

# TRANSPORT INNOVATOR

VOLUME 2, No. 6

November - December 2006

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](http://www.gobrt.org)

## Table of Contents

<i>Editorial</i> .....	2
<i>Guest Column</i> .....	3
<b>Can BRT be as Good at Transit-Oriented Development (“TOD”) as Rail?</b> .....	3
<i>In the Spotlight</i> .....	5
<b>Putting Customers Last: Denver’s New T-Rex LRT Offers a Cautionary Tale</b> .....	5
<i>Bus Rapid Transit and Innovative Bus Service</i> .....	6
<b>US DOT announces application opportunity for Urban Partnership Grants</b> .....	6
<b>Bogotá’s TransMilenio Phase III funded</b> .....	6
<b>Brisbane’s Northern Busway and Airport Link approved</b> .....	7
<b>Atlanta plans elevated bus terminal above I-75</b> .....	7
<b>Mexico City BRT celebrates 100 millionth passenger</b> .....	7
<b>NYC chooses 5 routes for pilot BRT</b> .....	8
<b>Pune, India inaugurates unfinished pilot BRT System</b> .....	8
<b>Opening of Oregon’s first EmX corridor delayed, BRT system expansion planned</b> ... 8	
<b>Chicago area transit agencies advocate for investment, BRT planned</b> .....	9
<b>Boston pursues BRT “Urban Ring” and Phase II of the Silver Line</b> .....	9
<b>Belfast planning BRT system</b> .....	10
<b>BRT proposed from Rock Hill to Charlotte, North Carolina</b> .....	10
<b>New Jersey designing proposed BRT system</b> .....	10
<b>Gatineau, Canada transit evaluation shows BRT yields the most benefit</b> .....	11
<b>Johannesburg approves Bus Rapid Transit for 2010 World Cup</b> .....	11
<b>San Antonio preparing study and design phase for pilot BRT system</b> .....	12
<i>Alternative Fuels</i> .....	12
<b>Toronto and San Francisco order 390 additional hybrid buses</b> .....	12
<b>FTA announces fuel cell bus development funding awards</b> .....	13
<b>More companies join the hybrid bus market, in North America and China</b> .....	13
<b>London unveils hybrid double-decker bus and plans hybrid bus fleet</b> .....	13
<b>Canada receives first hydrogen internal combustion engine (ICE) buses</b> .....	14
<i>Transportation Policy</i> .....	14
<b>UK survey finds 1/3 of shoppers would drive farther to avoid congestion pricing</b> . 14	
<b>King County voters pass Transit Now initiative</b> .....	14
<b>NYC study recommends use of congestion pricing</b> .....	15
<i>Odd but True</i> .....	15
<b>Those smelly cookies</b> .....	15
<b>Smile, or else</b> .....	15

## Editorial

Thank you!

As we wrap up our second year of publication, we want to thank our readers and contributors for helping to make *Transport Innovator* a success. Over 4,600 people from around the globe receive *Transport Innovator*, including planners, transit agencies, public officials, and advocates for better transportation services. Dozens more sign up each month.

Over the past two years, many cities have demonstrated bold leadership on sustainable transportation. The following is just a brief sample:

- The Los Angeles Orange Line became the first full-featured BRT in the United States. It exceeded projected ridership by more than three times and is carrying more passengers than the Gold Line, a nearby light rail that cost more than twice as much to build.
- Bogota's Transmilenio BRT became the world's first public transport system with an approved methodology to sell CO2 emission credits under the Kyoto Protocol's Clean Development Mechanism.
- Mexico City opened Metrobús on Avenida Insurgentes, resulting in 267,000 daily passenger trips and improved traffic flow for cars.
- Seoul, South Korea eliminated an elevated highway to create a riverfront park, high quality walkways, and public squares. The city also added 36 miles of exclusive median bus lanes on congested streets and was honored with a sustainable transportation award in 2006 for its efforts.

This list is a great start, but there is much more work to be done. According to *Mobility 2030*, a report by the World Business Council for Sustainable Development, fossil fuels are projected to be dominant at least through 2050, with gasoline and diesel consumption nearly doubling over year 2000 levels. At the same time, the report projects that the mode share for public transportation will change little over the same 50 year period.

Although the projection is grim, the good news is that it is just a projection. We can achieve a different future, if we choose, by working together to:

- Promote more energy efficient forms of transportation, such as walking, cycling and public transport;
- Make cars cleaner and their use more efficient, including more fuel efficient vehicles, better fuels, more car pooling, and the use of market-based mechanisms, such as congestion pricing;
- Promote alternatives to motorized travel, such as telecommuting;
- Improve land use policies to make urban areas more vibrant and accessible for non-motorized travel; and
- Ensure that limited transportation dollars achieve the greatest benefit possible.

We are working hard to achieve these goals. In the last year, we:

- started a program with the World Bank to promote sustainable transportation in Latin America;
- published a peer-reviewed analysis of the potential CO2 benefits of bus rapid transit in US cities;
- conducted an analysis of the Orange Line BRT, which will be presented at the 2007 Transportation Research Board conference;

- upgraded our free database of BRT and innovative bus projects that includes detailed information on 86 cities;
- co-sponsored two days of BRT educational events in Seattle;
- presented at numerous conferences and meetings around the world; and
- conducted a number of other activities to promote sustainable transportation policies and technologies.

