

TRANSPORT INNOVATOR

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Welcome to *Transport Innovator*, a free newsletter dedicated to sharing information about innovative, cost-effective transportation solutions. We welcome comments and ideas for future stories. Please feel free to contact us – we look forward to hearing from you. Free subscriptions are available at www.gobrt.org

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Guest Column

BRT and global climate change

By Lloyd Wright, University College London

The transportation sector represents the fastest growing source of greenhouse gas emissions worldwide. As the global motorised vehicle fleet approaches one billion, the growth in both vehicle numbers and kilometres travelled is simply overwhelming other efforts to reduce greenhouse gas emissions in the transport sector, such as the introduction of cleaner fuels.

Through research published in the December 2005 edition of *Transport Reviews*, bus rapid transit (BRT) was recognised as one of the most cost-effective means for addressing reductions of CO₂ emissions (Wright and Fulton, 2005). When used in conjunction with non-motorised options, such as walking and bicycling, BRT produced emission reduction costs ranging from US\$ 14 to US\$ 66 per tonne of CO₂ reduced. By contrast, scenarios that only focussed on fuel switching to options such as natural gas (CNG), hybrid-electric vehicles, and fuel cells produced costs ranging from US\$ 148 to over US\$ 3,500 per tonne of CO₂ reduced. Only the hybrid-electric scenario came anywhere close to producing a market-competitive reduction cost.



These findings dramatically demonstrate that a magical technological fix to transport emissions is unlikely to appear on the horizon anytime soon. However, the political allure of fuel-based and tailpipe based solutions is undeniable. Political leaders can appear to be doing something about climate change without implying any changes in personal behaviour, such as reducing travel or switching to more sustainable modes.

Real progress in combating transport emissions is likely to be achieved more through simple customer amenities than exotic technologies. Even within BRT efforts, and especially within US-based BRT efforts, the focus can be disproportionately placed upon the vehicle technology rather than the issues that customers care most about: travel time, service frequency, network coverage, comfort, safety, and security. BRT in the context of cities like Bogotá and Curitiba succeeds particularly because simple customer care comes before over-the-top technology that produces poor relative value to the customer.

Low-cost measures, such as BRT and non-motorised options, have largely been left out of early efforts to reduce greenhouse gas emissions. It is possible that simply improving the state of developing-nation footpaths could be one of the most effective long-term measures, both from the perspectives of cost and overall development. However, it is unlikely that any global footpaths initiative is on the horizon anytime soon.



The low-cost solutions that have emphasised BRT, bicycling and walking, and land-use changes in Bogotá and Curitiba are certainly possible elsewhere. Whether the political will exists elsewhere is a question to be answered.

