

# TRANSIT

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## Calgary receives a Half Billion for Mass Transit

Calgary's newly opened West LRT is one of three Calgary transit projects to benefit from Alberta's commitment of \$473 million in funding from the Green Transit Incentives (GREEN Trip) Program.

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Agreements signed between the Alberta government and the City of Calgary mean the city may borrow \$473 million with the full backing of the provincial government to finance three approved projects: \$332 million for the West Light Rail Transit (LRT) line; \$8 million for Southeast Transit Way (SETWAY) predesign; and \$133 million for the purchase of at least 50 Light Rail Vehicles.

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"GreenTRIP is about building well connected transportation systems that get Albertans to where they need to be," said Transportation Minister Ric McIver. "We are committed to supporting Calgarians' mass transit needs as they build a city for the future. This agreement will help the City of Calgary maintain momentum on innovative transit projects."

"Transit investments are amongst the best investments any city can make," said Calgary Mayor Naheed Nenshi. "They're investments in reducing congestion, in improving air quality, and in increasing social mobility for everyone in the community. It's great that the Alberta government also recognizes this." (con't p. 2)

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## Montreal among Participants at 3<sup>rd</sup> International Trolleybus Conference

About 200 participants attended the 3<sup>rd</sup> International Trolleybus Conference in Leipzig, Germany on October 23<sup>rd</sup> and 24<sup>th</sup>.

By choosing Leipzig as the venue, the hosts indicated that there is still a strong desire to introduce the trolleybus in that city, although only small steps have been taken toward this goal to date.

Big news was a battery-electric trolleybus project planned for Esslingen, Germany. (con't p. 3)

## WHO confirms Diesel Exhaust is Carcinogen

For many years studies have raised concerns about the connection between diesel exhaust and cancer in workers with heavy exposure to exhaust from diesel engines. Men with the heaviest and most prolonged exposures, such as railroad workers, heavy equipment operators, diesel mechanics, miners, bus and truck drivers, have been found to have higher lung cancer death rates than unexposed workers. For example, in March 2012, the National Cancer Institute and National Insti- (cont' p. 2)



**News Bulletin of the Edmonton Trolley Coalition**  
**Sustainable Transit for Liveable Communities**  
[www.trolleycoalition.org](http://www.trolleycoalition.org)

**Editor: Robert R. Clark, retired supervisor of transit planning**

## WHO: Diesel is Carcinogenic (con't)

tute for Occupational Safety and Health published results of a study that showed an increased risk of death from lung cancer in miners exposed to diesel exhaust.

People can also be exposed in areas where they live and play, although typically at lower levels than in the workplace. Exposures are highest where diesel traffic is heaviest, such as along major highways and in cities. The engines used in many trucks, buses, trains, construction and farm equipment, generators, ships and some cars run on diesel.

While other large health and environmental bodies have maintained for years that diesel exhaust is carcinogenic on the basis of the evidence these studies, the World Health Organization (WHO) long hesitated to adopt this stance, instead preferring to call it a "probable carcinogen". In 2012, however, the WHO changed its position by classifying diesel engine exhaust as a carcinogen – a substance proven to cause cancer. The International Agency for Research on Cancer (IARC), which is part of the WHO, based its decision on what it calls "sufficient evidence" that exposure to diesel exhaust causes lung cancer and "limited evidence" that it increases the risk of bladder cancer.

Dr Christopher Portier, who led the assessment, said: "The scientific evidence was compelling and the Working Group's conclusion was unanimous, diesel engine exhaust causes lung cancer in humans. Given the additional health impacts from diesel particulates, exposure to this mixture of chemicals should be reduced worldwide."

The United States and other developed countries have responded to environmental and health concerns over diesel and gasoline exhaust by tightening emission standards. For example, changes in requirements for diesel engines have led to designs that burn fuel more efficiently, decrease the sulfur content, and reduce emissions. However, since there is no threshold for exposure, it is not known how much, or how little, diesel exhaust is required to initiate the disease process.

Dr. Christopher Wild, Director of IARC, said "Today's conclusion sends a strong signal that public health action is warranted."

