 20 stations
- 18.3m articulated low floor CNG buses (at a cost of US\$300,000 each).

By the 2008 Olympic Games 100km of BRT in Beijing should be in operation.

The BRT corridor will be on the centre of the road, with overtaking lanes at some stations. The stations will be physically open air with a roof shelter, but with controlled access. In the major avenues underpasses will be used to access the stations, with the ticketing office and turnstiles underground as in some metro stations.

Due to the rapid implementation time frame not all planning aspects have been able to receive sufficient attention, especially regarding management and operational aspects of the system. For example there is no feeder system being planned, no adequate terminal from which to control operations, and the operational design has been left to the system's monopoly operator; the largest bus operator in Beijing.

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## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus rapid transit	Seoul	South Korea	East Asia

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>Seoul's median bus lane implementation</b>	2004

### ***Source***

Karl Fjellstrom

### ***Summary***

Seoul has successfully undertaken comprehensive bus sector reforms.

Seoul was facing rapidly increasing car ownership and congestion, and declining bus system ridership and profitability. Bus system ridership declined from 8.9 million passengers per day in 1983 to 4.2 million in 2002, with the number of buses remaining virtually unchanged. The system has recovered passengers after reforms were implemented. After the new system commenced operation on 1 July 2004 in Seoul, bus system ridership in August was 10% higher than in August 2003. Seoul's new system has been in planning since 1997.

The main components of the 'new' bus systems implemented in 2004 in Seoul was:

- Progressively implemented new 'clean' bus fleets (815 new low floor CNG buses in Seoul introduced in 2004)
- New contracting arrangements with operators based on a new business scheme for the bus system, and measures to end on-street 'fighting' for passengers
- New trunk and feeder bus route configurations
- Median bus lanes, with 75km currently operating in Seoul
- New fare collection regimes, based on smart cards with free transfers within zones
- Improved and/or new bus terminals
- New bus control centres with bus management systems using GPS technologies
- Extensive marketing and promotional activities, and efforts to ensure that existing operators were involved in the new system
- New bus station designs to accommodate higher capacities and improved passenger amenities.

Seoul's newly implemented BRT system provides a good illustration of the advantages of median bus lanes over kerbside lanes, and the advantages of having overtaking lanes at bus stops. Further information on the bus reform experience of Seoul is available from the Seoul Development Institute.

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus sector regulation	Guangzhou	China	East Asia

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>Smart card introduction in Guangzhou</b>	2002

### ***Source***

Karl Fjellstrom, ITDP

### ***Summary***

A smart card was in January 2002 introduced in Guangzhou which can be used to pay for metro, bus, taxi and ferry rides, as well as for services such as parking.

By the end of 2002, one million cards had been issued, and by July 2004 this had risen to 3 million, making payment more convenient and faster for passengers. The production cost of the cards is estimated to be around US\$0.80 each.

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## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus sector regulation	Guangzhou	China	East Asia

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>Civic enforcement measures against illegal parking and infringement on bus lanes</b>	2003

### ***Source***

ITDP

### ***Summary***

The Guangzhou, China, traffic police enlisted average citizens as partners in the fight against drivers who break traffic rules. For several months in late 2003, the traffic department offered RMB20 for photos of traffic violations that lead to successfully imposed fines. The innovative enforcement program, which tracks drivers based on vehicle license plates, was an initiative created by the head of Guangzhou's traffic police.

Due to a deluge of photos, the department was forced to take steps to tighten the conditions of offering a reward. Digital images were not accepted, and both a print and negative must be submitted.

Anecdotally, the program had a strong effect on driver behavior. When ITDP staff tried to snap photos of vehicles parked on walkways (a common problem in the city) drivers often drove away before the photo could be taken.

Given that the traffic police in Guangzhou have authority over traffic management and are the ones who are principally responsible for the overwhelming priority given to cars in the city, this enforcement mechanism was a refreshing (and rare!) step in a more sustainable direction.

Unfortunately, however, in 2004 the program was withdrawn following a successful media campaign by motorists opposed to the policy.

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## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus sector regulation	Seoul	South Korea	East Asia

### ***Title***

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### ***Year***

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## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus sector regulation	Graz	Austria	Western Europe

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>Ensuring public transport services at night: successful bus and taxi integration to retain transit passengers</b>	1999

### ***Source***

Michael Yeates, Public Transport Alliance, Brisbane, Australia. From Sustran-discuss, Dec 2004

### ***Summary***

In Graz, rather than run the public transport at a big loss at night, the public transport "progressively" closes down and taxis take over. It is apparently cheaper for the public transport organisation(s) to pay the taxis a contracted subsidy than it is to run the public transport. So the taxis know that there will be passengers along the remaining public transport routes until they too shut down.

From then on, the taxis operate as the public transport system. You provide your ticket as you would on the public transport. The taxi then claims a contracted fare from the public transport supplier. The taxis get a much higher fare than the fare already paid to the public transport by the passenger of course, but that "cost" becomes a "saving", as it is offset as a large saving from not running public transport into the period when the losses are simply too big.

