QUANTIFYING THE ENVIRONMENTAL, SOCIAL, AND ECONOMIC BENEFITS FROM BUS RAPID TRANSIT SYSTEMS

Workshop Report
June 24-25, 2014 - Kuala Lumpur, Malaysia
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1. OVERVIEW AND OBJECTIVES

Bus Rapid Transit (BRT) systems serve more than 150 cities globally and have helped transform mobility. BRT systems can yield benefits including increased access to transportation services, reduced emissions through fuel savings, and improved liveability of cities. However, many benefits are often not quantified due to barriers such as lack of appropriate methodologies, inhibiting stakeholder understanding of the full impacts.

The Asia LEDS Partnership and the Malaysia Land Public Transport Commission (SPAD), through SPAD Academy, hosted the Workshop on Quantifying Environmental, Social, and Economic Benefits of BRT Systems during June 24-25, 2014 in Kuala Lumpur, Malaysia, to improve knowledge and capacity on quantifying benefits from BRT systems. Seventy participants from China, India, Indonesia, Laos, Malaysia, Philippines, and Vietnam shared experiences on planning and operating BRT systems, and gained practical skills on estimating greenhouse gas (GHG) emission reduction potential and other social and economic benefits of planned or current BRT projects to inform decision making.

The workshop was supported by Asia LEDS Partnership members including the US Agency for International Development (USAID), Clean Air Asia, EMBARQ India, Institute for Transportation Development Policy (ITDP), and the LEDS Global Partnership Transport Working Group.

A summary of proceedings follows. Additional materials are available online at:


2. OPENING REMARKS

Tan Sri Dato’ Seri Syed Hamid bin Syed Jaafar Albar, Chairman of SPAD, delivered the opening address, emphasizing the value of peer exchange and partnerships. Tan Sri encouraged participants to exchange and deliberate on key issues to bring evolution to BRT in Asia.

Mr. Orestes Anastasia, Co-Chair of the Asia LEDS Partnership, and Senior Regional Climate Change Advisor, USAID Regional Development Mission for Asia, noted the rapid urban growth trends in Asian cities, and transportation as a major urban development challenge. Policy makers are responsible for improving quality of life in their city, which includes providing sustainable modes of transport options. BRT offers an affordable option, and many cities are selecting BRT for new routes.

“...This workshop is very important because we need to quantify impacts related to implementation of all the planned BRTs in the country. Building more roads is not an option – we need to get people to shift their mindset to take public transport.”

-- Sharul Aswa Abdul Rani, BRT Team Leader at SPAD
3. OVERVIEW OF BRT IN ASIA AND PEER EXCHANGE

BRT Planning Process: Applications in Asian Cities
Presented by Karl Fjellstrom, Regional Director, East & Southeast Asia, ITDP

Some BRT systems have been criticized for their low-demand BRT lanes and worsening of conditions for mixed traffic. However, through good BRT planning – which includes operational design, financial modelling, physical design, multi-modal and land use integration, business plan development, communications and marketing, contracting, and other considerations – BRT systems can deliver a high-quality mass transit system. The high capacity BRT systems in Bogotá, Colombia and Guangzhou, China now carry more riders than most metro systems in the world.

The diagram below highlights the BRT process applied in Guangzhou, Lanzhou, and Yichang in China; Kuala Lumpur and Johor Bahru in Malaysia; and Vientiane in Laos. The planning and design process can be completed within 1 year, with a further 1 year for construction.

Lessons Learned
- Support and commitment of political leadership is key to advancing the BRT planning process.
- BRT projects should be designed as an “urban development corridor”. They should integrate parking reform, public space, non-motorized transport improvements, and modal integration.
- BRT systems should not be monopolized by one operator. Having multiple BRT operators creates competition, which can improve quality of BRT operations and service in the long term.

Benefits of BRT Systems
Presentation by Anjali Mahendra, Strategy Head, Research and Practice, EMBARQ India

EMBARQ’s report, Social, Environmental and Economic Impacts of BRT Systems (December 2014), analyzed BRT performance and evidence on social, environmental, and economic costs and impacts from four case studies in Bogotá, Mexico City, Johannesburg, and Istanbul.