[BBC Health News, June 12, 2012; American Cancer Society, June 15, 2012]



A diesel bus spews its emissions into the street. While newer diesel engines produce less emissions, diesel exhaust is now recognized as a carcinogen by the WHO. [Photo: A. Wong]

## Worcester, Mass. to get Battery Buses

The Worcester Massachusetts Regional Transit Authority (WRTA) was recently awarded a \$4.4 million U.S. Federal Transit Authority Clean Fuels grant to purchase three battery-electric buses from Proterra Inc. The authority will use the money to replace three of its old diesel buses.

The WRTA estimates that replacing these three diesel buses will eliminate 53 tons of harmful emissions and reduce petroleum consumption by more than 23,000 gallons per year, while reducing operating costs by more nearly \$500,000. [Source: Proterra, Sept. 26, 2012]

## Calgary receives GreenTRIP Funds (con't)

GreenTRIP provides one-time capital funding that supports new and expanded mass transit throughout Alberta, with projects determined by municipalities. The \$2-billion, multi-year GreenTRIP program supports initiatives that contribute to transit accessibility and environmental benefits such as increased use of mass transit, reduction of roadway congestion, and reduction of greenhouse gas emissions. To date, the Alberta government has approved more than \$1 billion in GreenTRIP funding for transit projects in 14 municipalities.

The Alberta government's investment in Calgary's West LRT totaled \$1.3 billion, with funding from GreenTRIP, the Municipal Sustainability Initiative and other provincial funding sources. This investment represents 95 per cent of the total project cost for the new LRT line. [Source: City of Calgary, December 11, 2012]

## International Trolleybus Conference (con't from p. 1)

The project envisages operating 3 km of a 6 km route under existing trolleybus overhead, but using batteries in the Berkheim district and in the south of Esslingen. The VCDB VerkehrsConsult Dresden–Berlin GmbH has produced a report on this proposal, and an application for financial assistance has been submitted. The German Federal Ministry for Transport, Construction and Development is reportedly more inclined to fund the proven technology of trolleybuses in recent months, as well as related projects.

In a manner similar to Esslingen, the transport authorities in Leipzig are considering partially equipping route 70 with trolley overhead so that battery articulated buses can be charged along the route.

Internationally, trolleybuses are increasingly being used for electromobility. Delegates learned that Montreal has proposed to introduce trolleybuses as a way to electrify public transport. The Montreal proposal envisages that several heavy trunk routes will be electrified with trolleybuses starting in 2017, while lighter feeder routes will be served by battery buses.

After several years of planning, Leeds, the third largest city in England, has received state funding for its "New Generation Transport", which proposes trolleybus service on two routes over 14km long.

The region of Sao Paulo, Brazil is using trolleybuses in its fight against pollution; further BRT corridors will be electrified in the coming years and the existing network will be developed more efficiently.

Battery buses formed part of the discussion at the conference, and a number of their shortcomings were exposed. Only small buses can achieve a range of 200km at an acceptable battery weight, which is typical of the distance requirement for a day's operation. While standard sized 12 metre (40 foot) battery buses are available, the two tonne weight of the batteries restricts the vehicle's useful payload. The energy density is only 0.1 to 0.2 kWh/kg compared with a tank of diesel fuel at almost 3 kWh/kg, according to a presentation made by Lino Guzzella. Thus, purely battery powered buses obviously have their limitations, and it is clear that the proven concept of the trolleybus has a role to play in future transport. [Information Source: Trolleymotion, October 29, 2012]

## P3 Advocated for Edmonton's Southeast LRT Line

After an in-camera discussion Aug. 29, 2012, Edmonton City Council voted to modify its Federal P3 funding application for the city's Southeast LRT line to include daily operations and ongoing maintenance. Edmonton Transportation General Manager Bob Boutilier says he is in favor of having a private company design, build and operate the city's planned line.

