# Transit Talk

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## Regressive Thinking – Councillor suggests scrapping Edmonton trolley system

The fact Edmonton has a trolley system spanning some 130 kms, valued at $73 million, and that provides a service which is clean and quiet to 46 core neighborhoods doesn't seem to matter to Ward 2 Councillor Kim Krushell. She's indicated recently to the media she is considering putting forward a motion to Council early in 2006 that the trolley system be scrapped, despite its value and its potential for increasing transit's long-term sustainability.

In 2004, after months of debating an administrative recommendation to scrap the system that was based on a consultant's report found riddled with flaws, City Council voted to continue trolley service pending a review in 2008. In the mean time, testing of new trolley buses and other technologies was to be undertaken.

(con't on page 2)

## In This Issue:



"It's the price of diesel - only way we can afford to keep the service going."

But Krushell isn't inclined to wait; she says she's concerned about rising transit costs. She refers to an administrative report that claimed a savings of $60 million could be realized by replacing trolleys with diesel buses.

"Problems were identified with that savings claim already back in 2004," explains Edmonton Trolley Coalition chair Brian Tucker. "Most of the savings were negated by the cost of taking down all the trolley bus wires and removing the power substations. That was exposed during the trolley debates, when Council made its decision."

"To a large extent, transit's costs are being driven up by higher than expected fuel and maintenance costs for the diesel fleet. We need to look at better ways to deal with these cost increases," says Tucker, "as rising oil prices are here to stay. The best way to do that is by expanding proven alternatives to diesel bus service where practical, not by throwing away our investments in such alternatives."

The City's budget documents show that the base price of oil has risen 107.5% since 2000. "Even though the City negotiates a competitive fuel rate, the City budget has needed an annual increase of between $1 and $2 million in recent years to pay for rising fuel costs," notes Tucker.

"If the price of fuel increases, say, $1.5 million annually over 10 years, that's $82 million extra that needs to be found just to pay for our existing level of service. In the long term, diesel buses get increasingly unsustainable."

Transit systems throughout North America are facing these issues. Many American cities have already raised fares to pay for fuel increases. Others have cut service. In Canada, transit authorities are facing budget deficits and the same hard choices.

Debra Gillett, chair of Citizens for Better Transit agreed that the proposal to scrap trolleys was short-sighted. "A move like this would most certainly be regretted down the road," she said. "We need to be looking at new low floor trolley buses and expanding the trolley system. In the long-term, that investment would leave us better off than many other cities," said Gillett whose group had advocated for the expansion of the trolley system to Northgate at the city's budget hearings in November.

"The price of power has not increased by nearly the same factor as the price of diesel fuel," Tucker points out. An investment in renewable energy sources for transit, like wind power, would simultaneously stabilize electricity prices and allow Edmonton to tap green funds available from the Federal government. "We could be in a position where an expanded and renewed trolley bus system would operate at minimal cost to the city taxpayer. With trolleys operating on our mainline bus routes in concert with our LRT system, a significant core portion of our transit system could be electrically powered rather than dependent on petroleum fuels."

Gillett pointed to the need for future vision in considering this issue. "Getting rid of trolleys will not serve the public interest at all, nor will it enhance the image our city has as a leader."

ETC Editorial

## *Where are we headed?*

by Bob Clark

*As we approach a Federal Election, candidates from all parties are reflecting their constituents' concerns, including global warming. In the United States, in spite of the direction taken by the Bush administration, cities have aggressive public transit policies and new light rail systems are springing up, sometimes in the most unlikely places.*

*Here in Edmonton, where thirty years ago we pioneered modern light rail, our one LRT line and our truncated trolley system soldier on, subject to one attack after another. Many of us who were involved in transit planning in the 1970's have passed on, after watching some of our well designed plans tossed out the window under the philosophy that being stingy with transit investment was a better solution for the city's growing transportation problems. Along with way, middle management grew from twelve people to eighty five. A transportation department focussed on roadways has not led us in the right direction.*

*Time and again, it has been shown that the diesel bus fares poorly in attracting people from their cars. High speed diesel buses are proving themselves wishful thinking, as now it is suggested that high speed transit plans can be effectively implemented by simply providing a few queue jumps. If we want true high speed transit, we need to provide rights of way, and bus right of way has been shown to cost as much if not more than the track and overhead for LRT.*