Performance: BRT system performance can vary significantly depending on design characteristics and level of integration with other transport modes. For instance, corridors with exclusive, segregated bus lanes will be able to move more passengers in an hour than a corridor where buses operate in bus-priority lanes which also permit access to mixed traffic. Bypassing lanes at stations (to allow an arriving bus to pass boarding passengers at the station) enable express routes to skip certain stations and reduce travel times for some passengers. Bus speeds will be higher on corridors with fewer intersections.
Costs: Project costs vary across systems depending on overall performance such as corridor capacity, and quantity and type of equipment used. Total BRT capital costs include busway infrastructure, stations, buses and technology systems such as passenger information and fare collection systems. These costs can vary (USD 1 million to 12 million per km). On average, the cost of a BRT system is one-tenth of a metro system (USD 75 million to 200 million per km).

Impacts: BRT systems can improve quality of life and the environment at the same time.

- Passenger travel times are reduced by moving BRT buses out of mixed traffic and into exclusive, segregated lanes.
- Effective traffic signal management and high-frequency bus service can help to minimize passenger waiting and transit times.
- BRT systems reduce GHG emissions by reducing vehicle-kilometers travelled and replacing older technology and smaller vehicles with newer, cleaner, high-capacity BRT buses.
- Through higher quality of management, BRT systems take road safety issues into account such as providing pedestrian crossings, which help reduce the rate of road fatalities.

Update on BRT Initiatives in Malaysia
Presented by Sharul Azwa Abdul Rani, Senior Manager, BRT Unit, SPAD

Malaysian private vehicle growth rate has increased significantly (500,000 new cars every year) due to low cost of vehicles and fuel price subsidies, resulting in severe urban traffic congestion.

Under the Malaysian Government Transformation Program – Vision for 2020, one of the six initial National Key Results Areas is urban public transport. The National Land Public Transport Master Plan (NLPTMP) targets a 40% mode share for public transport in urban areas by 2030 with increased connectivity in rural area. The Bus Transformation Plan, under the NLPTMP, specifies that buses will fill in the gaps of the rail network, such as through providing feeder bus services for quick connections to primary and secondary corridors and suburban centers. BRT is the main component of the plan.

There are three major BRT projects: Kuala Lumpur-Klang BRT, Iskandar Malaysia BRT, and Sunway BRT.

Impacts: Development of BRT systems will have significant impacts on Malaysia’s economy. For example, the impact analysis of the KL-Klang BRT project shows that:

- Fuel consumption and fuel costs will be reduced by RM 4.8 billion per year in 2020, and RM 6.1 billion per year by 2030.
- Less fuel consumption leads to lower emissions, resulting in pollution cost savings of RM 160 million per year in 2020, and RM 200 million per year in 2030.
- Less congestion and delay is expected to achieve RM 520 million per year in 2020, and RM 862 million per year in 2030.

Surveys of international businesses conducted by SPAD have also shown that improved urban public transport can be a major driver for attracting investment to Malaysia.
FULL GROUP: Peer Exchange
Participants shared perspectives and experiences on the following questions. Responses are highlighted.

What are/were your main objectives of pursuing a BRT system?
- For Malaysia: BRT is a relatively low-cost public transport option and a quick win, as projects can be implemented in 18 months. Its feasibility, combined with its ability to address related challenges makes it an appealing option.
- For Iskandar, Malaysia: Iskandar region seeks to avoid the traffic congestion observed in Kuala Lumpur. BRT is the lowest-cost option to mitigate congestion and provides a systematic transport network. BRT will have the same impacts as an MRT system, and there is public support for it.
- For Cebu, Philippines: It is not sustainable to depend on low-capacity modes such as jeepneys. Because Cebu is a heritage city, BRT presented a good option as it will not “block” heritage sites. The TransCebu BRT planning process involved detailed assessment to ensure that benefits would result, and centralized review by the President of the Philippines.

What was the decision making process? Was it easier than other transportation projects?
All participants indicated that the decision making process was more difficult for BRT than for other transportation projects. Many authorities and governing agencies needed to be involved, complicating the deliberation and consensus building process.

What impacts do/did you expect (or observe) from a BRT system?
- For Kuala Lumpur, Malaysia: We expect that more people will take buses and change their mode from private vehicles. A BRT system must attract new riders, not just carry the existing load.
- For Guangzhou, China: Guangzhou BRT has operated for 4 years. Benefits seen are that the system can match the growing demand (currently 850,000 riders per day), is moving faster (with buses traveling 23 km per hour as compared to 17 km per hour before), and there are reduced traffic jams.