We hope that *Transport Innovator* continues to provide ideas and inspiration for those seeking sustainable transportation options. Thank you again for making our first two years a success. Please feel free to contact us with feedback, story ideas, or anything else you would like to share.

---

## Guest Column

### **Can BRT be as Good at Transit-Oriented Development (“TOD”) as Rail?**

By Professor Graham Currie

A casual reader on Transit Oriented Development (TOD) might well be forgiven for thinking that railways have exclusive opportunities for patronage development using TOD. The limited planning literature associates bus with less successful TOD programs, usually as part of bus station or low density development. Recently, however, TOD has been identified as a key success factor in BRT systems.

Research at Monash University in Australia sought to objectively identify TOD strengths and challenges of bus and BRT compared with rail transit. A major finding was that urban heavy rail systems have considerable strengths relative to low frequency suburban bus systems. Key rail strengths are:

- The rail industry has high staff levels and experience in TOD programs.
- Rail service frequencies, operating spans and speeds, and major service quality features are generally higher than that provided by suburban bus.
- Urban density generally is higher in areas with rail service than with suburban bus service.
- Quality pedestrian access and reduced exposure of pedestrians to noise and pollution are more common with rail stations than bus stations or stops.

Indeed there is a strong perception, amongst the development industry in particular, that railways represent permanence and a higher commitment to urban redevelopment than a comparable suburban bus route. Moreover, buses often are ‘stigmatised’ relative to rail due to older, diesel exhaust spewing vehicles, poor relative ride quality, an association of bus with low service levels and a view, particularly held by the development community, that buses are ‘lower order’ and ‘poor quality’ transit.

Nevertheless, local bus does have TOD strengths relative to urban rail. The sheer scale of coverage of bus systems is substantially higher than rail systems in many western cities. Research in San Francisco showed that 246 bus TOD’s caused greater reductions in automobile travel than the 82 rail TOD’s did. Although each bus TOD had less impact individually than each rail TOD, there were so many more bus TOD’s that some 60% of total benefits came from bus, not rail.

The research found that buses have a strong role to play in spreading TOD benefits on a city wide basis. It is a simple fact that rail will never be able to cover all of our cities. Buses are very cost effective, flexible transit systems that can adapt to changing and expanding urban environments.

Also, buses can provide a range of TOD densities, whereas rail systems typically require high densities. Consumers of TOD do not always want the higher densities associated with rail. Providing a wider range of 'choice' of densities for TOD consumers may be a particular benefit of bus TOD.

The research also considered BRT strengths and weakness relative to heavy rail. One of the major challenges is the lack of a track record and poor TOD planning capabilities regarding BRT. The Ottawa busways and South American BRT systems are good examples of TOD potential, but the strength of planning laws and urban densities in these countries are not generally relevant to US or Australian contexts.

On the other hand, BRT systems share the TOD strengths that suburban bus has relative to rail, including:

- Flexibility, choice and the ability to cover a much wider metropolitan area;
- The ability to operate BRT at substantially higher frequencies than heavy rail;
- Cost effectiveness, which enables much more BRT to be deployed for a given budget;
- The ability to give more passengers a "one-seat" ride and thus reduce travel times. Because BRT vehicles are not limited to operating on the guideway, transfers can be avoided. Recent BRT research identified that the average penalty for a bus-rail transfer is valued at 13 minutes of travel time (19 minutes for bus-light rail). This a substantial saving which a BRT project might provide compared to rail.



**Brisbane's Queen Street Mall is a vibrant, pedestrian facility surrounded by TOD and served by an underground station on the SouthEast Busway.**

Overall, however, the research suggested that most BRT systems would tend to be challenged relative to rail systems due to lack of track record and poor TOD industry capabilities. However, the research also suggested that BRT could outperform equivalent rail TOD if carefully designed.

For example, the adoption of modern, new look rail type BRT vehicles can act against the challenge of 'bus stigmatisation.' BRT stations with grade separated pedestrian and BRT vehicle access could be as attractive places to live and work as railway stations, particularly if noise and pollution are addressed with alternative fuels and good design. If these challenges are carefully addressed, rail TOD could struggle against the flexibility, frequency,

transfer free, choice and cost effectiveness strengths of well-designed BRT.

For more information on the research undertaken in this project see:  
Currie G (2006) 'Bus Transit Oriented Development – Strengths and Challenges Relative to Rail,'  
Journal of Public Transportation, Volume 9, No. 4, 2006  
[www.nctr.usf.edu/jpt/pdf/JPT%209-4%20Currie.pdf](http://www.nctr.usf.edu/jpt/pdf/JPT%209-4%20Currie.pdf)

Currie G (2005) "The Demand Performance of Bus Rapid Transit" Journal of Public Transportation  
pp 41-55, Volume 8 No.1 2005  
[www.nctr.usf.edu/jpt/pdf/JPT%208-1%20Currie.pdf](http://www.nctr.usf.edu/jpt/pdf/JPT%208-1%20Currie.pdf)

Professor Graham Currie is the Professor and Chair in Public Transport at the Institute of Transport Studies, Monash University, Melbourne Australia. Web site: [civil.eng.monash.edu.au/about/staff/gcurrie](http://civil.eng.monash.edu.au/about/staff/gcurrie)

---

*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](mailto:info@gobrt.org).