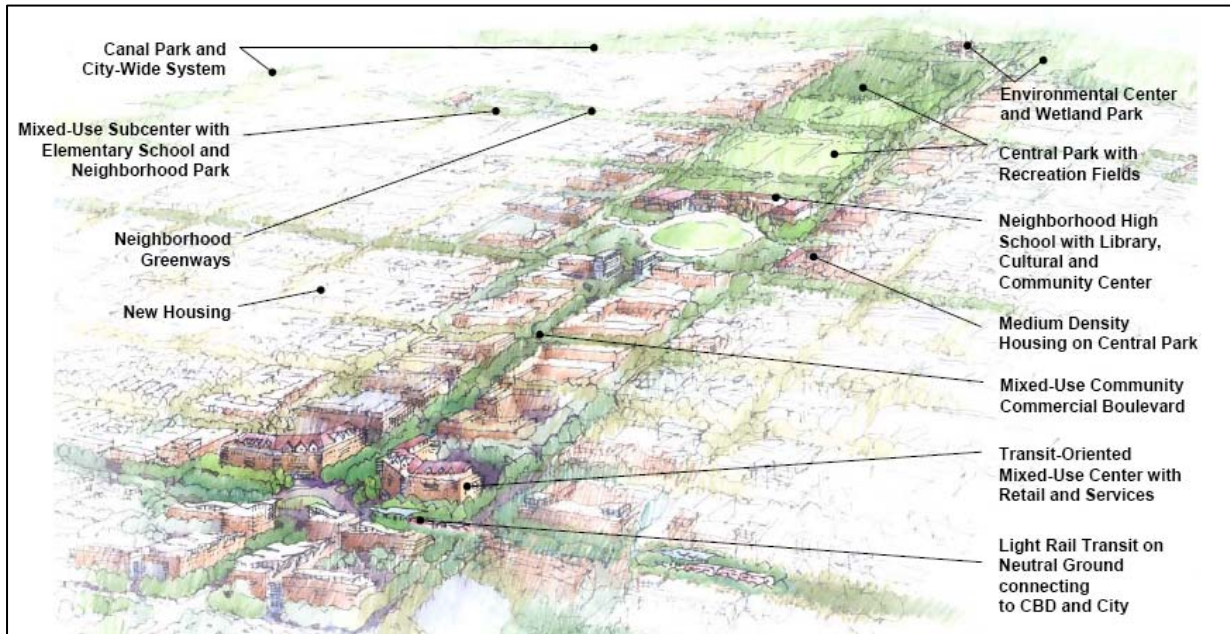
Lloyd Wright is currently a transport researcher at University College London. He was formerly the Latin American Director for the Institute of Transportation & Development Policy, and has held positions on transport and environmental issues with the US Agency for International Development, the International Institute for Energy Efficiency, the US Environmental Protection Agency, and the United Nations.

Transport Innovator welcomes guest columns on any topic related to sustainable transportation. Submissions should be no more than 1-2 pages in length and may include graphic materials. Although we may edit for length and style, we will obtain the author's permission to publish edited columns. Please send all guest columns to info@gobrt.org.

Transport News from the United States

Future Vision for New Orleans transit unveiled; transit ridership growing

On January 11, 2006, the Urban Planning Committee of the Bring New Orleans Back Commission unveiled its vision for the reconstruction of New Orleans, including a vision for a future transit system. As shown below, this vision is based upon mixed-use development around a network of light rail lines. These light rail lines would be fed by a series of bus rapid transit (BRT) routes.



The total estimated cost for the reconstruction plan is at least \$17 billion, according to the Committee. The most expensive portion of the plan is the purchase of heavily damaged and destroyed homes. The second most expensive portion is “public infrastructure/transit,” which the Committee estimates will cost \$4.8 billion. Of the \$4.8 billion, the most expensive project is a light rail system, estimated to cost over \$3.3 billion for 53 miles, or over \$62 million per mile.

The rebuilding plan, including the light rail system, has been characterized as part vision, part wish-list, assembled without detailed cost/benefit analyses. It also has unleashed a heated debate over whether residents should be allowed to rebuild in neighborhoods that may be deemed unsustainable, in part because of a lack of returning residents.

As the debate continues over New Orleans reconstruction, the New Orleans Regional Transit Authority (NORTA) attained its highest one-day transit ridership level since Hurricane Katrina. More than 14,000 passengers traveled on the city’s buses and streetcars on January 9, 2006. Two bus lines had resumed service the previous day, including a cross-town route that serves central business district. The city is served on weekdays by 59 buses and six streetcars, with fewer buses deployed on weekends.

Source:

Passenger Transport, Volume 64, No. 3, 1/16/06
Action Plan for New Orleans, Bring New Orleans Back Commission, available at
<http://www.npr.org/documents/2006/jan/CityPlanningFinalReport.pdf>

Study finds Los Angeles' Orange Line busway improves congestion

Researchers at the University of California-Berkeley Center for Innovative Transportation have found that the new Orange Line Busway improved morning commutes along the adjacent 101 Freeway. Specifically, they found that:

- Traffic speed increased by about seven percent, from an average of 43 mph to 46 mph;
- The time stuck in congestion declined about 14 percent; and
- The morning rush hour began about 10 minutes later.