How do you define or measure success of your BRT system?
- Ridership numbers and mode-shift numbers (as a key objective is to attract new users)
- Time savings for riders
- Safer access to stations and better waiting environments for riders
- Rider satisfaction and perceptions compared to normal bus systems
- Rider sense of “ownership” of the BRT system
- Demonstrated land use value changes

What are critical factors to help avoid failure?
- BRT must have a significantly reduced travel time as compared to cars to attract riders and cause mode-shift (cost is not a factor for some Asian cities where cars and fuel are relatively inexpensive)
- Understanding passenger needs and behavior (e.g., related to transfer points and times) and integrating those considerations in BRT system design is essential
- Coordinating between planning and implementing agencies
- Integrating land use planning along BRT corridors
4. OPERATIONAL BRT SYSTEMS IN ASIAN CITIES AND THEIR IMPACTS

Preliminary BRT Impact Analysis of Guangzhou BRT
Presented by Li Shanshan, Vice Country Director, East & Southeast Asia, ITDP

Guangzhou BRT opened in February 2010, and can be a model for affordable, low-carbon, high-volume public transit for fast-growing cities in developing countries. It carries more than triple the passenger flows of any BRT system in Asia and has the world’s highest BRT bus flows, with one bus every 10 seconds into the city in morning rush hour.

Guangzhou BRT is also the first system in China with more than one bus operator and the first with private sector operators. It is the first BRT system worldwide with a bike sharing system implemented at the same time along the corridor.

Impacts: ITDP conducted an analysis to evaluate impacts on traffic, and economic and social developments along the BRT corridor. Data was collected from 2009, before the BRT system opened, to 2013. Bus riders’ attitude survey was conducted from 2007. Considering citywide trends, attitude surveys and other surveys were contrasted with a ‘control corridor’ survey. Data analysis is ongoing and preliminary results are below:

<table>
<thead>
<tr>
<th>Traffic Impact</th>
<th>Land Value</th>
<th>Road Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost. Construction cost per km of Guangzhou BRT (52 million yuan) was 10 times lower than the Metro.</td>
<td>Urban village rent. Guangzhou is a mega city with high urbanization. There is a high demand for residential rentals along the BRT corridors.</td>
<td>Bus passenger walking distance. 96% of users walked less than 1.4 km or 20 minutes to the BRT stations.</td>
</tr>
<tr>
<td>Bus ridership. BRT ridership was much higher than the Metro, with an average volume of 780,000 person per day for BRT, and 250,000 persons per day for Metro line 5.</td>
<td>Second-hand housing prices. New developments along BRT corridors. Residential and commercial.</td>
<td>Passenger time savings. Bus speed in peak hour increased by 6 km per hour, resulting in saving 6.6 minutes per passenger, 32 million passenger hours per year, and 480 million yuan per year.</td>
</tr>
<tr>
<td>Passenger volume. Boarding increased by 37% across all BRT stations.</td>
<td></td>
<td>Passenger perception on service level and performance of the bus system and stops. Rider attitude surveys showed that quality of service improved dramatically with implementation of real-time bus info and new stations.</td>
</tr>
</tbody>
</table>
Land-use and Economic Impacts of Ahmedabad BRT
Presented by Shivanand Swamy, Executive Director, Centre of Excellence in Urban Transport, Centre for Environmental Planning and Technology (CEPT) University

Ahmedabad, India is a compact city with a population of over 6 million within an area of 466 sq. km. Commuting options in Ahmedabad were limited by municipal buses operated by Ahmedabad Municipal Transport System (AMTS) since 1945. The Ahmedabad BRT: Janmarg, or “the people’s way,” became operational in 2009. It has grown from 12 km to 80 km of routes, and from 18,000 to nearly 150,000 passengers per day.