---

## *In the Spotlight*

### **Putting Customers Last: Denver's New T-Rex LRT Offers a Cautionary Tale**

Denver's 19-mile, \$880 million T-Rex light rail opened last month with great fanfare and promises of better commutes. Now, the Regional Transit District (RTD) is apologizing to commuters, giving discounts for monthly transit passes, handing out free Starbucks coupons, and promising to do better in the future. What happened?

According to reports in the Denver Post and the Rocky Mountain News, the issue appears to be that T-Rex has made commuting times significantly longer for many RTD customers. Prior to light rail, many commuters enjoyed one-seat, express bus service that provided a direct connection between their community and downtown Denver. Now, those express buses have been eliminated and replaced with local buses that feed LRT at the Nine Mile and Lincoln stations, followed by more than a dozen station stops prior to reaching downtown, and in many cases followed again by a transfer to another bus.

The elimination of the express bus service has caused an "unprecedented level" of customer complaints, according to an RTD spokesperson. Travel times have increased by as much as an hour each way, and some people are returning to driving or carpools, according to media reports. One RTD board member reported a 10-fold increase in customer complaints since light rail opened, and another acknowledged that customers were receiving "shoddy treatment."

If customer service is a high priority, it would appear that RTD should eliminate the multiple transfers among modes and reinstate the popular express bus service. But RTD apparently has ruled this out, at least for now. Why? According to media reports, because having sunk \$880 million into light rail, RTD cannot afford to reinstate the more popular express bus service.

RTD claims that adjusting bus schedules will improve travel times. Perhaps, but no amount of fine-tuning can eliminate the transfer delays introduced by the new LRT system.

RTD also claims that most passengers will receive better service as a result of light rail, mainly because thousands of service hours have been added to Southeast corridor, where previously there had been limited service. Although light rail obviously adds a new service in the corridor, this service could have been provided instead by express bus or perhaps bus rapid transit, which apparently is more popular among passengers and certainly much less expensive.

It is an unfortunate fact that the commute mode share for public transportation has been steadily declining for decades throughout the United States. According to the 2000 census, just 4.3 percent of workers in Denver used transit for commuting in 2000. If we continue putting customers last, we should expect this trend to continue.

---

## Bus Rapid Transit and Innovative Bus Service

### **US DOT announces application opportunity for Urban Partnership Grants**

On Friday, December 8, the US Department of Transportation announced that it intends to award grants to cities that enter into Urban Partnership Agreements (UPA) with the Department. The UPA process is a result of the Department's congestion mitigation strategy released earlier this year. Cities with UPA's would be expected to "demonstrate strategies with proven effectiveness" in fighting traffic congestion in four specific areas:

- Congestion pricing or variable tolling;
- Bus rapid transit (BRT), express bus, or other "innovative commuter transit services;"
- Telecommuting;
- Technological and operational approaches to improving system performance.

Applications are due by April 30, 2007 and selections are expected by August 8, 2007. A copy of the notice is available at: [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2006\\_register&docid=E6-20924](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2006_register&docid=E6-20924)

### **Bogotá's TransMilenio Phase III funded**

Colombia's central government and the city of Bogotá have committed to fund the third phase of Bogotá's TransMilenio BRT. The \$659 million in government funding, derived in part from a gasoline sale surcharge, will go toward development of about 20 km of trunk roads along Calle 26, Carrera Séptima and Carrera Décima. Bogotá officials and the central government will also seek funding for an additional 280 km of TransMilenio busway along the city's trunk roads. Work is anticipated to begin in 2007 with completion in December 2009.



TransMilenio Phase I began in 2000 with three 42-km trunk corridors. The second phase opened in December 2003 and includes three trunk corridors totaling 43 km in length.

According to TransMilenio, the average travel time in Bogotá prior to BRT was over an hour, with 95% of the road network filled with private cars transporting just 19% of the city's population. With TransMilenio, travel times have been reduced by 32%, tailpipe emissions have declined by 40% (more than 2,109 public service vehicles were scrapped), and accident rates have been lowered by 90% in the corridors where the system operates.

News source: <http://www.bnamericas.com/story.jsp?sector=5&noticia=372312&idioma=|>  
For additional information see the TransMilenio web site:  
[http://www.transmilenio.gov.co/transmilenio/home\\_english.htm](http://www.transmilenio.gov.co/transmilenio/home_english.htm)

## Brisbane's Northern Busway and Airport Link approved

Brisbane's Northern Busway and Airport Link (a primarily underground toll road) have been approved and are projected to reduce traffic on northside roads by up to 45 percent, as well as significantly reduce travel time to and from the airport.

The Queensland government will fund construction of the Northern Busway while the Airport Link will be delivered through a Public Private Partnership. Northern Busway construction could begin in 2008 with the first stage in use by 2010. Airport Link construction could begin in 2008 and be open to traffic in 2012.

Core sections of Brisbane's TransLink busway network are already in place, with the South East Busway and Inner Northern Busway already operational. Additional TransLink projects are in construction or detailed planning stages, including Eastern Busway, Boggo Road Busway and extensions to the Inner Northern Busway.