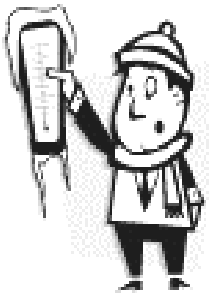
*Just because Alberta is the heart of the oil industry does not mean it is disloyal to look at cleaner, more efficient and more sustainable sources of energy, and we should be looking at proven technology, not pie in the sky. The hybrid diesels and fuel cells of today are the monorails of yesterday--big holes waiting to be filled with taxpayers' money. We have the beginnings of an effective light rail system and a very sizeable investment in electric trolley buses. We need to take note what the rest of the world is doing and build on those investments. It is in that direction that a better future for transportation lies.*

# *Beating Winter . . . electrically!*

As Winter blows through many parts of the world, we are reminded that electric transit has repeatedly proven its mettle as a technology that is very capable of beating harsh winter weather to deliver commuters to their destinations.

The views below illustrate the trolley bus' ability to succeed over the elements. In a time when we are confronted with so many transportation issues, not the least of which is a need to find alternative energy sources to petroleum fuels, it's reassuring to know that there is an alternative energy solution that is proven dependable in different climates and service conditions around the world.

**Slovakia** (Z. Jiang)




**Seattle, U.S.A.** (Z. Jiang)

**Vancouver, Canada** (Z. Jiang)

**Dayton, U.S.A.** (H. Hylton)

**Edmonton, Canada** (Z. Jiang)


**Switzerland** (Z. Jiang)


**Latvia** (Z. Jiang)

# New Study shows Diesel Exhaust impairs Blood Function

Over the past two decades, there has been increased focus on the health effects of diesel exhaust. Even at extremely low levels, breathing in diesel exhaust has been linked to cancer, respiratory ailments like asthma, pneumonia and cardio-pulmonary disease, and most recently heart disease was added to the list. While filter technologies are being developed to remove some of the harmful particles from diesel exhaust, these technologies do not represent a complete fix.

Public transit is often the focus of much attention when it comes to diesel emissions because it is an industry that relies heavily on diesel engines and because its vehicles spend their time operating in the streets of our cities, where millions of people are directly exposed to their emissions.

A new study by Dr. Nicholas Mills of the Centre for Cardiovascular Science in Edinburgh, Scotland builds on previous research that found the numbers of deaths and hospitalizations due to heart attack and stroke go up as traffic-induced air pollution rises. While fine particle pollutants are known to be responsible, prior to Dr. Mills research the precise mechanisms involved in air pollution's effects on the heart and blood vessels had remained largely unknown.

Mills' researchers found that exposure to diesel exhaust for one hour during exercise caused a significant decrease in the blood vessels' ability to expand, or dilate. The exposure also decreased levels of an enzyme that helps prevent clots from forming in the blood and possibly causing a heart attack.

"Low levels of diesel exhaust are having real effects on our blood vessels, and the way in which they function, that may potentially be sufficient to act as a trigger for a heart attack," Mills said.

Short-term exposure can worsen existing problems and lead to hospitalization for heart attack and other heart and lung conditions. Long-term repeated exposure, as in the case of people who drive or work with diesel vehicles, increases the risk of death from coronary heart disease, abnormal heart rhythms and heart failure. "Long-term exposure could be contributing to the formation of coronary artery disease," said Mills, whose study is published in the Journal of the American Heart Association.

The study involved 30 healthy, non-smoking men, aged 20 to 38, who were evaluated during two one-hour tests, two weeks apart. During each test, the men were randomly assigned to be exposed to either filtered air or diesel exhaust while riding a stationary bicycle for 15-minute intervals while inside a specially built diesel exposure chamber. Diesel exhaust was generated from an idling engine. During exposure, the particle concentration was kept at a level comparable to curbside exposure on a busy street in a large city.

"It mimics more the sorts of activities you might do when you're encountering diesel exhaust," said Mills of the study's design. "So if you're a cyclist, you might go for a 15-minute bike ride and be exposed to diesel exhaust in the bus lane, for example. Or if you're walking on the streets, then you're going to be breathing more air than if you're just sitting at rest."

At two points, two and six hours after being in the chamber, researchers tested the blood of participants using a special test process. Blood flow fell markedly two hours after diesel exhaust exposure, and these effects continued to persist even six hours later.

Researchers were particularly interested in diesel engines because they generate 100 times more pollutant particles than comparable-sized gasoline engines - and the number of diesel-powered vehicles has been on the rise around the world. The findings may not apply to gasoline engines, said Mills, because diesel fuel and gasoline are consumed and break down differently during engine operation.