Janmarg aligns with the city’s vision of “Accessible Ahmedabad” by redesigning the city structure and transport system towards greater accessibility, efficient mobility, and a low(er) carbon future. Janmarg integrated land use around BRT into the following transport strategies:

- Think “network – not corridors”
- Focus on: urban poor locations, the old city, and closed textile mill land
- Provide for additional Floor Space Index - FSI

Impacts:
1. Land use impact study: Since Janmarg operated and until 2014, the rate of new commercial buildings in Shivranjani area (with BRT) has increased significantly by 292% while increasing by only 123% in Shyamal Cross Road area (AMTS only).
2. Land transformation study: Land prices along the BRT corridors rose significantly after Janmarg began operating, by 50-105% for residential and 60-185% for commercial buildings.
3. Economic activity distribution: The growth rates of both residential and non-residential properties and areas in Ahmedabad have increased since the BRT began operating. There is more investments in commercial buildings along the corridors and density of the non-residential and residential units have decreased as a result of the expanded BRT routes.
5. TOOLS AND FRAMEWORKS TO ASSESS IMPACTS OF BRT SYSTEMS

**Cost–Benefit Analysis**
_Demonstrated by Shivanand Swamy, Executive Director, Centre of Excellence in Urban Transport, CEPT University_

**Overview: Cost–Benefit Analysis**
Because BRT infrastructure and constructions must reallocate the use rights of road space, city transport authorities cannot build their BRT projects unilaterally. Social consent is fundamental.

This can be achieved through Cost–Benefit Analysis, which is an implicit or explicit assessment of benefits and costs (i.e., advantages and disadvantages) associated with an investment. The benefits and the costs may be monetary or non-monetary.

**Economic analysis** appraises the project contribution to the social and economic welfare of the city, region or country. It is made on behalf of the whole society. **Financial analysis** appraises the project in terms of return on investment. It is made on behalf of the entity investing in the project.

**Summary of Methodology: Economic and Financial Analysis**
The diagram below shows the five-step framework for economic and financial analysis of a project.

- **Step 1** Defining Project Boundaries
- **Step 2** Economic Analysis of Project
- **Step 3** Assessment of Financial Viability of the Project
- **Step 4** Examine Private Finance Option (PPP)
- **Step 5** Examine Public Finance Option

**Estimation of Capital Cost and O&M Cost for the Project**

- **Is Project Economically Viable?** (If EIRR >12%)
  - **Yes**
  - **No**
    - Project should not be undertaken

- **Is Project Financially Viable?** (If EIRR >Cost of Fund if Net Cash Flow is sufficient for Debt Service)
  - **Yes**
  - **No**

- **If project Commercially Viable considering VCI or Project structure Modification**
  - **Yes**
  - **No**

View the full presentation for details on sub-steps and examples for each step in this framework.
Transport Emissions Evaluation Models for Projects (TEEMP)
Demonstrated by Mark Angelo Tacderas, Transport Researcher, Clean Air Asia

Overview: Emissions Estimation Process
Traditional tools and methodologies for evaluating the GHG and air pollutant emissions impacts of transport projects may require time, data, and financial resources. TEEMP is an excel-based, free-of-charge spreadsheet model for evaluating the emissions impacts of transport projects, including BRT. It enables rapid assessment of a project’s CO₂ impacts to give reasonable direction for action and alternate options evaluation.

The BRT TEEMP model has two modes of impact estimation that can be selected by the user:

- **Sketch Analysis Tool:** This mode works as a simple calculator. It multiplies the proposed BRT corridor length by the average certified emissions reductions from previously implemented projects. This provides an order of magnitude estimate for potential GHG reduction.

- **Full BRT Model:** This mode allows the user to input local and project-specific data for all fields and produce a higher-confidence GHG impact estimate. While some data-points are required (green cells) for the Full Scenario Method, many other data-points have default values (red cells) which can be used if local data is not available.

Data Requirements
a) Total round trip length of each route (input onto ‘BRT Operations’ worksheet)
b) Kilometer or percentage of route that overlaps project corridor (BRT Operations)
c) Peak hour frequency (BRT Operations) and average observed occupancy on the section of the corridor most heavily utilized by buses or total boarding and alighting counts for each bus route serving the corridor (BRT Operations)
d) Bus engine types (% of pre-Euro, Euro II, Euro III), entered onto ‘Tech%’ Worksheet’
e) Bus fuel types (petrol, diesel, CNG, LPG, hybrid, etc.) entered into ‘Fuel Type’ worksheet
f) Bus capacity (BRT Operations)
g) Average speeds, entered on ‘Speed’ worksheet
h) Average passenger trip length entered on ‘Trip’ worksheet

Summary of Methodology: TEEMP

1. Calculate emissions of the project scenario:
2. Calculate emissions of the business-as-usual scenario:

3. Estimate CO₂ emissions impact of the project over the business-as-usual scenario.

4. Summarize total CO₂ emissions results:

Results are summarized in the “CO₂ Emissions Savings” table in the tool. The direct impacts are calculated by taking the total emissions generated by the new system and the emissions related to construction, and subtracting them from the emissions reduced from decreased trips using other modes. Direct impacts are listed separately from indirect impacts.

