

Don Bellamy's Rapid Transit Solution (BC Electric Railway Motorman, Retired)  
**“Restore THE POWER OF streetcars NOW”**

Simple solutions that are based on common sense usually have the greatest impact on society. As is often the case, people with practical experience often have a better understanding of the problem, and can see the most efficient, cost effective solutions first. I spoke with Don Bellamy (former Vancouver City Councilor, Police Officer, and BC Electric Railway Motorman) in July 2008, and his solution is the most efficient and financially viable that I have heard, seen or read about. First let's get a global perspective.

In “The Power of Community – How Cuba Survived **Peak Oil**” viewers see Americans visiting Cuba in 2006 to learn what Peak Oil really means. When Russia fell in 1991, Cuba lost over **50%** of its oil imports from **13-14 million** tons down to **4 million** tons. While cars produce pollution, buildings and homes consume **40%** of world energy and produce **50%** of all greenhouse gases. “OIL” Energy is needed for elevators, water supply, heating / cooling, lighting, cooking and food storage, making high rise residential buildings unsustainable. Oil is needed for computers, cosmetics, and plastics.

Cubans call the transition to life without Oil the “Special Period”. It took **5 years** before the pesticide contaminated soil could be brought back to life with composting. Without the OIL based fertilizers (**21,000** tons in 1988 to **1,000** tons in 2006) that produced the 1920's Green Revolution farm food production increase and oil based pesticides needed to reduce pests associated with mono-agriculture, Cuba had to choose Organic farming. Without oil 90,000 Russian tractors sat while the ox and plow on small farms made a comeback. Without OIL Cuba converted trailers to haul 300 people with Semi tractor trucks and trucks with covers instead of buses. Cuba survived “**Peak Oil**”.

The US experienced Peak Oil in 1970 as predicted by Dr. Hubbard and the OPEC Oil embargo in 1973-74 sent the US into panic with gas shortages and Oil jumped to **\$94.28 / barrel**. Interest rates skyrocketed as inflation rose and President Carter moved to improve sustainability and installed solar panels on the White House. President Regan ignored the Peak Oil Crisis, removed the solar panels, and business again maximized corporate profit for capitalism at the expense of people, health, education and democracy.

**Vancouver: Canada's first major Streetcar City**

In 1890 four year old Vancouver (Gastown) built its first Streetcar Line. This radical new technology transformed small horse drawn railway coaches into self-propelled people movers for the masses. Streetcars were so new there was no class, economic, gender, or racial distinctions like railways. From Vancouver (Gastown, now mostly gutted by developers leaving only the facades) the Streetcar railways spread out selling land adjacent to their Streetcar lines. Vancouver was / is the first major Canadian city built as a Streetcar City: sustainable, ecologically-dense (1-12 storeys high), 3 block walk or cycle to transit, economically diverse, multi-cultural, and open to new ideas.

The Interurban Streetcars connected New Westminster with Vancouver the Streetcar City; Chilliwack, Abbotsford, Langley and Surrey with Vancouver; Steveston fisheries and Richmond with Vancouver; Marpole with New Westminster; and Burnaby with Vancouver. Streetcars connected people with homes, food, work and play.

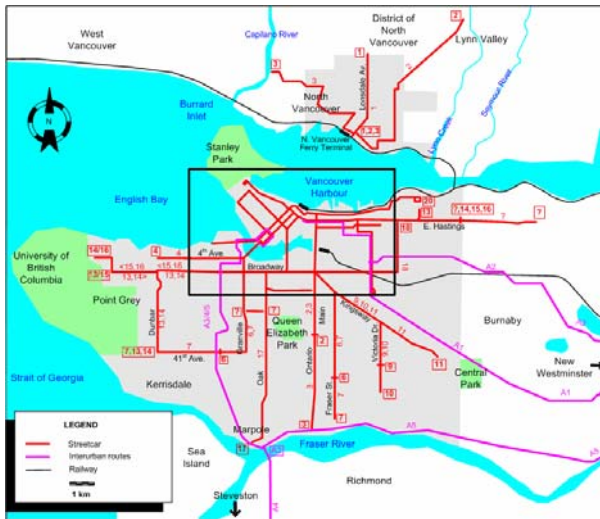
What is a Streetcar City without its Streetcars?