Dr. Stephan van Eeden, a respirologist at the University of British Columbia and spokesman for the Canadian Heart and Stoke Foundation, said such studies are important because they strengthen the evidence needed to convince governments to tighten regulations, particularly for trucks and buses that spew high levels of pollutants into the environment. "Doing controlled experiments like this group have done actually gives more credence that there is a biological mechanism," van Eeden added. The research could have major public health implications. [Source: Canadian Press, Toronto]

# *Denver RTD Expands Electric Light Rail*

S.E. LRT corridor to open Nov. 17, 2006 by R. W. Rynerson

Depending on how one counts them, Denver will open two new legs or four new lines in its growing electric rail transit system this November. Three of the new lines will join two existing lines on a busy, 4.75 km Central trunk segment which runs through Downtown, with peak operations totalling 18 trains per hour in each direction. The trunk will see trains at 2.5 minute headways, which will mesh with Denver traffic signals and the free 16th Street Mall Shuttle. Train lengths will initially range from two to three cars, but construction is underway to convert most of the system to permit four-car trains on all but the Welton Street-side neighborhood segment.

As new cars arrive from the manufacturer, Siemens, in Sacramento, the current fleet of various ages dating back to 1994 is being retrofitted with modern features. At present, the Regional Transportation District (RTD) continues to operate with an active fleet of 49 vehicles, daughters of the original Edmonton LRT cars which, in turn, were based on a Frankfurt model. The order now being delivered will bring this up to 83 cars. An option to be exercised after passage of a system-expansion tax measure in November 2004 will bring in an additional 34 cars by 2008. The 2008 delivery will follow production of new cars for Calgary.

Light rail has proven its effectiveness in Denver. Weekday ridership in 1995 averaged 13,000 passenger boardings. The 12-month average ending in October 2005 showed 37,993 boardings per weekday.

Fare collection is modeled on the Edmonton 'proof-of-payment' system, although Denverites usually refer to San Diego and Sacramento as models -- the belief being that Canadians are more honest and therefore can be dismissed as needing an enforceable collection system. A local adaptation was the "hard zone" fare system, in which all passengers crossing a line at Hampden Avenue were expected to have proof of paying a higher fare, a counterpart to the premium Express bus fare.

On July 1, 2006, a "soft zone" fare system based on Portland and Berlin concepts will go into effect. Passengers riding in four zones from the outermost Southeast I-25 stations will pay $3.75 one way to Downtown Denver, but only $1.50 on one or two-zone trips to jobs in the nearby Denver Tech Center. The same customer would pay $2.75 to reach the University of Denver on a three-zone trip. These fares correspond to bus fares for similar length trips. However, the new system favors travel avoiding the "maximum load points" on the rail lines, rewarding customers who find itineraries that avoid congestion.

# *Trolley Buses ring up big savings in China*


The Hangzhou Public Transport Company of Hangzhou, China has a total of 5 subdivisions. The fifth is a para-transit division which operates a large fleet of mini-buses for the disabled; the remaining four sub-divisions operate approximately 900 to 1000 buses each. One is a trolley subdivision that looks after a mixed fleet of both trolleys and diesel buses, with the trolleys numbering about 240 40-foot vehicles.

Like transit operations in most of the world, the Hangzhou company's year end financial report shows all divisions incurred a deficit. But the deficit of the trolley subdivision is as much as ¥10,000,000 (Renminbi) less than its nearest all-diesel subdivision counterpart. This is the equivalent of about $1.25 million U.S. The savings were generated directly from trolley operation. The company attributes the savings to sky-rocketing diesel fuel prices, and the low maintenance cost of trolleys. The trolleys run on heavily used core routes. [Source: Hangzhou Public Transport Company/Z. Jiang]

# *Milwaukee Planners propose Trolley Bus Rapid Transit*

As high gas prices boost the cost of driving, Milwaukee residents may get a look at a long-term alternative. Pete Beitzel, chairman of the Milwaukee Connector study committee, thinks high fuel costs and the realization they are here to stay will boost a plan for a $300 million electric bus system that would link downtown Milwaukee to Miller Park, the University of Wisconsin-Milwaukee and the north side.

The plan is being presented to the public just as a separate $152 million plan is moving forward to extend Chicago's Metra commuter trains from Kenosha to Milwaukee. Transit advocates think it's possible that both systems could start operation between 2009 and 2011.

Planners propose a two-line system that would use reserved lanes, with stoplights set to favor transit vehicles. They estimate it would cost about $9 million a year to run the electric buses powered by overhead wires. But they could replace regular Milwaukee County diesel buses on the same routes, saving all but $540,000 of that sum, and they would qualify for more federal aid than regular buses, said Project Manager Mark Kaminski.