For more information, the TEEMP tools and manual are available at the [Clean Air Asia website](http://cleanairasia.org).

**Health Impact Assessment (HIA) in Transport Planning**

*Presented by Anjali Mahendra, Strategy Head, Research and Practice, EMBARQ India*

**Overview: HIA Process**

HIA can inform decision-makers about potential public health impacts of proposed transportation investments prior to project implementation, to help maximize the benefits and minimize the negative impacts on health.

The overall HIA process is shown at right. Currently, most HIAs are led by the public sector (health or local government), but non-governmental sectors can also take on this role.

**Data Requirements**

a) Population Demographics: Current population and growth rate, age, ethnicity, sex, income and employment, education

b) Community Health: Life expectancy, asthma, diabetes, coronary heart disease, obesity, traffic injury data and fatalities by vehicle type, physical activity levels, mental health/stress/road rage incidence

c) Transportation Behavior, Infrastructure, and Other Environmental Factors: Urban area and mode share, trip length and vehicle occupancy, air quality
Summary of Methodology: HIA Framework for Transport Sector

More information at: Integrating Health Benefits into Transportation Planning and Policy in India

Road Safety Audits
Presented by Binoy Mascarenhas, Manager – Urban Transport, EMBARQ India

A well-executed BRT system can significantly improve road safety because it segregates the movement of buses from other transport modes, and introduces other changes in the road infrastructure that are associated with safety (e.g., shorter pedestrian crossings and refuge islands). In particular, a central lane BRT system places buses away from the paths of motorcyclists and pedestrians, who are the most vulnerable road users. Bus occupants are also protected, through features such as automatic bus doors.

However, BRT systems have also met with skepticism, due to poorly designed infrastructure that has adverse impacts on road safety. Therefore, conducting road safety audits is a key step in BRT planning.
Road Safety Guidelines for BRT Systems

The diagram below offers a set of suggested design for components of BRT corridors such as street design, intersections, stations and station access, as well as transfers and terminals.


Co-benefits Evaluation Tool for the Urban Transport Sector

Summary of tool by Christopher Doll, Research Fellow, UNU-IAS

Overview: Co-benefits Evaluation

The co-benefits approach is a mean of achieving multiple outcomes with one policy initiative. With respect to climate change, they are means to integrate local development concerns with GHG emissions.

This evaluation tool is a simulation model designed for evaluating the climate co-benefits of the city’s transport sector through the following modes:

- **Before and after analysis:** In the tool approach a “scenario” is viewed as a consistent description of a possible short term development pattern of a city’s transport sector, characterized mainly in terms of direction of local governmental policy, which is named as policy intervention (option) in this tool.

- **Future Projection:** Generate mid-to long-term forecasts (up to 2050) of transportation energy demand and its related emissions at the census division level in support of the development of the future policy actions.

This tool considers what co-benefits would accrue if local air quality and carbon emissions were the main criteria used in the decision-making process, and demonstrates the multiple dimensions of a transport policy beyond its intended benefit. Outcomes of the evaluation can help policy makers to:

- Develop an integrated approach to climate and development policy formulation at the city scale
- Identify potential synergies in the urban energy system
Summary of Methodology: Co-benefits Evaluation Tool
The conceptualization of co-benefits in the transport sector is explained in the diagram below.

Flow A in the diagram:
1. Establish a baseline inventory of vehicles and usage data in the city to assess the status of emissions – Intended Benefits
2. Understand the context [G]. Understand what are the relative capacities and obstacles are in the city regarding culture, institutions, implementation and political will and rank most implementable policies.
3. Evaluate co-benefits of options [T]. Using the spreadsheet examine co-benefits of different policies, which are informed by points (1) and (2).

