

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

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## Editorial

### **Time to Green Electric Rail Systems**

Bill Vincent

Public transportation advocates often point to the environmental benefits of transit, particularly the air quality benefits of electric rail systems. It seems rather odd, therefore, that US transit agencies have not made a substantial commitment to purchasing electricity from renewable sources, often referred to as "green power."

The US Environmental Protection Agency publishes a quarterly list of the top 25 green power purchasers in the US. (<http://www.epa.gov/greenpower/>). Topping the list was the US Air Force, followed closely by major public and private sector institutions, such as the World Bank, Johnson and Johnson, the Commonwealth of Pennsylvania, and FedEx Kinko's.

No transit agencies were on the top 25 list. Of the EPA's 563 green power partners, only one is a transit agency. Based upon several telephone calls to the American Public Transportation Association ("APTA"), it appears that the industry has no formalized program to encourage and track purchases of electricity from renewable sources.

According to the National Transit Database, transit agencies consume roughly 5.5 million MWh each year for propulsion power alone. Stations, escalators and elevators, rail yards, and other facilities add even more consumption.

In 2003, total US wind power generation was roughly 10.3 million MWh and total solar power generation was 554,000 MWh, according to the Department of Energy. Transit agencies could significantly boost these totals, helping to build a stronger market for renewable energy.

Moreover, a commitment to renewable energy would help improve air quality. A significant amount of US generation capacity is based upon coal. In the PJM energy market (the largest energy market in the country), each MWh of generated power results in roughly 2.8 lbs of NOx, 10 lbs of sulfur dioxide, 1,200 lbs of carbon dioxide, as well as several other emissions, like mercury.

Without a stronger commitment to renewable energy, electric rail systems will continue to be significant sources of pollution, thus undermining the argument that electric rail is an important air quality improvement strategy. Transit agencies should commit to more green power purchases.

Note: *Transport Innovator* welcomes the submission of guest editorials.

## *Transport News from the United States*

### **Six hydrogen buses hit the road in California**

Two hydrogen bus demonstration projects will soon be implemented in the Bay area.

AC Transit will operate three 40-foot Van Hool buses, equipped with UTC fuel cells, on regular bus routes. A hydrogen fueling station is currently under construction in Oakland and the company also plans to purchase a mobile hydrogen fueler. The project is funded by over \$20 million in grants from federal, state, and regional government agencies.

Santa Clara Valley Transportation Authority (VTA) will operate three 40-foot Gillig buses, powered by Ballard Power Systems fuel cells. The buses will be based at the company's San Jose division facility, which includes a hydrogen fueling station. VTA's \$18.4 million program is funded by a \$5.1 million grant from the Federal Transit Administration, \$6 million from 2000 Measure A Local Sales Tax, \$6 million from San Mateo County Transit District, \$0.3 million from the California Energy Commission, and \$1 million from the Bay Area Air Quality Management District.



VTA's Gillig fuel cell bus

*Source: Bay Area Monitor, April 2005*

*For more information, [click here](#) (Valley Transportation Authority) or [here](#) (AC Transit)*

### **Cleaner buses planned for New York City**

The New York City Council's Committee on Environmental Protection has passed several initiatives tightening fuel economy and emission standards for new city-owned vehicles. The initiatives specify a 5% increase in fuel economy in 2006 and a 20% increase in fuel economy by 2015. New transit standards will also require that 20% of new bus purchases use alternative fuels and that school and sightseeing buses be purchased or retrofit to operate on ultra low-sulfur diesel. All new vehicles in the city's fleet will be required to attain the lowest emission rating in the vehicle's category.

New York City Transit (NYCT) currently operates over 120 Orion VII hybrid-electric buses, one of the largest hybrid transit fleets in the world. The buses emit 60% less nitrogen oxides (NO<sub>x</sub>) and much less carbon monoxide (CO) than standard diesel buses. Although NYCT estimates the incremental costs for hybrids to range from \$125,000 - \$200,000 per bus, fuel economy savings of about \$100,000 are expected over the vehicles' 12-year lifespan.

*Source: Hybrid Vehicles, April 2005 and [Calstart 4/22/2005](#)*

*For more information, [click here](#) (New York City Council) or [here](#) (DaimlerChrysler/Orion)*

## Washington Legislature Approves Conversion of HOV lanes to HOT lanes

The Washington state legislature recently approved conversion of high occupancy vehicle (HOV) lanes on state highway 167 to high occupancy toll (HOT) lanes. The converted lanes would operate for nine miles between the Seattle suburbs of Auburn and Renton. They are scheduled to open in 2007 or 2008.