Building a light rail system was originally under study, but was ruled out because of high costs and construction complications. Two options remain under study: a $300 million network of electric buses, or a $157 million system of regular buses with hybrid diesel-electric engines, also in reserved lanes. But planners make no secret of their enthusiasm for the electric bus option. Supporters say guided electric buses would offer the same advantages as light rail at less than half the cost.

The vehicles would pull up flush with platforms, letting passengers on and off through sliding doors. They're also more flexible than light rail, because they can leave their routes for brief stretches to steer around obstructions. [Source: Milwaukee Journal Sentinel, September 13, 2005]

## *Hybrids heat up in Hawaii*

Oahu Transit Services pulled ten hybrid diesel-electric buses from service in late December following the third fire in the past year on these vehicles. City spokeman Bill Brennan said it was a precautionary move. He said the fires were related to emission control equipment and overheating problems on the vehicles, and the bus and engine manufacturers are investigating.

The buses were bought last year at a cost of $749,000 U.S. each and touted as being cleaner and more fuel efficient than conventional diesel buses. But transit officials have expressed disappointment with the vehicles, indicating that they performed poorly on some of the hills in the area. [Source: Honolulu Advertiser, Oct. 14, 2005]

## *Swiss Clean Air measures may mean more Electric Transit*

Switzerland has set itself new air pollution limits based on the Göteborg protocol, which came into effect in the country on December 13, 2005. The new targets are to be met by 2012. The standards agreed to in the protocol will cut sulphur emissions by 40 per cent compared with 1990 levels, nitrous oxide (NOx) output by 52 per cent, ammonia emissions by 13 per cent and volatile organic compounds (VOCs) by over half. The aim is to reduce summer smog and the presence of ozone. The environment ministry hopes that by 2010 air quality will greatly improve in urban areas.

"When the 31 countries that signed the protocol have applied it, sulphur emissions in Europe will fall by 60 per cent, and emissions of ozone precursors NOx and VOCs will drop by 40 per cent," said the Swiss Environment Ministry in a statement. But the Swiss Environment Ministry is not stopping there; it is actually looking beyond the period covered by the protocol, in particular with respect to the reduction of fine particles. One measure under consideration is a further tax on gasoline and diesel fuel. The ministry already implemented a climate levy of 1.5 centimes per litre in October 2005.

Switzerland is home to a number of trolley bus and electric light rail systems. Clean air measures such as this may lead to an increase in the use of electric technologies in public transport, not only in Switzerland but in other countries following the Göteborg protocol as well. [Source: Swiss Info Service at http://www.externe.info/]

## *We get letters . . .*

Dear citizens of the coalition:

I noted that the question of whether or not to continue with electric trolleybuses as part of the transit service in Edmonton has been resurrected by one of your Councillors. Claims of huge savings by abandoning trolleybuses in your city need to be put to rest. When properly managed, trolleybuses have costs over the life of the vehicle that are competitive with diesel. Rising petroleum costs are very likely to make trolleybuses even more favourable in the years ahead. Regardless of the relative size of your trolley and diesel systems, the abandonment of trolleybuses would most certainly be regretted. Alternative technologies like fuel cells are experimental in nature and unlikely to prove practicable or economic in any foreseeable time scale—if ever.

All over the world towns and cities are returning to electric trolleybuses to provide environmentally responsible public transport at an affordable cost that gets people out of cars. The latest recruit to the list is Rome where trolleybuses have returned to the streets after an absence of 33 years. Rome already has light rail but new investment is going into trolleybuses. In central Rome, the trolleybuses even operate without wires on batteries, and garage access is likewise not wired. The trolleybuses can leave the overhead to get round road works, traffic incidents, etc. The batteries are re-charged during normal running under wires.

Edmonton needs to realize the value of having a significant amount of trolleybus infrastructure already in place. Investing in trolleybuses, as is being done elsewhere, would appear to make far more sense than destroying a large public asset. Modern electric trolleybuses DO attract passengers, have permanent infrastructure and are clean and green like light rail but cost overall much the same as buses. Trolleybuses in cities like Arnhem, Athens, Lyon, Moscow, Salzburg, San Francisco, Vancouver and now Rome, demonstrate this every day.

Trolleybuses represent a reliable and proven technology in a wide variety of climates and service conditions. Your local Council needs to be encouraged to view proposals to scrap trolleybuses with a critical eye, and consider the many advantages trolleybuses would have for your City now and in the future.

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