## Vancouver Transportation History:

- 1858 Fort Langley first capital of British Columbia by James Douglas proclamation.
- 1859 Colonel Moody moved the capital to New Westminster for security.
- 1866 Fur trade executives moved the capital to Victoria so decisions could be made without interference from people / businesses on the mainland.
- 1890 February 22 Streetcar service starts in Victoria and on June 26 in Vancouver. US Population: **62,979,766**.
- 1891 North Americas' **first** Interurban line "Central Park line" connects Vancouver (population **13,000**) with New Westminster. Skytrain follows Central Park line.
- 1895 BC plunged into recession and the profits from electricity subsidized transit.
- 1896 May 01, BC's three electric rapid transit rail systems in Victoria, Vancouver and New Westminster were united as the Consolidated Railway Company.  
May 26, Point Ellice Bridge collapsed under overloaded Victoria streetcar with 143 passengers. 55 passengers, mostly children die. Victoria was blamed for not maintaining bridge, but Consolidated Railway Company went bankrupt.
- 1897 April 15, **British Columbia Electric Railway Company** was launched.
- 1899 December 15, Nelson Electric Tramway Company started.  
William Armstrong bought Vancouver / BC's first car, a Stanley Steamer \$650.  
US Auto Production 1899-1901: **2475**. [www.wikipedia.org/wiki/U.S.AutomobileProductionFigures](http://www.wikipedia.org/wiki/U.S.AutomobileProductionFigures)
- 1900 **64 Million** barrels of **oil** are recovered world wide. US Population: **76,212,168**.  
Canadian Population: **5,301,000**. 1901 Vancouver Population: **29,000**.
- 1902 October 31, John Hendry made first purchase of gasoline for a car in Canada.  
[www.vancouverhistory.ca/chronology2.html](http://www.vancouverhistory.ca/chronology2.html)
- 1903 US Great Northern Railway cut a one mile trench (Grandview Cut) under Commercial Drive at Broadway to reduce grade and fill in False Creek.
- 1904 July 23, **\$1 Million** New Westminster Rail Bridge opened to connect New Westminster and Surrey. Royal Metal, Barry Sanford; [www.vancouverhistory.ca](http://www.vancouverhistory.ca)
- 1906 September 03, North Vancouver BC Electric Railway service began.
- 1908 Henry Ford introduced the Model T. US Auto Production: **43,583**.
- 1910 The **\$1,750,000** cost to build a trestle through Sumas Lake was rejected so the BC Electric built the line along the base of Vedder Mountain to Chilliwack.  
May 01, BC Electric "Milk Run" freight train began between Langley and Vancouver and on July 01 passenger service was added to the freight train.  
**October 03**, BC Electric Railway opened to Chilliwack. Vancouver express to Chilliwack 2-1/2 hours\*. US Automobile Production: **129,823**. US Population: **92,228,496**. Canadian Population: **6,988,000**. \*Story of Dunbar, Peggy Schofield
- 1912 BC Electric Railway carried **65,581,267** passengers with **647** vehicles and **416.4** km. (**258.8** miles) of track. Transit in British Columbia, Brian Kelly-riders; Henry Ewert-Track-Length.  
February 12, Pacific Great Eastern Railway (PGE / **BC Rail**) incorporated.  
US Autos: **187,384**.
- 1913 Nelson Streetcars became first publicly owned street railway in BC. Brian Kelly
- 1914 BCER plans to expand to Rosedale from Chilliwack interrupted by WW1.
- 1915 "People of every race, religion and nationality could ride under the same roof for the same fare on streetcars," Henry Ewert making transit a threat to some.
- 1918 Jitney's (jalopies) outlawed. BC: **10,000** cars registered. US Autos: **833,985**.