Under the plan, solo drivers will pay a toll, but buses, vans, and car pools will drive free of charge. Tolls will rise and fall based upon demand for the road, with the goal of keeping traffic moving above 45 mph during at least 90 percent of the peak period.

Unlike some other HOT lane projects, highway 167 will have several entry and exit points. It will not have a physical barrier between general traffic and the HOT lanes.

*Source: Seattle Times, 4/30/2005*

*For more information, [click here](#) (Washington State Department of Transportation)*

## Virginia Beach BRT approved

The Virginia Beach City Council has approved a new bus rapid transit system to replace the aging trolleys currently operating along the waterfront. Bus rapid transit will also extend service to a new convention center, the Town Center and a local mall. An unused railroad right-of-way that links downtown Norfolk to the resort may be used as a dedicated busway. Capital costs are anticipated to be \$21.4 million, with \$11.4 million provided by the city and \$10 million by the state. Annual operating costs are projected to be \$3 million per year, which will be paid through fare revenues and a \$450,000/year subsidy from Virginia Beach. BRT service is expected to debut in late 2006.



*Conceptual Virginia Beach BRT*

*Source: The Virginian Pilot, 4/6/2005 and 5/4/2005*

*For more information, [click here](#) (Virginia Beach)*

## Analysis recommends BRT for Davis County, Utah

A south Davis County, Utah Needs Analysis has recommended that bus rapid transit and trolleys be implemented along US 89 between Farmington and Salt Lake City. Although planners state that full-featured BRT could be achieved in a decade, Davis County leaders want to have BRT operating sooner. One design being contemplated is a single dedicated bus lane that would reverse direction between the morning and evening rush hours, with buses operating in mixed traffic in the opposite direction. BRT is being considered in several other areas, including the 3500 South Corridor, Mountain View Corridor and Salt Lake Valley.

*Source: Deseret News, 4/4/2005*

*For more information, [click here](#) (Wasatch Front Regional Council)*

## Kansas City receives BRT grant

A \$2 million Federal Transit Administration grant was awarded to two Kansas City bus transportation projects. The larger portion, \$1.4 million, has been allocated to fund construction of the 9.5 mile MAX bus rapid transit system slated to open July 2005. The BRT system will feature low-floor buses and dedicated lanes along a portion of the route. Real-time bus arrival information will be available on 17-foot marker signs installed at stations. The city's dial-a-ride paratransit service will purchase 25 replacement buses with the remaining \$630,000 portion of the grant.



*Kansas City BRT Station Concept*

*Source: Metro Magazine, 3/1/2005*

*For more information, [click here](#) (Federal Transit Authority)*

## Transit Council promotes Pittsburgh-Oakland BRT

The Allegheny County Transit Council, along with community, environmental and transportation groups, is initiating an effort to develop a bus rapid transit system between downtown Pittsburgh and Oakland. Pittsburgh's Planning Department, the Port Authority and a private consultant are currently conducting public forums to explain the dedicated lane BRT concept and to gather public opinion. Other local officials have proposed alternate strategies, including the use of trolleys or an elevated monorail-like track system. Previous plans to construct a \$1.4 billion light rail system between Oakland and downtown Pittsburgh were halted by Allegheny County commissioners in 1996 who claimed the rail line was too expensive and unnecessary.

*Source: Pittsburgh Post-Gazette, 4/25/2005*

## More express bus service proposed for Lincoln Tunnel

The New Jersey Turnpike Authority, the New Jersey Department of Transportation and the Port Authority may supplement the Lincoln Tunnel's 35-year old exclusive XBL (eXclusive Bus Lane) with a second dedicated bus lane. The XBL, which carries an average of 730 buses per hour during its peak travel hour (five second headway), has been operating at capacity for years and will require expansion to meet predicted demand for access to New York City from the growing western New Jersey and New York suburbs. The agencies will conduct a busway feasibility study using a \$1.1 million federal grant. Two additional federal grants, totaling \$1 million, will be used to study the possibility of developing an XBL busway/HOT lane.



*XBL bus lanes*

*Source: Times Herald Record, 3/14/2005*

*For more information on the study, [click here](#) (Port Authority of New York and New Jersey)*

## **Alternative fuel buses serve Pittsburgh bus routes**

Pittsburgh's Port Authority placed the first of six hybrid-electric buses into service on Earth Day. The 40-foot, low floor buses, produced by Gillig Corporation, operate on ultra low-sulfur diesel fuel. Funding for the \$3.5 million bus purchase was received from federal and state grants. Five compressed natural gas buses have been operating on Port Authority routes since 1991.