But both the Amalgamated Transit Union Local 569 and CUPE Local 30, representing maintenance workers, opposed the move, predicting higher costs and poor service would be the result. "P3's are very dangerous deals for municipalities to sign," said Mike Scott, CUPE Local 30 President. "For-profit corporations take the core services governments provide, then run them with only one thing in mind--the bottom line. Experience shows that confusing, backroom deals only add to costs and reduce service levels and accountability," he told reporters. "Do we want an LRT station with burnt out lights, excess graffiti and poor security because a private operator wants to cut costs?"

"Keep the project in house. That's a successful, proven framework with balanced budgets," said Stu Litwinowich who represents the Amalgamated Transit Union Local 569. (continued on p. 4)

## P3 for Edmonton SE LRT (con't)

But Boutilier countered that a full P3 is better than a mixed model because the private company will be motivated to build the line in a way that allows it to run and maintain the line efficiently. The Southeast line will be separate from the existing one, with different track, trains and maintenance yard. "We're not mixing two groups of people operating on one line," he said. The key to a good P3 is to write the initial contract and legal aspects well, and include clear standards of frequency and reliability, he added.

Council said it hopes for up to \$400 million from the Federal P3 Canada Fund to help build the \$1.6-billion Mill Woods to downtown line. Councillors say the federal agency told them only a full P3 would be considered. PPP Canada has 12 months from August 2012 to decide whether to approve the application.

John McBride, CEO of the three-year-old Crown Corporation PPP Canada, said a project built with a P3 model will cost more. But the benefits are that it gives municipalities predictable costs over the full life cycle of the infrastructure, puts all the risk of cost overruns and delays onto the private sector partner, and encourages innovation.

"In a P3, you tell the private sector what you want them to produce, rather than how," he said. The city sets performance and safety standards, but the private sector is motivated to find the best way to meet those goals. "It's allowing the people who are experts to do what they do best," he said.

The P3 for Vancouver's Canada Line, running from Richmond to Waterfront since 2009, includes daily operations. After a couple years of operation, problems surfaced due to cost cutting during construction of the line. These issues have been costly to resolve, and have required public funds.

[Sources: Edmonton Journal and Edmonton Sun, October 16, 2012; Transport Action BC, June 1, 2012; The Transport Politic, November 17, 2009]

## Vancouver's Transit Museum Society loses Funding

Vancouver's Transit Museum Society (TRAMS) is in search of new quarters and funds to maintain its fleet of valuable historic buses. Budget pressures at TransLink have brought funding for the group to an end, although any savings realized by TransLink on the deal are miniscule in its multi-million dollar annual budget.

TRAMS operates about 12 historic buses and trolleybuses dating back to the 1930s as part of a "rolling museum" used for transit promotional events, group charters, as well as movies and events such as weddings. TransLink gave the group notice that it will no longer cover the cost of renting a warehouse to store the buses in. The group has until the end of September 2013 to find a new home for the vehicles.

"We've been renting a lot in Burnaby from a landowner, and paying that plus vehicle insurance and liability insurance has added up to more than \$91,000 a year to TransLink," said Drew Snider, a spokesperson for the transit authority. "So with our current budgetary situation...we just decided that we can't continue that support."

TRAMS President Dale Laird said his group plans to look for private partners to keep the bus museum going. "Our problem is going to be finding a place to store the buses, being able to afford a warehouse to put them in," he said. "We've got some ideas of partnerships...we've been making a list of who we could talk to and other museum groups we could partner with."

The historic bus fleet includes buses representative of each decade of transit service since the 1930's. "It would just be sad to lose the history of these vehicles," Laird said. Laird, who drove Vancouver buses for 36 years, added that he knows some of his peers support preserving the city's transit history, but suggested this sentiment is being overruled by budgetary pressures.

Transit commissioner Martin Crilly challenged TransLink earlier this year to find cost savings of \$40 million to \$60 million over the next three years. The authority has already identified close to \$98 million in annual "efficiencies" possible over the next three years, not including the \$91,000 that could be saved by withdrawing support for TRAMS.

[Sources: Georgia Strait, October 10, 2012]

## Retired Town Planner seeks Return of Trolleybuses to Derby, UK

Until 1967, electric-powered buses were a familiar sight on the streets of Derby, UK. But wrangles over proposed extensions to the network sparked the beginning of the end. It was on September 9, 1967, that the final trolleybus journey took place on Derby streets.