Further, and most importantly, by providing public transport users with a reliable cheap, safe, 24 hour service - which in some ways is actually improved rather than made worse in the period when most public transport services either shut down or run skeleton services - patronage support and loyalty is maintained if not increased.

Effectively this is a very simple conceptual exercise in integration and from my very limited experience of it in 1999, it seemed to work well. Certainly people said they rarely had need of a car because they could always rely on the public transport with the night taxi system.

The taxi drivers soon know where and how to find passengers, and there is an incentive to keep the cabs on the road. The passengers regard it as equivalent or better level of service (ie safer at night, more convenient etc) than the "normal" public transport LOS.

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Bus sector regulation	Pattaya	Thailand	Southeast Asia

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>Pilot project successfully offers improved public transport in larger buses</b>	2004

### ***Source***

Karl Fjellstrom

### ***Summary***

In early 2004 (finishing in July) an innovative experiment with improved bus services was implemented in Pattaya, Thailand. Led by a Bangkok academic / consultant, the city for 3 months introduced a new circular bus service charging a flat 5 baht (\$US0.12). It was fully funded by advertising on the bus: they didn't want or need to charge a fare, but the existing paratransit 'mafia' forced them to.) It included a courteous and well trained driver, a contra-flow bus lane for part of the route, improved passenger information, and an attractive and comfortable minibus vehicle (compared to the normal pickup truck style songtael paratransit). It proved very popular with the locals, and the bus included a video showing information about Pattaya which was oriented toward tourists.

Unfortunately they had to stop after 3 months and had to operate under various other restrictions imposed in negotiations with the songtael mafia. But even with these constraints it was successful and interesting demonstration project showing innovative approaches and revealing a considerable suppressed demand for decent public transport services.

## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Paratransit & taxis	San Fernando	Philippines	Southeast Asia

### ***Title***

**Successful tricycle regulation in San Fernando City**

### ***Year***

2000

### ***Source***

Jun Ellis (via CAI-Asia discussion list, 30-Jul-02). Clean Air Manila Project, Swisscontact

### ***Summary***

The tricycle situation in San Fernando City, Province of La Union (~300 km north of Metro Manila) is unique in at least three respects:

1. The local government has a strong hold on the number of tricycles running around. It set the maximum number of tricycles (1,600 units) several years back, and has consistently stood by this policy. This enables the tricycle drivers and operators to earn a decent living. In contrast, other local governments use the tricycle franchise as a political tool, or are simply oblivious of the need to limit the number of tricycles. Such is the case in the smallest town in Metro Manila, Pateros (~2 square km land area), where around 2,500 tricycles run around but only 1,300 of them have franchise from the local government. Tricycle drivers there complain for having a measly income (~US\$6 per day).
2. Mayor Jane Ortega of San Fernando City has a good rapport with the tricycle drivers and operators. I personally saw this two years ago when we had a dialogue with the tricycle sector regarding the phase-out of leaded gasoline. In contrast, the relationship between the tricycle sector and most, if not all, of the local governments in Metro Manila is, to say the least, strained.
3. Four-stroke motorbikes have become popular in provincial centers like San Fernando City where fuel efficiency is more critical than faster torque response. In these areas, stop-and-go situations are uncommon and tricycles sometimes go as far as the next town.

In summary, as I see it, the Local Government of San Fernando City is able to mount a workable solution to the tricycle problem because it has demonstrated its political will (by limiting the number of franchises throughout these years); it maintains a good communication line with the stakeholders; and its road condition favors the use of four-stroke engines.

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## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Paratransit & taxis	Graz	Austria	Western Europe

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>Ensuring public transport services at night: successful bus and taxi integration to retain transit passengers</b>	1999

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Rail transit	Bangkok	Thailand	Southeast Asia

<b><i>Title</i></b>	<b><i>Year</i></b>
<b>Elevated pedestrian network in Bangkok, linked to Skytrain stations, shields pedestrians from traffic</b>	2005

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Karl Fjellstrom

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## ***Innovative SUT Practices***

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Rail transit	Manila	Philippines	Southeast Asia
<b><i>Title</i></b>				<b><i>Year</i></b>
Elevated pedestrian network in Manila				2003

***Source***

Karl Fjellstrom

***Summary***

- complete details, linkages with shopping centres, new park, and rail stations, protecting pedestrians from traffic.

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<b><i>MainTopic</i></b>	<b><i>SubTopic</i></b>	<b><i>City</i></b>	<b><i>Country</i></b>	<b><i>Region</i></b>
Public transport	Rail transit	Guangzhou	China	East Asia
<b><i>Title</i></b>				<b><i>Year</i></b>
Smart card introduction in Guangzhou				2002

***Source***

Karl Fjellstrom, ITDP

***Summary***

A smart card was in January 2002 introduced in Guangzhou which can be used to pay for metro, bus, taxi and ferry rides, as well as for services such as parking.

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