For additional information see the Queensland government press release, <http://statements.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=48374> and the TransLink busway web page, <http://www.translink.com.au/qt/translin.nsf/index/TransLinkBusway>

## Atlanta plans elevated bus terminal above I-75

Georgia Transportation officials are planning to construct a \$93 million bus terminal along I-75 in Cobb County, one of five terminals in a proposed \$600 million, 15-mile BRT system that would operate along the I-75 freeway. The 75,000-foot station – almost the size of two football fields - would feature two covered passenger areas connected by passenger bridge to a parking deck located beside the highway. Two smaller BRT stations would also be elevated above the I-75 median, and two stations would be located beside the freeway. Officials hope to connect the I-75 BRT system with a second bus line that would operate along I-285. Planners anticipate completion of the I-75 BRT system and stations within ten years.

News source:

<http://www.ajc.com/metro/content/metro/cobb/stories/2006/11/01/1101station.html?imw=Y>

## Mexico City BRT celebrates 100 millionth passenger



On November 16, the Mexico City BRT system, Metrobús, carried its 100 millionth passenger. Launched just a year-and-a-half prior (June 2005), Metrobús currently moves 263,000 daily passengers along Avenida Insurgentes, a 20-kilometer busway that is one of the world's longest city avenues. Using dedicated lanes and 97 new, articulated, high-capacity diesel buses (which replace hundreds of old, dirtier buses), buses attain an average speed of 19 kilometers/hour, reducing travel times by half, according to Metrobús.

News source:

[http://news.yahoo.com/s/usnw/20061116/pl\\_usnw/mexico\\_city\\_bus\\_rapid\\_transit\\_system\\_celebrates100\\_millionth\\_passenger\\_innovative\\_system\\_cuts\\_travel\\_times\\_and\\_exposure\\_to\\_poll](http://news.yahoo.com/s/usnw/20061116/pl_usnw/mexico_city_bus_rapid_transit_system_celebrates100_millionth_passenger_innovative_system_cuts_travel_times_and_exposure_to_poll)

### **NYC chooses 5 routes for pilot BRT**

Five routes have been chosen for New York City's pilot BRT program, with one BRT route located in each of the city's five boroughs. Implementation of first two routes is anticipated in late 2007, with the remaining three corridors to become operable in 2008.

The new BRT system will initially operate with existing New York City Transit (NYCT) buses, but officials are purchasing low-floor, articulated buses for use in some of the BRT corridors. The new bus system will be branded with a distinctive, consistent design that unifies the various BRT elements, which include bus lanes, stations, and traveler information to allow customers to easily identify BRT routes. A contactless fare media for on-board fare collection is being explored for future application, with selected BRT stations being considered for an off-board fare collection system.

For more information see the Metropolitan Transportation Authority's web page, <http://www.mta.info/mta/planning/brt/projectupdate.htm>

### **Pune, India inaugurates unfinished pilot BRT System**

On December 3, the Pune Municipal Corporation (PMC) inaugurated its Bus Rapid Transit System (BRTS) pilot project, the first in India. Although the 13-km project is still under construction, the agency began operations on a completed half of the Swargate-Katraj dedicated busway on the Pune-Satara Road. The first five of the BRT system's 15 Volvo buses will operate on the dedicated bus lanes that are completed, and will operate in mixed traffic where the work is still on-going. Minister for Urban Development Jaipal Reddy promised an additional Rs 500 crore for additional routes at the inaugural event.

According to local news reports, the BRTS launch attracted great interest from commuters and nearby residents. Buses were full at midday, when regular buses are mostly empty. Passengers and drivers expressed approval of the vehicle comfort, seating capacity, and ease of boarding.

However, there were some start-up problems, such as traffic snarls due to the continuing work on the busway. Moreover, a pedestrian was killed by a minibus, and both were illegally on the busway. Service resumed the following day with greater enforcement of busway restrictions.

News sources: <http://in.news.yahoo.com/061203/48/69yea.html>, <http://in.news.yahoo.com/061128/48/69t9s.html> and <http://in.news.yahoo.com/061205/48/6a1ar.html>

### **Opening of Oregon's first EmX corridor delayed, BRT system expansion planned**

Oregon's Lane Transit District (LTD) has postponed the opening of the new EmX BRT system until January 14, 2007. The system, which will connect downtown Eugene and downtown Springfield along a four-mile route, was slated to debut in mid-December 2006 but delivery of the six 60-foot, hybrid-electric buses was delayed by the supplier. LTD pushed back the opening date to give drivers enough time to learn how to operate the articulated vehicles.

EmX buses will travel along exclusive transitways for about 60 percent of the route and will employ signal priority or queue jumpers when in mixed traffic to give the BRT vehicles priority at



intersections. LTD believes that as congestion increases over the next several years, traveling on EmX will be as fast, if not faster, than traveling by car. The trip is expected to take 16 minutes, a six minute improvement over the current bus service. Total cost of the corridor is \$24 million (\$6 million/mile).

LTD also approved plans for a six-mile expansion of EmX along the Pioneer Parkway Corridor, which will extend the rapid transit service from Springfield Station to the Gateway and RiverBend areas of northern Springfield. The cost of the

extension is estimated at \$37 million. The new corridor will be operational in 2008.