The researchers believe that the Orange Line has helped remove cars from area roadways, allowing freeway traffic to flow faster and more smoothly. The 14-mile Orange Line busway opened in October 2005. Ridership has more than doubled initial projections, currently standing at about 16,400 passenger boardings per day.

The Orange line has experienced a few collisions with automobiles where the busway intersects with local streets. Adjustments to traffic signals, signage, and other systems are expected to reduce the risk of further collisions.

Sources:

LA Daily News, 12/30/05

http://www.dailynews.com/portlet/article/html/fragments/print_article.jsp?article=3358174

Long Beach Press Telegram, 1/3/06

http://www.presstelegram.com/portlet/article/html/fragments/print_article.jsp?article=3365127

Washington, D.C. to introduce hybrid buses

The Washington Metropolitan Area Transit Authority (WMATA) will introduce 50 new buses in early 2006 as part of its plan to overhaul the Washington, D.C. area Metrobus fleet. The 40-foot New Flyer hybrid diesel-electric buses will emit substantially fewer emissions, including 60 percent fewer nitrogen oxides and 90 percent less particulate matter, hydrocarbons and carbon monoxide.

WMATA will replace 417 buses by summer 2006, reducing the average age of the fleet from more than 10 years to approximately seven years. The transit agency will also initiate procurement for 50 new buses for 2007 delivery.

These improvements are part of a five-year, \$830 million Capital Improvement Program announced in 2005. Other program improvements include new and updated bus

shelters and the introduction of real-time bus information delivered by telephone, internet and displays located at five major bus transit centers.

Sources:

Washington Metropolitan Area Transit Authority news releases, 12/28/05 and 9/22/05
http://www.wmata.com/about/met_news/PressReleaseDetail.cfm?ReleaseID=949
http://www.wmata.com/about/MET_NEWS/PressReleaseDetail.cfm?ReleaseID=1057

Los Angeles debuts 15th Metro Rapid bus line

The Los Angeles Metropolitan Transportation Authority (MTA) has added to its successful Metro Rapid bus line by introducing a fifteenth route along Western Avenue in December 2005.

Also new are red, articulated Metro Liner buses serving passengers along the Western Avenue route. Manufactured by North American Bus Industries (NABI), the 60-foot buses offer 43 percent more seating capacity than standard 40-foot buses. MTA plans to deploy 200 of the new Metro Liners by mid-2006.



MTA's Metro Rapid bus service has met with great success, reducing passenger commute times by an average of 25 percent. MTA attributes this reduction to Rapid's transit signal priority system, fewer stops (stations are located approximately every 0.8 miles versus 0.2 miles for local service) and low-floor bus design.

The Metro Rapid Program first debuted along the Wilshire-Whittier and Ventura Boulevard corridors in June 2000. Twelve additional lines were added between 2002 and 2005. The service generates 140,000 average weekday boardings.

Source:

Metro Rapid News Release, 12/12/05
http://www.mta.net/press/2005/12_December/metro_181.htm

Twin Cities opens highway shoulder lanes to express buses

Minneapolis-St. Paul's Metro Transit has announced that more than 250 miles of highway shoulder lanes are open to the area's regional transit buses to facilitate bus flow during traffic congestion. The express buses will be allowed to travel 15 mph faster than adjacent highway traffic when roads are congested. The new policy was developed

through a partnership among the Minnesota Department of Transportation and regional transit operators, cities and counties.

Source:

Passenger Transport, Volume 64, No. 3, 1/16/06

California fuel cell buses may offer mobile back-up power

Oakland, California's AC Transit is placing four cell-powered buses into revenue service and is considering retrofitting these buses to provide a mobile source of back-up power. During emergencies, the 120 kW fuel cell buses could supply electricity to essential facilities, such as hospitals and nursing homes.