But now one retired Derby town planner wants to bring them back. In the early 1960s, Bryan Moore worked for the local authority and had a hand in the creation of Derby's inner ring road system – the final part of which was only recently completed. At the time, the ring road system helped ease traffic congestion brought on by the city's growing population. Today, Derby is continuing to grow, and Moore, 73, believes there is a problem on the horizon. It is estimated that, by 2040, Derby's population will have grown by a third. If the transport system stays as it is, travelling around Derby by car will be much more difficult.

Moore said: "The transport system in Derby is historical and cannot easily adapt to major traffic volume increases. The forecast for car use suggests that 65% of all journeys will be by car for all trip types unless there is a major change in public transport to encourage change." He believes a radical solution needs to be found in order to make sure the city's road network does not become swamped – and he believes the answer lies with trolleybuses, or TBus in modern parlance.

Like their forefathers of the 1960s, TBus are powered by overhead wires and run on rubber tires on normal roads. The TBus also ticks a number of environmental boxes. They are emission-free at street level, energy-efficient and much cheaper to install than trams. If passenger volumes warrant, TBus lines can be converted to trams.

According to Moore, the TBus would be a good fit for Derby. Using his town planning skills, he has even devised a route through the city, using a combination of existing roads and disused rail corridors. He has devised what he calls the "linear route" system, taking in a number of places to which passengers would want to travel.

"Most bus routes collect customers from a wide area and bus them to a recognised location, such as the city centre," says Moore. "The linear route system collects customers along a line and arranges a variety of 'traffic attractors' along the same line. It's a bit like a string of beads. The result is the creation of a corridor of movement along the line where individual journeys mesh together to create a fairly steady traffic volume."

Moore has come up with a route which spans from one side of Derby city centre to the other. Spurs can be added to serve specific areas.

Moore estimates a total cost of £75 million to £100 million to build the system. "I budgeted for the top specification of TBus for Derby – because I would like to see Derby become famous for these vehicles. While in the current economic climate finances are tight, the "fact is that this scheme is less than half the cost of the first stage of the Nottingham tram system," says Moore, and it is a system that fits Derby.

Trolleybuses are in operation in more than 350 cities across the world, and the construction of a new system in Leeds, UK, has been given final approval. Mr Moore has submitted a business case for his idea to Derby City Council. [Source: Derby Telegraph, July 10, 2012]

## World Wildlife Fund aims for 600,000 electric vehicles by 2020

The World Wildlife Fund in Canada has launched a campaign to get 600,000 electric vehicles on the road by 2020 as a way to reduce greenhouse gases.

The use of fossil-fuel vehicles creates 19 percent of Canada's greenhouse gases, according to 2010 statistics from Environment Canada, WWF-Canada says. If people switch to electric vehicles, there will be fewer greenhouse gases and a friendlier climate.

The first step to getting more electric vehicles on the road is to ask businesses with fleets of cars to try out electric vehicles. Right now, the number of electric vehicles on Canadian roads stands at 1,500. Getting 600,000 electric vehicles on the road--which would account for 10% of vehicle sales in Canada--is achievable with government, businesses, organizations and individuals working together, said Program Manager Rebecca Spring. Car rental companies and taxi companies are the types of businesses with fleets of cars that could try out electric vehicles.

"We're not trying to sell cars," said Spring.. But WWF-Canada would like people to feel familiar with electric vehicles so that the next time they purchase a car, they will consider an electric vehicle. A recent national online survey of Canadians by Environics Research Group showed that 73% of Canadians back government support for electric vehicles.

To increase Canadians' awareness and use of electric vehicles, WWF-Canada is asking governments to install charging stations and offer incentives for purchasing an electric vehicle. British Columbia, Ontario and Quebec, which combined have 60% of the electric cars on the road, already have incentives, Spring said.