*Source: Port Authority*

## **Santa Monica's Rapid Blue BRT to start June**

Santa Monica's transit provider, Big Blue Bus, will put its new Rapid Blue BRT system into service in June 2005. The new express route is 8 miles in length and will include bus-only lanes with bus signal priority at intersections. The buses, which were built by North American Bus Industries (NABI), will have low flooring and operate on liquefied natural gas (LNG). The line will run between downtown Santa Monica and Los Angeles International Airport, passing through Venice, Playa Beach and Marina del Rey. Travel time improvements of 30% are expected.

*Source: Metro Magazine, 4/30/2005*  
*For Rapid Blue's service map, [click here](#)*

## **Seattle's Sound Transit Vastly Overestimates the Cost of New Express Bus Service**

Sound Transit overestimated the cost of new express bus service by \$2 billion. The error reduces the projected cost of the bus service by roughly fifty percent, making it less expensive than Sound Transit's proposed light rail system.

Sound transit attributed the \$2 billion mistake to human error. Critics charge that the miscalculation was intentional, designed to make express bus service appear less attractive than Sound Transit's preferred light rail project.

*Source: Seattle Post Intelligencer, 5/13/2005*

## **Minnesota starts MnPass toll lane service**

Beginning mid-May 2005, the I-394 HOV lanes--located between Minneapolis and its western suburbs--will be converted to an 11-mile high occupancy toll (HOT) facility, making it available to single-occupancy drivers willing to pay a toll. The pricing scheme gained a 64% approval rating from local residents. Drivers will lease an electronic transponder that is mounted to the windshield, allowing funds to be deducted from a pre-paid account. Tolls will vary from a minimum of 25 cents off-peak to a maximum of \$8 peak. The Minnesota Department of Transportation is considering adding similar high-occupancy toll (HOT) lanes to several other area highways.

*Source: St. Paul Pioneer Press, 3/9/2005*  
*For more information, [click here](#) (Minnesota Department of Transportation)*

## **Bus riders can go on-line at bus stations**

Roaring Fork, Colorado's Transportation Authority (RFTA) has installed a high-speed internet connection at its Rubey Park bus station. Web surfers may access the internet by notebook computer or PDA at a rate of \$2/hour with bulk time discounts. RFTA plans to add additional Internet Hotspots to its park-and-ride lots and eventually will add internet access to buses. Other planned improvements include the development of a bus rapid transit system with real-time bus tracking and a passenger information system.

*Source: [The Aspen Times, 3/28/2005](#)*

## *Transport News from Around the World*

### **Wind-powered taxi serves Scotland's Orkney Island**

Four small windmills will generate power for an electric taxi on Scotland's Orkney Island. The vehicle will serve the community of 563, requiring only a small fee from passengers to cover insurance, but offered free-of-charge for disabled locals. The Westray Electric Car and Windmill Project was developed by the Westray Development Trust and was funded by ScottishPower Green Energy Trust and the Scottish Energy Efficiency Office. The £71,500 grant was used to install three new turbines and to purchase a car converted for wheelchair access.

*Source: [The Scotsman, 2/15/2005](#)*

### **Dar es Salaam BRT project planning begins**

Dar es Salaam, Tanzania recently hired Brazilian firm Logit Engenharia Consultiva to begin planning the Dar es Salaam Rapid Transit (Dart) BRT project. Preliminary plans would impose restrictions on private cars in the city center and make the city more pedestrian-friendly by adding sidewalks, landscaping, sports fields and bicycle paths. A prototype 160-200 passenger capacity bus and demonstration bus station will be in place by August 2005 and construction will begin in 2006. The BRT system will replace over 7,000 commuter buses currently providing transport within the city.

*Source: [IPP Media, 4/1/2005](#)*

*For more information, [click here](#) (Institute for Transportation and Development Policy)*

### **Bangkok may add additional BRT routes**

Thailand's Transport Ministry has developed preliminary designs for nine additional BRT routes in the greater Bangkok area. A decision to proceed with construction will depend upon the success of the city's first two BRT routes, set to begin service in October 2005. The combined length of 11-route BRT system would be 380 km (237 miles). The total cost is estimated at 19 billion baht (\$479.6 million US).