The fuel cell buses are part of AC Transit's Hyroad Hydrogen Fuel Cell Program. The buses are a Van Hool Model A330 modified to incorporate a UTC Power fuel cell. They can attain a maximum speed of 65-70 mph and travel for 350 miles before refueling with hydrogen. Three of the buses will serve passengers along AC Transit routes. The fourth will be used by neighboring SunLine Transit in Thousand Oaks, California.

AC Transit also operates a hydrogen fueling station that produces up to 24 kilograms of hydrogen daily from electrolysis of water. A second hydrogen station, which will produce hydrogen from natural gas, is under development and will fuel the three new fuel cell buses as well as a fleet of light-duty fuel cell cars.

Sources:

New Fuels & Vehicles, 12/22/05 and UTC Power news release, 9/26/05
http://www.utcpower.com/fs/com/bin/fs_com_Page/0.5433.03616.00.html

Orlando's LYNX bus system reports record ridership

Orlando, Florida's LYNX bus system has achieved a record ridership level of 24.7 million customers in FY 2005, an increase of 6% over the prior year. Lynx also achieved an all-time monthly record of 2.2 million riders in August 2005. This is the third year in a row that the transit system has achieved record ridership. LYNX currently operates 62 routes served by 237 buses.

Source:

Passenger Transport, Vol. 63, No 46, 12/21/05

OPUS hybrid bus receives CARB certification

Optima's Opus ISE-series, diesel-electric hybrid bus has received certification for meeting California Air Resources Board's (CARB) emissions standards.

The diesel-electric engines are anticipated to reduce fuel consumption by 20 to 40 percent, depending upon driving conditions. The ISE ThunderVolt® diesel hybrid system is certified at 1.8 g/hp-hr for nitrogen oxides, 0.01 g for particulate matter, 15.5 g for carbon monoxide, the lowest emission diesel-drive system for 30-, 40- and 60-foot models, according to Optima. Production of the ISE-series hybrid buses will begin in 2006.



Source:

Optima Bus Corp news release, 12/19/05
http://www.optimabus.com/news_opus.php?id=0

Search engine Google introduces Transit Trip Planner

The Internet search site Google launched a beta version of its Transit Trip Planner in December 2005. The new on-line planner provides information on public transit routes and scheduling. Initial service provides transit data for Portland, Oregon's Tri-County Metropolitan Transportation District. Google anticipates expanding the service to other cities in the US and throughout the world.

Users enter their specific requirements, such as origin, destination and travel times. The planner then searches public transportation schedules to determine the most efficient itinerary. The service will also compare the cost of each transit trip to the cost of driving the same route, based upon the U.S. Internal Revenue Service business tax deduction for vehicle mileage driven.

To try the service, visit <http://www.google.com/transit>.

Source:

Passenger Transport, Vol. 63, No. 50, 12/19/05

Transport News from Around the World

Mazda encourages Japanese employees to walk to work

In an interesting twist, Automaker Mazda is urging its Japanese employees to walk to work to improve their health and protect the environment. The company offers an "eco-walk commutation allowance" of \$12 each month to certain employees who walk more than 2.5 miles/round trip at least 15 days a month. Employees may take public transit

for a portion of the commute, but must also walk the required distance to receive the allowance.

A similar program was announced by motorcycle manufacturer Yamaha in January 2005. Employees are paid roughly \$10 US each month for walking or bicycling more than 2 km/day, or for taking public transport to work.

Source:

Associated Press, 12/2/05 and Greenbiz, 6/9/05

http://news.yahoo.com/s/ap/20051202/ap_on_bi_ge/japan_mazda

http://www.greenbiz.com/news/news_third.cfm?NewsID=28200&CFID=3592232&CFTOKEN=57435019

Cambridge, England plans guided busway

A guided busway was approved to connect Cambridge city center with Huntingdon. The new busway will be constructed along unused railway lines for part of the route, with buses leaving the busway to operate on public roads in the city center.