If there is no push to get more electric vehicles on the road, there will be about 200 megatonnes of greenhouse gases emitted annually into the atmosphere by 2050, Spring said. On the other hand, if more than 90 percent of the vehicles on the road by 2050 are electric, then annual GHG emissions from transportation will drop to 63 megatonnes, she said.

Further reductions can be achieved by promoting bicycling and walking according to the WWF.

[Source: SNL Power Week Canada, October 26, 2012, courtesy of Nathan Brown]

## Verona Italy to Build Trolleybus System

Verona Italy is now part of a growing list of Italian cities undertaking the construction of a trolleybus system. 37 Citea trolleybuses have been ordered with Kiepe propulsion equipment. Diesel generator sets will be installed to allow the trolleys to traverse an unwired section in the centre of the city. The trolleys will be articulated vehicles with a capacity of 140 passengers, and will feature a guidance system that enables better alignment with curbs. Two lines are envisioned for completion sometime in 2015.

[Source: International Trolleybus News, R. C. DeArmond, October 2012]

## The future is electric!

### Winnipeg Bus Builder gets Federal Dollars to invest in Battery Buses

A Winnipeg-based bus builder was awarded 3.4 Million dollars by Sustainable Development Technology Canada to further the development of battery electric buses. Four rapid charge battery buses will be developed with these funds that can recharge at high capacity charging stations placed along the route.

The vehicles are to be ready by Fall of 2013 and will go into operation in Winnipeg, Manitoba for testing over a four-year period.

This project will examine the technology and key operational performance issues including: the charging system, battery capacity, component life and reliability and the assessment of both operational and life cycle cost savings.

[Sources: Winnipeg Free Press, October 26, 2012; CNW Canada Newswire, October 26, 2012]

## Grid Connected Electric Trucks on Test in Sweden

Scania and Siemens have developed an electric truck which is being tested in real conditions in Sweden on an electrified route between Pajala and a mine in Svappavaara.

"This is one of many different projects at Scania to test new alternative fuels for the future", said Sara Bengtsson, manager of Public Relations for Scania.

The truck with iron extracted from the mine will travel around 150km up to a railroad that will then take the ore to a port on the Atlantic coast. The Swedish Transport Department affirmed that totally electric trucks are a realistic alternative. [Source: Trolley motion, July 9, 2012]

### Dayton, Ohio continues Trolley System Improvements

While planning for a fleet of new electric trolleybuses, the City of Dayton, Ohio is busy making improvements to its extensive trolley network.

New wiring will allow continued operation of trolleybuses during an extensive, five-year roadway rebuilding project. The installation of a mile of new wire on Edwin Moses Blvd and Riverview Avenue was completed in late 2012, and was in testing during December. Trolleybus service is expected to return to Route 8 early in 2013.

An invitation for tenders on new trolleybuses was issued in July of 2012. [Source: International Trolleybus News, R. C. DeArmond, December 2012]

### Bari, Italy to resurrect Trolleybus

The Italian city of Bari will reinstate its electric trolleybus system after 25 years of disuse. The system originally opened in 1939, but city ceased trolley operations in December of 1987. At that time, some 15.4 km of overhead infrastructure was in place, and this infrastructure was not removed, but rather simply left in place for a future revival. With the ever increasing focus on alternatives to petroleum fuels, it appears that revival will take place in early 2013.

An October 2012 announcement in the local media reported that financial issues had been resolved, and that seven 40-foot trolleybuses were serviceable for use on the system. Three are newly purchased vehicles, whereas the other four are vehicles that were purchased in the mid-1990's for the planned resurrection of the system.

[Source: Trolley motion, October 15, 2012]

### Kansas City Streetcar Advocates cite Inability of Buses to Generate Development and Revitalization

As Kansas City prepares for an election to help pay for a \$100 million, 2-mile streetcar starter system to be built for 2015, streetcar supporters have come under fire. Opponents of the proposal have once again dragged out the age-old argument that cheaper transit service could be provided with diesel buses.