*Source: [Bangkok Post, 2/15/2005](#)*

## **Winnipeg Announces New BRT Plans**

Winnipeg leaders recently announced a new, 3 phase plan to bring BRT to Winnipeg. The first phase would put exclusive red-colored bus lanes on several major arterial streets as well as dedicated busways through congested areas. The total cost for the first phase, including some articulated buses, is estimated to be \$90 million.

The second phase would add busways and corridors at a total cost of roughly \$70 million. In the third phase, busways and corridors also would be added, as would an LRT system serving as a downtown circulator. The cost for the third Phase is estimated at \$152 million, with the LRT alone projected to cost \$70 million.

*Source: [Winnipeg Sun, 5/14/2005](#)  
For more information, [click here](#) (Winnipeg Transit)*

## **Auckland City Council Announces New Bus Lanes in the CBD**

New bus lanes will be introduced in downtown Auckland. The lanes will support new bus services and routes made possible by the Northern Busway project. The lanes will be painted green at the beginning and end, thus helping motorists recognize that the lanes are reserved for buses. The lanes are expected to open in July 2005.

*Source: [Scoop Independent News, 5/12/2005](#)  
For more information, [click here](#) (Auckland City)*

## **Hanoi urban transport project to include BRT**

Hanoi will construct two experimental BRT lines as part of a \$170 million urban transport development project. The project is slated to begin in 2006 and be completed by 2010.

Bus rapid transit will be addressed in Component One of the project. Current bus system capacity will be increased and two experimental BRT routes developed, a modern ticketing system implemented and bus maintenance facilities will be constructed. The goal is to shift riders away from cars to buses by enhancing transit speed and quality, developing tighter parking policies and enhancing traffic enforcement. Funding for the project is provided by Hanoi's city government, the World Bank, the Japan Policy and Human Resources Development Fund and the Global Environment Facility (GEF).

*Source: [Vietnam Economic Times, 5/4/2005](#)*

## **Royal Academy proposes distance-based charging scheme**

The Royal Academy of Engineering has recommended a "true-cost" charging scheme for Britain's roads to address traffic congestion and transport's impact on global warming. Charges to drivers would reflect the actual cost of road usage and would include all costs of providing, operating and maintaining public roads. The desired impact would be shorter trips, less congestion and greater use of public transport. Currently transportation accounts for 28% of all UK CO<sub>2</sub> emissions.

*Source: [Belfast Telegraph, 3/9/2005](#)  
For more information, [click here](#) (Royal Academy of Engineering)*

## Edinburgh places new bus order

Edinburgh's Lothian Buses has ordered 60 new Wrightbus low floor, low emission, 42-seat buses at a cost of £10 million. Most of the buses will operate on the city's bus lanes and new Fastlink guided busway, the longest continuous guided busway in the UK (1.5 km). Fifty additional double-decker buses have been ordered for the company's other main routes. Lothian has experienced a 25% increase in ridership over the past six years, serving 102 million riders in 2004. Average weekly ridership is estimated at 350,000.



Source: *Edinburgh Evening News*, 3/21/2005

## Study shows simple changes can alleviate congestion

A survey of travel behavior in three English towns has shown that traffic congestion may be reduced without adding additional transport infrastructure. Conducted by Socialdata and Sustrans at the request of the towns of Darlington, Peterborough and Worcester, the study measured the transportation patterns and opinions of 12,000 citizens. Researchers found that, although two-thirds of trips were made by car, 90% of study participants strongly supported sustainable transport. Researchers concluded that by changing travel patterns--replacing one car trip per week with an alternate form of transportation such as buses, bicycling or walking--traffic congestion could be reduced by more than 10%. The three towns are sharing a government grant to encourage use of alternative transport.

Source: *Bicycle Business*, 3/21/2005

## United Kingdom may tax polluting vehicles

The UK government is considering a taxation system targeting 4x4s vehicles. Called "fee-bating", the sliding-scale tax would be based on carbon dioxide (CO<sub>2</sub>) emissions: CO<sub>2</sub> ratings above 185 grams/kilometer would be taxed, while cars emitting lower quantities of the pollutant would receive a rebate. Two other systems nearing introduction include rebates to owners of very low emission cars and a voluntary color-coded energy labeling system that would place red labels on polluting vehicles and green labels on fuel efficient cars. These measures are designed to impact consumer car-buying decisions as part of an overall UK strategy to achieve a 2010 CO<sub>2</sub> emission reduction target.

Source: *The Observer (UK)*, 2/6/2005 and *Green Budget News*, 2/14/2005  
For more information, [click here](#) (Energy Group, UK Department of Trade and Industry)