The project is expected to help alleviate traffic along the A14 highway corridor, reducing travel times from Swavesey to Cambridge Science Park from an hour to just 13 minutes. Officials expect 20,000 passengers per day within 10 years of opening.

According to Cambridge News, this will be the longest guided busway project in the world. Completion is expected in late 2008.

Source:

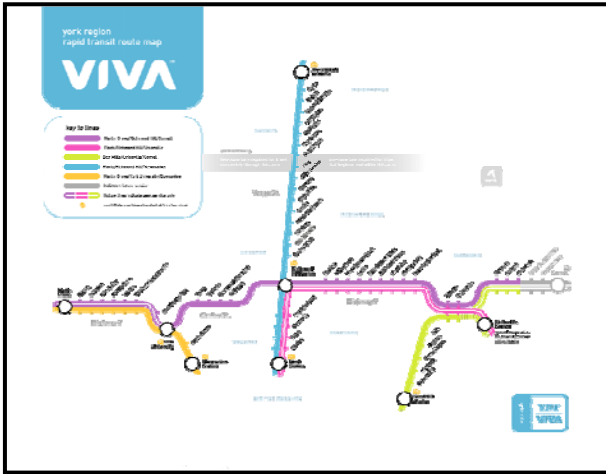
Cambridge Evening News, 12/9/05 and Hunts Post, 12/14/05

http://www.cambridge-news.co.uk/news/region_wide/2005/12/09/e40f6747-ea99-48d8-8be2-e136bd540731.lpf



York Region, Canada bus ridership exceeds expectations

Ridership on both York Region Transit (YRT) and Viva BRT buses has risen significantly over the past year, with 19.5 percent more people riding buses since Viva's debut. The new Viva service was initiated in September 2005.



YRT officials indicate that there are 480,000 new boardings attributable to the new BRT service, which is 30 percent higher than officials had expected. On Yonge St, where Viva's Blue line joins YRT's No. 99 line, overall transit ridership was up 33.9 percent during October 2005. Transit use along Highway 7 has also increased 25.4 percent over last year.

Viva's most recent corridor began service in on January 1, 2006. The six-corridor system employs 25 three-door,

articulated, 60-foot Van Hool AG300 buses and sixty, two-door, 40-foot A330 buses, which are dubbed Rapid Transit Vehicles (RTVs). The buses operate every 5-10 minutes during peak hours and every 15 minutes off-peak. The system was constructed at a cost of \$180 million.

Source:

Toronto Star, 12/20/05

http://www.thestar.com/NASApp/cs/ContentServer?pagename=thestar/Layout/Article_Type1&c=Article&cid=1135032611786&call_pageid=968350130169&col=969483202845

Transmilenio improvements suggested

Bogota, Colombia's Chamber of Commerce recommended improvements to the execution of the third phase of the Transmilenio BRT system. The recommendations address institutional shortcomings that have hampered implementation of earlier phases of the project.

The recommendations include better enforcement of contracts, improving coordination among government agencies involved in construction, and ensuring that older buses are retired instead of moved to other routes.

Source:

Business News Americas, 12/12/05



Mexico State planning high capacity bus system

Mexico State ("Edomex") is conducting feasibility studies for a new, 17-route, exclusive bus lane system to be called Trenbus. Buses would operate in Toluca as well as in the neighboring Mexico City urban area. The system is anticipated to include both trunk and feeder bus routes, high-capacity articulated vehicles, adapted bus stops, and electronic fare cards. Estimated cost is \$3.5 million (US) per bus route. Funding has already been set aside in the State's budget.

Neighboring Mexico City introduced dedicated busways and high capacity buses in 2005.

Source:

Business News Americas, 12/7/05

Transantiago bus routes and tickets pirated

Bus concessionaires for Santiago, Chile's new Transantiago public transit system are reporting daily losses of about \$109,000 (US) from pirating of bus routes and tickets.