But nay-sayers are missing the point, say supporters of the proposal. It isn't just about transit. It's about creating a magnet for more apartments, condos, retail and high-tech—doing what a number of progressive cities have already done to lure the next generation of young entrepreneurs, workers and hipsters to their downtowns. Streetcars get credit for bringing thousands of new residents to downtown Portland, luring Amazon to a blighted Seattle neighborhood and spurring new condo complexes in Tampa.

"The strongest argument is that we need to be building a city for the next 25 years," Mayor Sly James said. "We're going to have to attract millennials--people who believe that having an internet connection is more important than having a car."

Councilman Russ Johnson, City Council's most ardent streetcar advocate, says the city needs to provide amenities, such as streetcars, that will appeal to a new wave of business giants who don't care about the car culture. "They're voting with their feet, to hip, high-density, walkable cities," he says. "You have to be competitive to lure this next set of brain thinkers or entrepreneurs." (con't on page 8)

**Kansas City Streetcars (con't)** For 15 years, Kansas City voters repeatedly considered and rejected the idea of a massive, \$1 billion light-rail rapid transit system to cover the whole city. Meanwhile, Johnson points out, the technology changed. Modern streetcars became the trend de jour because they're cheaper, smaller and more geared to an urban environment. They're attractive not just to young people but to tourists and aging empty nesters who don't want to worry about a car or spend time stuck in traffic.

The HDR Engineering consulting firm has predicted more than \$500 million in added development potential along Kansas City's streetcar corridor through 2025. And while an enhanced downtown bus system would be far less expensive (\$20 million versus about \$100 million), buses just don't prompt spinoff development, consultants say.

Streetcars, on the other hand, are a proven economic stimulus. Some national experts familiar with Kansas City say streetcars and electric transit are the wave of the future, and Kansas City can either get on board or be left behind.

"It is as important as building the freeways in the late 20th (century)," said Chris Leinberger, a nonresident senior Brookings Institution fellow who specializes in downtown redevelopment. "Failure to make this investment will condemn Kansas City to be a 20th century economy while the rest of the country exploits the 21st century knowledge and experience economies." [Source: Kansas City Star, October 22, 2012]

**Washington Streetcar Developments** Back in your great-grandfather's day, streetcars cranked their way around Washington with predictable regularity. In the early 20th century, family weekends might include "riding the lines" to amusement parks in Glen Echo, Bethesda or far Northeast, lines locals used daily to get to work, school or shopping. But by the 1960s, the streetcars were gone in Washington, victims of America's fascination with the automobile.

Now Washington-area planners are hoping residents want to get back on board as new streetcar lines are being planned for the trendy H Street Northeast corridor, along Columbia Pike in Arlington and out to Baileys Crossroads in Fairfax County. "With the growth in the area, the streetcar has the requisite capacity to accommodate more people," said Leonard Wolfenstein, chief of transportation planning for Fairfax County. "It's a catalyst to the type of development we envision." At least 40 other cities are exploring streetcar plans to ease traffic, spur development and attract young professionals and suburbanites.

And that type of development — a mix of commercial, residential and some retail — can mean an increase in property values. "Anytime you improve transit, it has an effect on housing values," said Mary Hughes Hynes, chairwoman of the Arlington County Board.

Test streetcars may be rolling along H Street as early as next fall, and the Columbia Pike plan calls for a starter system to be fully operational in 2017.

"Fifty years after the last streetcars, we've gone full cycle," said Kenneth Rucker, Director of Administration at the National Capital Trolley Museum in Colesville. "Many things that were going in one direction in the 1960s are going in the opposite direction today." But these are not your great-grandfather's streetcars. They are modern, smooth-riding, high-tech electric vehicles designed to operate quietly and efficiently, while creating a sense of place. [Source: Washington Times, January 4, 2013]

**Battery Electric Buses funded for Nashville, Tennessee** Just over \$3 million will be provided by the U.S. Department of Transportation to help the Nashville Metropolitan Area Transit Authority (MTA) purchase a few battery-electric buses and install a charging station at a central transit hub. The cash is part of an investment in sustainable transportation systems that improve access to jobs, education, and medical care for commuters, while bringing cleaner air to communities and reducing oil dependency. . [U.S. DOT, September 24, 2012]