The pending EmX system has already begun to spur interest in real estate along the first corridor. The Register-Guard newspaper reported that a real estate offering of 20 acres in Springfield's North Gateway area generated significant interest due to its proximity to the EmX route.

News sources:

<http://www.dailymerald.com/media/storage/paper859/news/2006/11/02/News/Opening.Of.Ltds.Ne.w.Emx.Rapid.Transit.System.Postponed.Until.2007-2434894.shtml?noreferrer=200611170952&sourcedomain=www.dailymerald.com>,

<http://www.dailymerald.com/media/storage/paper859/news/2006/11/16/News/Ltd-Approves.Plans.For.Emx.Expansion-2464204.shtml?noreferrer=200611170953&sourcedomain=www.dailymerald.com> and

<http://www.registerguard.com/news/2006/12/05/d1.bz.realestate.1205.p1.php?section=business>

For additional information see LTD's EmX web page:

<http://www.ltd.org/search/showresult.html?versionthread=d38519362672c662c61a9300c1dd78be>

### **Chicago area transit agencies advocate for investment, BRT planned**

Chicago area transit agencies RTA, CTA, Metra and Pace, have unveiled the "Moving Beyond Congestion Initiative" a draft long-term strategic plan to address the financial needs facing public transit in northeastern Illinois. The plan calls for \$57 billion in new capital funding over 30 years and \$300 million annually in new operating funding to maintain, enhance and expand the region's public transportation systems. Projects proposed for funding include several BRT lines.

Pace, a transit agency serving suburban Chicago, has already developed a "Vision 2020" plan, which envisions a 480-mile network of BRT on 23 corridors throughout northeastern Illinois using Transit Signal Priority, queue jump lanes, use of shoulder lanes and ramp metering. Federal funding has already been earmarked for two BRT lines -- the Cermak Road BRT and the South Suburban BRT Mobility Network Project.

For additional information see the Pace web site: [http://www.pacebus.com/sub/vision2020/brt\\_video.asp](http://www.pacebus.com/sub/vision2020/brt_video.asp), <http://www.pacebus.com/sub/vision2020/vnewsletters.asp> and [http://www.pacebus.com/sub/vision2020/federal\\_projects.asp](http://www.pacebus.com/sub/vision2020/federal_projects.asp)

### **Boston pursues BRT "Urban Ring" and Phase II of the Silver Line**

The Massachusetts Bay Transportation Authority (MBTA) is beginning the public review process for Phase 2 of its proposed Boston "Urban Ring" BRT system. Phase I included new limited-stop cross-town buses. Phase 2 will be a series of BRT routes through the 15-mile long, one-mile wide Urban Ring corridor circling Boston. The MBTA reports that BRT travel speeds will be enhanced by dedicated lanes, exclusive roadway segments, and traffic signal priority where appropriate. The

proposed Phase 3 of the Urban Ring would preserve the BRT routes, but would add rail service to the western portion of the corridor.



**The Silver Line's Courthouse Station**

Additionally the Federal Transit Administration (FTA) has approved preliminary engineering for Phase III of Boston's Silver Line BRT. The Phase III section will be a one-mile tunnel under downtown Boston, which will connect the completed sections - Silver Line Washington Street Phase 1 service (Dudley Square to downtown) and Silver Line Waterfront Phase 2 (South Station to Logan International Airport). The federal government may provide about \$700 million in funding for the \$1.2 billion Phase III project, if it gets final approval.

News sources: [http://www.mbta.com/projects\\_underway/urbanring.asp](http://www.mbta.com/projects_underway/urbanring.asp) and [http://www.boston.com/news/local/articles/2006/12/05/silver\\_line\\_gets\\_boost\\_toward\\_us\\_funding/](http://www.boston.com/news/local/articles/2006/12/05/silver_line_gets_boost_toward_us_funding/)

### **Belfast planning BRT system**

Belfast, Ireland is evaluating various options for a new rapid transit system. Current plans call for a pilot BRT system operating along an abandoned rail line to connect Dundonald and Belfast's city center. The BRT will also link the city center to the new Titanic Quarter development, George Best City Airport and the Belfast Harbor retail area. A consultant is being sought to develop a business case for BRT and assess alternative options.

News source: <http://www.transportbriefing.co.uk/story.php?id=3473>

### **BRT proposed from Rock Hill to Charlotte, North Carolina**

A two-year, \$1 million study commissioned by the Rock Hill Fort Mill Area Transportation Study Group has recommended that a BRT route would best serve commuters traveling from Rock Hill to Charlotte, North Carolina. The route would entail dedicated lanes located along a widened Highway 21 from downtown Rock Hill to I-485 in downtown Charlotte. A Master Plan will be developed for the corridor, and sites will be chosen for stops and park and ride lots. About 30,000 commuters currently travel between the two cities.