The first stage of Transantiago was launched in October 2005. Although Transantiago intended to consolidate bus service, about 400 older buses continue to operate illegally each day. Two concessionaires, Alsacia and Express, plan to file 61 lawsuits against owners of the old buses.



Transantiago also is experiencing a bus fare evasion rate of almost 40 percent, possibly due to counterfeit tickets. Officials anticipate that the problem will be resolved when a new electronic fare card system is introduced in May 2006.

Transantiago is expected to become fully operational in October 2006 when feeder and trunk bus routes will become integrated. A total fleet of 4,700 new, low-emission buses

will be introduced by 2010.

Source:

Business News Americas, 12/23/05 and 1/2/06

10,000 China buses to operate on hydrogen-natural gas fuel

The Hythane Company has signed memoranda of understanding with five major Chinese cities to demonstrate a low-emission vehicle fuel system. The company will convert the fuel systems of up to 10,000 diesel buses to operate on Hythane, a blend of hydrogen and natural gas that produces 50 percent fewer tailpipe emissions than traditional natural gas. Conversion of the buses is anticipated by the start of the 2008 Olympic Games in Beijing.

Hythane-powered buses have already been demonstrated with Montréal, Canada's Société de transport de Montréal (STM) transit system and with SunLine Transit in Thousand Oaks, California.

Source:

New Fuels & Vehicles, 1/3/06

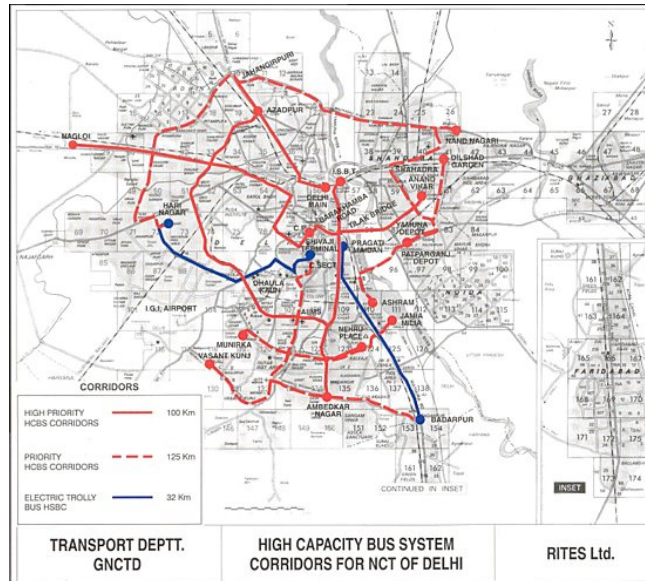
Delhi, India developing BRT and Electric Trolley Bus systems

Delhi, India has selected five BRT corridors for development in the first phase of the city's new BRT system. Two additional corridors also have been selected for implementation of an Electric Trolley Bus System (ETB).

Officials have further identified one corridor each of BRT and ETB for pilot projects.

The first BRT line will be located in the Ambedkar Nagar--Delhi Gate Corridor. The corridor will feature central, dedicated bus lanes, safe pedestrian and commuter movement, and segregation of slow traffic and bicycles. Dedicated space also will be provided for parked vehicles and street vendors.

The BRT system is being planned and designed by RITES, a Government of India enterprise, and the Indian Institute of Technology's Transportation Research and Injury Prevention Program (TRIPP). Construction will begin in January 2006. The city has already placed into service five high capacity buses, built by Tata Motors, and plans to introduce 60 more.



Source:

WebIndia123.com, 12/12/05, The Financial Express, 12/12/05, and Auto Monitor
<http://news.webindia123.com/news/showdetails.asp?id=189153&cat=India>
http://www.financialexpress.com/fe_full_story.php?content_id=111344
http://www.automonitor.co.in/show_article.asp?code=284