Flow B in the diagram:
4. Establish a baseline inventory of vehicles and usage data in the city to assess the status of emissions – Intended Benefits
5. Explore [T] options to develop goals. Using the spreadsheet examine co-benefits of different policies, using the tool to understand what magnitude of change would be required in the transport system.
6. Understand the context [G]. Based on the co-benefits evaluation, use the self-assessment governance tool to understand which policies are more or less implementable and which areas of governance (e.g., culture, institutions, implementation and political will) need to be strengthened to enhance the implementation.

The toolkit is freely available for download and use to the users through the UNU-IAS online website: Urban Co-benefits Evaluation Tools.
6. LESSONS LEARNED IN PLANNING AND IMPLEMENTING BRT SYSTEMS

Institutional Arrangements: Lessons Learned & Being Learned in the Philippines
Presented by Ildefonso Patdu, Assistant Secretary, Department of Transportation and Communications (DOTC), Philippines

BRT is part of the Philippines’ National Environmentally Sustainable Transport (NEST) Framework. A Bus Revalidation Survey (2006) showed oversupply of bus units and overlapping routes, resulting in recommendations to simplify routes and explore BRT systems in Metro Manila and Cebu. The Cebu BRT: TransCebu was approved by the President of the Philippines in May 2014.

TransCebu will traverse a 16-kilometer corridor. It will operate on the median of the existing national road, with one terminal and 13 median stations; busways are physically segregated from other traffic to reduce the impact upon the Right of Way and enable road side activity to proceed with minimal interruption. Especially important institutional considerations are: close synergies and cooperation between national government (DOTC as project proponent) and the local government (Cebu City as project host), and having champion(s) within the BRT team who could rally stakeholders.

Lessons Learned
- Importance of well-prepared technical studies as basis for firm agency decisions
- Definitive master plan by agency as blueprint, beyond political term of office
- Corresponding capacity building for agency management and technical staff
- Coordination with other relevant agencies and local government units by sharing goals and vision from the system perspective
- Pro-active communications and social marketing plan
- Address problems of public transport at the root (e.g., new business model for public transport, focus on user needs to tailor-fit public transport solution)

Institutional Design: Lessons from Bus Improvement Program in Indonesia
Presented by Sudarmanto Budi Nugroho, Policy Researcher, Institute for Global Environment Studies (IGES)

BRT is a key component of Indonesia’s urban public transport improvement program. Currently, there are 15 major cities in Indonesia operating BRT systems, with Jakarta as the first in 2004. This diagram shows the steps for processing the BRT programs. Institutional design is one of the key elements of planning design for implementation.
Lessons Learned
To build and maintain strong commitment of various stakeholders, especially within existing transport modes, the Indonesia Ministry of Transport identified four required components for institutional design to support BRT systems:

- Establish an independent public transport authority to work on the business plan of a BRT project
- Determine and contract BRT service operator(s)
- Integrate the informal transport sector by setting up a feeder system and limited operation zone
- Integrate existing public transport operators (e.g., integration of operational management such as: ticket, tariff or organization, physical integration with trunk route, etc.)

Infrastructure and Operational Design: Lessons from Guangzhou, Yichang, and Vientiane
Presented by Karl Fjellstrom, Regional Director, East & Southeast Asia, ITDP

Many key aspects of BRT infrastructure design cannot be changed after the system is built. It is important to use correct approaches to the planning and design of stations, roadways, intersections, Intelligent Transport Systems (ITS), and modal integration. Operational design is integrally related to physical design.

Operational: Guangzhou BRT
This is a direct-service system, which does not require any transfer terminals, hubs, or interchanges. BRT buses can run outside the corridor. There are 31 BRT routes along the 23 km BRT corridor, and a total of 273 km of roads are covered.

Lesson Learned: Route design optimization study is necessary. The study for Guangzhou showed that a longer route did not necessitate a larger fleet, and that direct extensions outside the corridor were more efficient. Guangzhou BRT provides sub-stops according to number of bus routes and bus volumes. Each BRT station provides next-bus arrival information, real-time passenger information, and at least two docking areas at sub-stops.

In Construction: Yichang BRT
Construction began in February 2014 and will be completed in June 2015. The corridor will run 23.9 km with 37 stations connecting major transit hubs in the city’s north and south.

Lesson Learned: Data modeling plays an important part for designing an optimal system (see diagram).