News sources: <http://www.fortmilltimes.com/local/story/6172669p-5399037c.html> and [www.charlotte.com](http://www.charlotte.com)

### **New Jersey designing proposed BRT system**

New Jersey officials are beginning preliminary plans for a 34-mile BRT route that would run parallel to Rt. 1 in the Trenton-Princeton area of Northern New Jersey. An alternatives analysis found that a BRT system could add 17,000 to 19,000 daily transit trips to this corridor, while eliminating 11,000 to 12,000 automobile trips. While still in the early design stage, the proposed system would include dedicated guideways, 22 BRT stations, 5 park & rides in New Jersey and 2 in Pennsylvania. The BRT line may run alongside an existing 2.8 mile train service, the Dinky, which is popular with Princeton area commuters. Preliminary plans also envision feeder bus routes connecting the core BRT stations with outlying communities. Total capital costs for such a system are estimated at \$668 (in 2004 dollars). Funding is not yet in place.

News sources: <http://www.nj.com/news/times/index.ssf?/base/news-2/1164776904208320.xml&coll=5> and <http://www.nj.com/news/times/index.ssf?/base/news-2/1164603916138820.xml&coll=5>

## Gatineau, Canada transit evaluation shows BRT yields the most benefit

A new report evaluating transit alternatives for the city of Gatineau (Ottawa, Canada) found that the planned Rapibus busway is the best choice, providing the highest benefit-to-cost ratio when compared with light rail, commuter trains and reserved bus lanes. The proposed 17-km busway, which will cost \$424 million to build and operate over 30 years, was estimated to produce \$962 million in benefits -- 2.27 times greater than the cost. According to the study, the cost of light rail would exceed the benefits (light rail would cost \$879 million yet yield only \$756 million in benefits). The value of the benefits from conventional reserved bus lanes and commuter trains would be about equal to the cost of such services. Rapibus is expected to reduce congestion on bridges and downtown streets. Construction will begin in 2008 and completion is anticipated in 2010.



News sources: <http://www.canada.com/ottawacitizen/news/story.html?id=e871d4f7-3059-4de4-a4bb-45547ae365cc&k=74330>

## Johannesburg approves Bus Rapid Transit for 2010 World Cup

City officials in Johannesburg, South Africa have approved a Bus Rapid Transit system, to be built in time for the 2010 World Cup. The system is expected to cost about 2 billion rand (about US\$282 million) and will be the first unsubsidized public bus system in South Africa. City officials said they were taking advantage of the 2010 deadline to address long-standing transportation problems in the city.



The first phase of the BRT system is expected to be operational by April 2009. The system will use 18m articulated vehicles running from 5:00 a.m. to midnight and will be operated by private contractors to the city. The BRT system will also make use of feeder systems and will link with existing rail stations. The city's goal is eventually to have the bus route accessible to 85% of the city's population.

The BRT will be part of "Rea Vaya Joburg," the city's plan to address growing traffic congestion. Rea Vaya ("we are going") will feature 325-km of special public transport lanes and intersections, and 40 transport interchange nodes where commuters can switch from one mode of transport to another.

For additional information see news articles at and the City of Johannesburg/Johannesburg News Agency website: [http://www.joburg.org.za/2006/nov/nov30\\_reavaya.stm](http://www.joburg.org.za/2006/nov/nov30_reavaya.stm) and [http://www.joburg.org.za/2005/dec/dec19\\_vaya.stm](http://www.joburg.org.za/2005/dec/dec19_vaya.stm)

## **San Antonio preparing study and design phase for pilot BRT system**

The San Antonio transit agency, VIA Metropolitan Transit, will start the initial study and design phase for a proposed BRT pilot project next year, with hopes of opening the system by 2012. Planners want to construct an 8-mile line from downtown University of Texas at San Antonio to a future transfer center at the Medical Center, with a dedicated busway for part of the line. Planners estimate the project will cost \$95.4 million. The agency has set aside local funding, but will be seeking additional commitments, especially federal funding.

New sources: <http://www.viainfo.net/Community/PlanningInitiatives.aspx> and [http://www.mysanantonio.com/news/metro/stories/MYSA120106.08B.next\\_via\\_chair.2ecfed6.html](http://www.mysanantonio.com/news/metro/stories/MYSA120106.08B.next_via_chair.2ecfed6.html)

## **Wilshire Rapid Express bus service approved**

The Los Angeles Metro Board of Directors has approved a new Metro Rapid bus service, the Wilshire Rapid Express, which could become operational as early as June 2007. The buses will serve the Wilshire corridor, one of the most heavily traveled bus corridors in the city (60,000 daily boardings, 45,000 on Metro Rapid buses). Wilshire Rapid buses will provide express rush hour service between downtown Los Angeles and Santa Monica, stopping at seven of the 21 stations located along the route.

Metro Rapid introduced the first line in June 2000, and the city is now served by 16 Rapid Bus lines. The seventeenth, Reseda Rapid, will become operational in mid-December 2006. Metro Rapid service features unique bus and station branding, frequent service, high-capacity buses along selected routes, and the use of signal priority at intersections.

News sources: [http://www.mta.net/news\\_info/press/Metro\\_210.htm#TopOfPage](http://www.mta.net/news_info/press/Metro_210.htm#TopOfPage) and <http://abclocal.go.com/kabc/story?section=local&id=4833190>

## **Alternative Fuels**

### **Toronto and San Francisco order 390 additional hybrid buses**

DaimlerChrysler announced that it has received two hybrid bus orders totaling 390 buses. The Toronto Transit Commission is purchasing 360 buses from options in its original contract, bringing the agency fleet to 510, the second largest in North America after New York City. San Francisco Muni also exercised a purchase option and will receive an additional 30 hybrids, bringing its total to 86. All these Orion VII hybrids feature BAE Systems' series hybrid drive. The Toronto buses will be built on the Orion VII Next Generation vehicle platform that begins production in mid 2007.

