TRANSIT TALK

Volume 8

News and Info Bulletin of the Edmonton Trolley Coalition

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Vancouver Proposes $11 Million Trolley Expansion

Tests New Trolley Equipment

The Greater Vancouver Region's transit authority *Translink* is recommending to its Board of Directors the approval of major extensions to the Vancouver trolley bus system at a total cost of approximately $11 million dollars. The expansion will take place in three phases and goes hand in hand with the opening of the new Eburne Depot, which will house Vancouver's new trolley fleet. Plans will see trolley wire extended from SW Marine Drive along Marine Drive to Victoria Street. The first phase of the planned expansion, to be built in 2005, will cost about $1.1 million. The second phase, scheduled for 2006, will cost about $7.9 million and phase three, slated for construction in 2007, rings in at $1.8 million. The expansion will add roughly 11 km of trolley bus overhead wire to the Vancouver system.

Low Floor Trolley Buses hit the streets of Boston late last year, as the Massachusetts Transit Authority took delivery of 28 of the vehicles built by Neoplan/Skoda. The trolleys are being used on the new Piers Transitway, a high speed transit project in South Boston. [Source: *Boston Globe*]

Vancouver residents have long supported the quiet and emission-free service provided by electric trolleys. *Translink* recently demonstrated its commitment to these quality of life values by ordering a new fleet of trolley buses from New Flyer Industries of Winnipeg. The new vehicles will be state-of-the art, featuring unique styling and the latest in 21st century technology. The new AC electric propulsion package is said to be the epitome of reliability and low maintenance.

Currently, a new type of trolley pole is being tested on one of Vancouver's existing trolley buses. The new poles, made by Kiepe Elektrik of Germany, are made of aluminum coated with fiberglass. They are extremely light in weight and use a new type of spring-tensioned shoe—the device that makes contact with the overhead wires. The new equipment allows trolleys to travel at much faster speeds around curves and through crossings—places where older equipment required trolley drivers to slow down. As well as permitting higher speeds, the risk of dewirement—losing contact with the overhead wires—is greatly reduced. If tests are successful, the upcoming generation of Vancouver trolley buses will feature the new equipment.

[Source: *Transit Vancouver News*]

Seattle's New Hybrid Buses a Fuel Economy Failure

There has been much focus in the transit industry on hybrid diesel-electric buses as of late. The buses, which cost about 1.75 times as much as their diesel counterparts, use a diesel engine combined with an electric drivetrain. The technology incorporates a battery energy storage system to store energy produced by a diesel-driven generator as well as energy recovered during braking. The electric drivetrain has the effect of evening out the load on the diesel engine, allowing it to operate at or near its most efficient point. Manufacturers have touted the technology as both energy efficient and lean on emissions, claiming the extra purchase cost of the bus can be recovered through fuel savings. Hybrids are supposed to use 40-60% less fuel.

But real world experience in Seattle shows the technology has fallen short of promises. In fact, according to a report in the December 13th issue of the *Seattle Post Intelligencer*, the hybrids often get worse fuel economy than the old dual mode buses they replaced. In May of 2004, County Executive Ron Sims told the public the 235 new vehicles would save 750,000 gallons of fuel a year over their predecessors.

Seattle's King County Metro now has the world's largest fleet of hybrids. At the time, they looked like the best choice for Seattle's 1.3 mile long downtown bus tunnel which buses will have to share with a 1,000 Volt light rail system starting in 2009.

While the hybrids with their smaller diesel engines produce fewer emissions than regular diesel buses, and are faster on hills and expressways, the fuel efficiency just isn't there. According to Dennis Pingeon, Metro's vehicle maintenance supervisor, the hybrids don't average much better than 3.6 miles per gallon. The old Breda dual mode buses, whose diesel drivetrains had a reputation for unreliability, got about 3.8. The poor fuel economy has even resulted in the hybrids being restricted in terms of what routes they can be used on. They cannot handle the longer 400 mile routes because they are at risk of running out of fuel, discovered Pingeon.

"This is an unanticipated development," Pingeon wrote. "We had expected the mileage figures to be much better -- these figures are below our current Breda and conventional diesel New Flyer buses."

Jim Boon, vehicle maintenance manager, agreed the hybrids were getting about the same mileage as older buses. That's not what was expected. In an October 2002 e-mail, Boon said, "The vendor indicates that hybrid buses can achieve up to 60 percent in fuel savings." When ordered, Metro itself was claiming they could reduce fuel consumption up to 40%. Boon blames emission control devices installed on the Caterpiller diesel engine for the poor economy.

Caterpiller engine spokesman Jim Dugan commented that "emissions coming out of our engines today are dramatically better than for a bus of 1989. The tradeoff is your fuel economy is not as good." Of course, fuel economy is directly related to transit operating costs. With the price of diesel fuel soaring in the U.S., many transit agencies had looked to hybrids as a means of controlling costs. Turns out the hybrids may not offer much help.

Irvine Bell, Chartered Mechanical Engineer and spokesperson for the London-based TBus Group, said the dubious fuel economy of the hybrid bus comes as no surprise. "The advantages of hybrid buses are realized only under very specific types of operating conditions. Express service, busways and high speed transit are not an optimal use of hybrid technology. It is not an all-purpose bus."

While Seattle's Metro has not yet experienced maintenance issues with the hybrids, other agencies, like TIAX in Cambridge, Mass., cite reliability issues as one reason for delaying the purchase of hybrid vehicles. With two separate systems on board, there is greater potential for failure. Tests of hybrid buses in San Francisco found them less reliable than diesel buses. The need to replace batteries on a regular basis would also be expected to have an impact, adding further to the costs of running hybrids.