In Planning: Vientiane BRT
Planning is in progress for a 11.5 km corridor with 23 stations. Parking and non-motorized transport proposals include pedestrianization and widening of sidewalks, intersections, and crossings; banning vehicle encroachment through bollards; public space improvements; and relocating aerial cables underground.

Lesson Learned: Designing a BRT route as a small loop line (initial plan) did not respond to the needs of local commuters who mainly live in different peri-urban areas. Plans were modified accordingly. A bike sharing system and bike lanes are also planned.
Branding, Marketing, and Communications: Lessons from Indore BRT
Presented by Binoy Mascarenhas, Manager – Urban Transport, EMBARQ India

Indore’s rapidly growing population created serious problems, including road congestion, travel delays, traffic accidents, and environmental degradation. The Atal Indore City Transport Services (AICTSL) introduced Indore’s BRT line: iBus – India’s first, fully air-conditioned BRT, which became operational in May 2013. The system can carry more than 23,000 passengers per day, which helps to ease congestion, reduce travel times, and create a safe, convenient mode of public transport.

However, when the construction of iBus began in 2007, there was strong opposition from the general public as a result of little public engagement, lack of faith in the political and administrative leadership of the city, and construction delays. AICTSL introduced four branding and public outreach activities to generate a positive “buzz” around the project:

- **Crowdsourcing to create ownership.** To involve the people of Indore, AICTSL held a contest in August 2012 to name the new BRT. The name “iBus” was chosen as a winner. The “i” signifies “intelligent” as well as “Indore,” creating a sense of belonging. The name was easy to remember and pronounce. The sense of ownership it created fostered local pride in the new BRT service.

- **Education campaigns to address participant misconceptions.** Held public focus groups, sessions and study tours with students, young professionals, and senior journalists. Provided a range of branding and communication material that covered every aspect of this BRT project.

- **Social media.** The AICTSL created a dialogue between Authorities and public through iBus Facebook fanpage as a platform for open, public dialogue presenting a transparent image of the iBus. The Facebook page provided updates on construction, answered queries regarding service, and soon became an informal forum to take feedback and suggestions.

- **Trial run with an informed, accepting public.** Free passenger trials of the iBus did not charge a fare for 5 weeks. It was a strategic decision aimed at achieving greater ridership while helping everyone understand the system.

**Lesson Learned**

As many cities move forward with their own BRT systems, it is important to remember that designing a BRT system is only half the battle; effectively communicating about the project and its benefits is imperative to success.

**More information:** From Here to There: A Creative Guide to Making Public Transport the Way to Go

Communications materials developed conveyed the benefits that would result to ALL road users.
7. CLOSING AND NEXT STEPS

Hosts from SPAD Academy noted that the information gathered in this workshop will be used to move forward the BRT systems that SPAD is planning for Malaysia. SPAD will also ensure Malaysia’s BRT system becomes a pioneer in reducing carbon and GHG emissions within the public transport ecosystem, to make Malaysian cities greener, cleaner and more efficient. Moving forward, SPAD welcomes the Asia LEDS Partnership’s support and further engagement.

The Asia LEDS Partnership, with support from the LEDS Global Partnership Transport Working Group, will offer webinars of selected priority topics identified by participants at this workshop as well as a follow-up training at the Asia LEDS Forum in November 2014 on the topic receiving highest interest (i.e., integrated transportation planning).

8. WORKSHOP EVALUATION RESULTS

The workshop evaluation form was completed by 37 participants, from government, private sector (e.g., BRT operators), academic institutions, and other organizations.

All respondents indicated intent to apply most of lessons learned and tools that they became aware of during this event to support BRT work in their city/country. Lessons learned from the successful BRT systems in China offered the highest application potential (70%). Cost Benefit Analysis (72%) and Road Safety Audits (70%) were the tools participants most planned to apply.

When asked to indicate two topics related to low-carbon transport that the Asia LEDS Partnership should address in the next year, participants expressed that in terms of “Sustainable Transport Elements”, they are interested in Public Transport Management (59%). While in terms of “Techniques”, a majority of participants is interested in Integrated Planning (54%).

Peer knowledge sharing and in-depth training were, by far, the preferred methods to address the above-suggested topics.

A majority of respondents (86%) were not already part of a “community of practice” on transport. Most participants in this group indicated willingness to join the LEDS Global Partnership’s Transport community of practice for Asia.
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