The National Renewable Energy Laboratory (NREL) recently published the results of their year-long evaluation of New York City Orion VII hybrid and CNG buses, as well as some older diesel buses. The hybrids showed highest average fuel economy in the studied service. The evaluation also found that the average total maintenance cost during the first two years of service was 5 percent lower for the hybrid buses than the CNG buses. NREL noted that this was not enough time to understand the full life cycle costs of these buses, particularly the hybrids' battery replacement costs.

News sources: <http://www.dcbusna.com/dcbusna/0-866-621715-1-647243-1-0-0-0-1-10578-575577-0-0-0-0-0-0.html> and <http://biz.yahoo.com/bw/061130/20061130005753.html?v=1>

## FTA announces fuel cell bus development funding awards

In October, the U.S. Federal Transit Administration (FTA) announced the awards for its four-year, \$49 million National Fuel Cell Bus Technology Development Program. Fourteen projects were selected through a competitive process. Projects will be managed through three regional non-profit organizations, and project partners must provide at least a 50% match to the government funding. The projects will lead to development of around 11 new fuel cell buses, either full-size or shuttle buses, and using a variety of drivetrain configurations, from conventional fuel cell hybrid to battery-dominant hybrid. Buses will be tested and/or demonstrated in California, Massachusetts, New York, Washington D.C. and several southern cities.



FTA Administrator announcing fuel cell bus awards at SunLine Transit (courtesy FTA)

The list of projects includes one by the editor of this newsletter, a comprehensive survey of fuel cell bus demonstrations operating around the world from 2002 through 2007.

A full list of projects can be found at the FTA's website: [www.fta.dot.gov/regional\\_offices\\_5825.html](http://www.fta.dot.gov/regional_offices_5825.html)

## More companies join the hybrid bus market, in North America and China

Bus companies IC Corporation and Nova Bus have both joined the commercial hybrid bus market. IC Corporation announced a new line of commercial hybrid buses equipped with Enova Systems Inc.'s parallel hybrid drive. IC is already developing up to 19 plug-in hybrid school buses with Enova as part of a pilot program in eleven US states. Nova Bus, a subsidiary of Volvo, launched its new hybrid bus featuring the GM Allison parallel hybrid drive.

AFV Solutions, a US energy company, announced that it had entered into a joint venture agreement to manufacture hybrid, CNG and LNG buses in China. AFV will work with Chinese vehicle manufacturer Baolong Company to manufacture and sell the clean fuel buses.

News sources: [http://www.ic-corp.com/site\\_layout/news/newsdetail.asp?id=801](http://www.ic-corp.com/site_layout/news/newsdetail.asp?id=801), [http://www.ic-corp.com/site\\_layout/news/newsdetail.asp?id=772](http://www.ic-corp.com/site_layout/news/newsdetail.asp?id=772), <http://www.enovasystems.com/index.cfm?section=News&linkID=25&newsID=32>, [http://www.novabus.com/pages/Nouvelles/sainteustache\\_quebec\\_le\\_7\\_novembre\\_2006.aspx?lang=EN-CA](http://www.novabus.com/pages/Nouvelles/sainteustache_quebec_le_7_novembre_2006.aspx?lang=EN-CA) and [http://www.automotive-business-review.com/article\\_news.asp?guid=ED8653CB-4384-44DC-88E3-5776CC33E22D](http://www.automotive-business-review.com/article_news.asp?guid=ED8653CB-4384-44DC-88E3-5776CC33E22D)

## London unveils hybrid double-decker bus and plans hybrid bus fleet

In October, London mayor Ken Livingstone unveiled the world's first double-decker hybrid-electric bus and announced a program to expand the city's hybrid fleet. Built by Wrightbus, the double-decker uses lithium-ion batteries and a 1.9 liter engine. A conventional double-decker uses a 7-liter engine. The double-decker hybrid joins a fleet of six "single-deck" hybrids by Wrightbus that have been operating since February.

Mayor Livingstone announced plans to have 40 hybrid buses in London by March 2008, from various suppliers, both single and double deck. Starting in 2012, the mayor wants every new fleet vehicle to be a hybrid, which would mean adding 500 hybrid buses a year. Earlier this year the mayor also announced his intent to add 70 hydrogen vehicles to London fleets by 2010. To

kick off this effort, London's transport agency began the procurement process for ten new hydrogen buses.