[Sources: *Seattle Post-Intelligencer*, Dec. 13, 2004; I. Bell, TBus Group]

Bus Users at Higher Risk from Air Pollution, says study

A study by the *Institute of Epidemiology* and the *Institute for Health Economics* in Germany found a correlation between exposure to vehicular traffic and the onset of heart attacks.

A combination of factors is believed responsible for the observed association, including vehicle emissions, noise, and stress. Notably, the study adds to existing evidence that there is a relationship between the level of exposure to air pollution and health problems. Toxins and fine particles released in vehicle exhaust have long been blamed for contributing to heart and lung disease. But prior to this undertaking, no study had ever looked to see if there was any correlation between exposure to pollution and major health trauma such as heart attacks, within a measurable time frame after exposure.

The German study, published in the October 21, 2004 issue of the *New England Journal of Medicine*, examined 691 subjects from 1999-2001 who had suffered heart attacks. It tracked their activities in the four days immediately before the onset of symptoms.

The study identified a definite association between the time spent commuting in cars, on public transit or on motorcycles or bicycles and the onset of a heart attack. The greater the time spent in vehicular traffic, the greater were the chances of suffering a heart attack in the first few hours after exposure. Physical exercise was found to have little effect on the results.

One interesting finding was that people who spent their commuting time on public transit were discovered to be at greater risk than those who traveled in cars. The odds ratio of suffering a heart attack within one hour after traffic exposure was 2.6 for car commuters, but 3.09 for those who used public transit. After two hours, the odds ratio for car commuters dropped to 1.94, but for transit users it was 2.13. One explanation for the findings is that transit users who travel on diesel buses are frequently exposed to higher levels of toxic particulate. Diesel exhaust is known to be far more toxic than the emissions from gasoline automobiles. A report commissioned for the *Edmonton Transit System* in 2004 revealed that exposure to toxic particulate in the vicinity of diesel buses at bus stops could be as much as *40 times* the levels in average urban air.

[Sources: Annette Peters, et. al., "Exposure to Traffic and the Onset of Myocardial Infarction," *New England Journal of Medicine*, October 21, 2004; Booz, Allen and Hamilton, *Trolley Operations Review,* January 23*,* 2004, p. 26.]

NEWS NEWS

Philadelphia's

South-Eastern Pennsylvania Transportation Authority (SEPTA)

Is inviting proposals for the supply of:

40-foot Low Floor Trackless Trolley Buses

(RFP No. 035APA-1)

Deadline for Proposals: Thursday, March 31, 2005 at 4:30 p.m.

Information: Anthony Angelone at 215-580-8314

Centre for Sustainable Transportation identifies need to invest in Alternatives to Diesel and Gasoline Power

While there may be disagreement among geologists and economists as to when it will happen, it is a sure thing that world oil production is going to peak and decline in the not-too-distant future. The inevitable consequence will be soaring oil prices. Postponing peak production through conservation is one coping strategy that has been suggested. To achieve this, a reduction in consumption is necessary.

The *Centre for Sustainable Transportation* (CST) in Mississauga, Ontario has done much monitoring of the oil situation. In the June 2004 edition of its publication *Sustainable Transportation Monitor* it recommends that reducing fuel use be the primary overriding goal of Canadian transport policy at this time. That reduction can take place by using vehicles more efficiently and developing more efficient vehicles, and it can take place by switching to non-petroleum energy sources where possible. In the long term, the CST recommends securing much greater use of vehicles that draw their energy from overhead wires or a rail rather than on-board sources like a gasoline tank or a hydrogen storage tank.

Without seeking to burst any bubbles, the CST quite matter-of-factly states that the excitement about hydrogen as a future fuel is not realistic. With nearly all of the hydrogen in the U.S. being produced from natural gas, and natural gas supplies themselves being limited, the only low cost source of hydrogen is likely to be depleted before children born in 2004 reach middle age. The overall energy efficiency of vehicles with on-board fuel sources is also low compared, for instance, to electric vehicles supplied by a conduit.

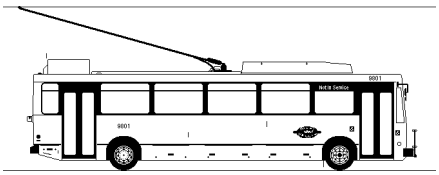
Increasing the energy efficiency of personal vehicles will have some effect on overall oil consumption, but of greater impact would be a strategy to increase the load factors of trucks on our roads. This would increase the energy efficiency of “goods” transportation. More efficient “people” transportation is represented by public transit, an area where the greater use of “tethered” vehicles—trains, trolley buses, streetcars—is practical. These vehicles show much lower operational energy use than vehicles with on-board fuel sources, their primary fuels can include a wide range of renewables and non-renewables, and they involve tried, tested and true technology. These are the features of a more sustainable system of energy supply, says the CST. Even the use of “trolley trucks” for the delivery of specific urban services like garbage pick-up would be a logical step.

Building sustainability into our transportation systems requires leadership and commitment. An early start is also crucial.

[Source: *Sustainable Transportation Monitor*, No. 10, June 2004]

Modern Low Floor Trolley Buses offer:

- full accessibility for all passengers, including persons with mobility impairment
- cleaner streets: zero emissions from the vehicle
- quieter neighborhoods: ultra low noise levels
- freedom from dependence on unstable petroleum fuels
- improved reliability and flexibility



Modern Low Floor Trolley Buses are available now in Canada!

Edmonton’s investment in its trolley system covers 46 core neighborhoods

Modern Low Floor Trolley Buses--the right choice for Edmonton now!

Call to action?
Citizens Action Centre, 496-8200

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Or contact your Councillor.
See the Blue pages of your telephone directory