News sources: [http://www.guardian.co.uk/uk\\_news/story/0,,1931553,00.html?gusrc=rss&feed=11](http://www.guardian.co.uk/uk_news/story/0,,1931553,00.html?gusrc=rss&feed=11),  
[http://www.wansteadandwoodfordguardian.co.uk/display.var.1010465.0.green\\_buses\\_are\\_coming.php](http://www.wansteadandwoodfordguardian.co.uk/display.var.1010465.0.green_buses_are_coming.php),  
[http://www.greencarcongress.com/2006/10/mayor\\_of\\_london.html](http://www.greencarcongress.com/2006/10/mayor_of_london.html) and  
[http://www.greencarcongress.com/2006/02/mayor\\_of\\_london.html](http://www.greencarcongress.com/2006/02/mayor_of_london.html)

### **Canada receives first hydrogen internal combustion engine (ICE) buses**

The Canadian Senate in Ottawa took delivery of three hydrogen internal combustion engine shuttle buses from Ford of Canada. Ford of Canada is producing seven more hydrogen shuttle buses for other regions of Canada. The buses will replace conventional gas-powered shuttle buses in every day use. The federal government is providing CN\$4.2 million toward the hydrogen ICE Shuttle Bus Demonstration Project, as part of a Hydrogen Early Adopters program to demonstrate hydrogen buses in real-world conditions. Ford reports that hydrogen fueled internal combustion engines have all-weather capability, near-zero emissions of regulated pollutants and greenhouse gases, and high efficiency; they can also easily can be hybridized to further improve efficiency.

News source: Energy Washington Week, December 7, 2006

## *Transportation Policy*

### **UK survey finds 1/3 of shoppers would drive farther to avoid congestion pricing**

A study by the RAC Foundation automotive association and the British Retail Consortium (BRC) has found that one third of shoppers would drive to a different town to shop rather than pay a congestion pricing charge of £5. Twenty-seven percent indicated they would use transit rather than drive, and 21 percent would make fewer shopping trips. Based on the study, the RAC Foundation has recommended that UK authorities either lower or eliminate off-peak congestion charges to prevent shoppers from driving farther in order to avoid congestion fees.

Congestion pricing involves charging a fee to the operators of private vehicles in order to access certain roadways during peak travel hours in order to reduce traffic congestion and increase transit use. Such schemes are already in place during weekdays in central London, along a roadway in Durham, and on a section of the M6 highway in Birmingham. Several other UK cities and towns are considering congestion pricing.

News source: [http://today.reuters.co.uk/news/articlenews.aspx?type=motoringNews&storyID=2006-12-04T073407Z\\_01\\_NOA427130\\_RTRUKOC\\_0\\_BRITAIN-MOTORING-CONGESTION.xml&WTmodLoc=NewsLanding-C10-Motoring-2](http://today.reuters.co.uk/news/articlenews.aspx?type=motoringNews&storyID=2006-12-04T073407Z_01_NOA427130_RTRUKOC_0_BRITAIN-MOTORING-CONGESTION.xml&WTmodLoc=NewsLanding-C10-Motoring-2)

View the report at

[http://www.racfoundation.org/index.php?option=com\\_content&task=view&id=412&Itemid=31](http://www.racfoundation.org/index.php?option=com_content&task=view&id=412&Itemid=31)

### **King County voters pass Transit Now initiative**

In November's general election, King County, Washington voters passed a 0.1 cent sales tax increase to fund Transit Now, a new, four-point initiative that will increase King County Metro Transit service. The initiative, which received more than 56 percent of the vote, will raise \$50 million annually and provide 18 million to 21 million more annual rides within ten years. The plan is comprised of both new and improved bus services, including a new RapidRide enhanced bus

service along five major corridors. Transit Now aims to get 50,000 to 60,000 drivers off the road and into buses each weekday.

News source: Passenger Transport, Volume 64, No. 45  
(November 13, 2006)

For additional information see King County, Washington's web page: <http://www.metrokc.gov/kcdot/transitnow/about.stm>



### **NYC study recommends use of congestion pricing**

Traffic congestion is costing New York City and its suburbs more than \$13 billion and up to 52,000 jobs a year, according to a study commissioned by Partnership for New York City, a group of 200 business leaders. In order to reduce the city's traffic, the study recommends that officials consider the use of congestion pricing in extremely congested areas, as well as an increase in parking fees and expanded ferry service to Manhattan. Currently, about one-third of the 3.6 million workers that travel to Manhattan daily arrive by car.

Mayor Bloomberg responded that congestion pricing would not be politically feasible at the moment. However, he recognized the advantages of the scheme and said he would not rule it out in the future.

News source: <http://www.nysun.com/pf.php?id=44616>

### **Odd but True**

#### **Those smelly cookies**

San Francisco's Municipal Transportation Agency has ordered that cookie-scented adhesive strips, placed on five San Francisco bus shelters as part of the California Milk Processor Board's "Got Milk?" advertising campaign, be taken down. The order was issued late the same day that the strips debuted, following strong public reaction. The city is now contemplating a complete ban on aromatic advertising at bus shelters. Intended to stimulate a desire for milk, critics complained the chocolate chip cookie scent could trigger allergic reactions and asthma attacks.

For additional information see <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2006/12/06/COOKIES.TMP>

#### **Smile, or else**

Video cameras have recently been installed on about 4,000 Beijing buses in order to monitor rider politeness. Riders who give up their seat to the elderly, disabled, pregnant women or children are now being recognized as "star passengers". The cameras are also assessing impolite behavior. The effort is being made to improve bus rider courtesy prior to an influx of visitors for the 2008 Olympic Games being held Beijing.

For further information, see <http://www.smh.com.au/news/world/busted-on-the-bus--big-brother-on-board-in-beijing/2006/10/24/1161455724068.html>