- BC Rail** (Pacific Great Eastern) 1918-2004, acquired by BC Gov't in 1918 after running into financial difficulties hauling freight with some passenger service.
- 1920-25 Texas and Persian Gulf oil fields usher in era of cheap energy.
- 1920 TTC becomes a Public company.
- 1920 US Autos: **1,453,252**. US Population: **106,021,537**. Canada Pop: **8,434,786**.
- 1921 “In 1921, **GM** lost **\$65 million**, leading Sloan to conclude that the auto market was saturated, that those who desired cars already owned them, and that the only way to increase GM's sales and restore its profitability was by eliminating its principal rival: electric railways. (**GM's Rails to Rubber Plan**).
- At the time, **90 percent** of all **trips** were by **rail**, chiefly electric rail; only one in 10 Americans owned an automobile. There were **1,200** separate Electric Street and Interurban railways, a thriving and profitable industry with **44,000** miles of track, **300,000** employees, **15 billion** annual passengers, and **\$1 billion** in income. Virtually every city and town in America of more than 2,500 people had its own electric rail system. US Auto Production: **1,731,435**.
- 1922 This is not about a "plot" hatched by wild-eyed corporate rogues, but rather about a consummate business strategy crafted by Alfred P. Sloan, Jr., the MIT-trained genius behind General Motors, to expand auto sales and maximize profits by eliminating streetcars. In 1922, according to GM's own files, Sloan established a special unit within the corporation which was charged, among other things, with the task of replacing America's electric railways with cars, trucks and buses.”
- [www.whokilledtheelectricstreetcar](http://www.whokilledtheelectricstreetcar) , Bradford Snell, Edwin Black
- Why was GM losing money while Ford was profitable?
- 1923 BC: **47,000** cars registered. US Autos: **3,110,072**.
- 1924 June 26, Sumas Lake drained by Huntington Council, Provincial Liberal Government, Landowners for valuable farm land, which made it easy to build a road through the former lake for buses to cut 10 minutes off the BCER trip time.
- Draining Sumas Lake, James Murton
- 1928 **BC Rail** (Pacific Great Eastern) passenger service ended November 29, 1928.
- GM** refigderators kill: “Refridgerators in the late 1800’s and early 1900’s used the toxic gases, ammonia (NH<sub>3</sub>), methyl chloride CH<sub>3</sub>CL), and sulfur dioxide (SO<sub>2</sub>), as refigderants. After a series of fatal accidents in the 1920’s when methyl chloride leaked out of refigderators, a search for a less toxic replacement began as a collaborative effort of three American corporations – Frigidaire, General Motors, and DuPont.
- GM** creates **CFC’s**: Chlorofluorocarbons (**CFC’s**) were first synthesized in 1928 by Thomas Midgley, Jr. of General Motors. CFC’s nearly destroyed the earth’s atmosphere. “For the American people the cost of ultraviolet radiation protection (sunscreen etc.) for 100 years,1975–2075, of **\$1 Trillion** is not a just distribution of benefits and burdens compared with **\$350 Million** in profit for corporations”.
- [www.cmdl.noaa.gov/noah/publicitn/elkins/CFC's.html](http://www.cmdl.noaa.gov/noah/publicitn/elkins/CFC's.html)
- 1930 US Autos: **2,477,532**. US Population: **123,202,624**. Canada Pop: **10,208,000**.
- 1932 March 19, **Sydney Harbour** Bridge, Australia built by Dorman Long & Co UK 1875-present, opened. 2004 Guinness World Record – widest bridge – **12** lanes. July 01, **\$3 Million** - 6 lane **Burrard** Street Bridge opened with the **lower level** designed **for** two full heavy rail trains including **Streetcars**.

- 1935 Chevron originally known as **Standard Oil of California** (SoCal- 1879), opened a refinery in Burnaby, British Columbia.
- 1936 January, Chevron opened 2,000 barrels/day Stanovan Refinery in Burnaby, BC.
- 1937** National City Lines was started by the Fitzgerald brothers who were bus drivers in Minnesota. Somehow the barely educated Fitzgerald's got millions of dollars to buy or control electric streetcar systems in over 40 cities. National City Lines usually bought the streetcar systems, removed the tracks, burnt or demolished the bodies and sold the trucks (wheels) and track. Gas buses (**19 lbs** of pollution per gallon) were unleashed on the environment and Global warming increased.
- November 15, **Pattullo Bridge** opened. The narrow, dangerous "**\$4 Million** four – lane bridge opened and 5000 cars crossed (60,000 / day 2007)". SENIOR LIVING, Archie Miller· US Autos: **3,398,569**.
- 1938 December 4**, last day of Streetcar service in New Westminster.
- 1939** "Vancouver had **25** gas buses on the eve of WW11, but the BC Electric Railway had over **647** electric streetcars. Wartime transit use was so heavy that Sig Sigmundson (who became the BC Electric Railway transportation manager after the war) of Canada's War Allocations Board determined all new orders for buses in every Canadian city." Transit in British Columbia, Brian Kelly· No new trams streetcars / interurbans were ordered. "One streetcar moves as many people as six standard buses." UBC Landscape Architect Prof. Patrick Condon
- 1940 US Autos: **2,757,977**. US Population: **132,164,569**. Canada Pop: **11,381,000**.



1940 Streetcar - Interurban Maps

<http://www.tundria.com/trams/CAN/Vancouver-1940.shtml>

- 1944** Los Angeles Streetcar / Interurban system carried **132,000,000** passengers. **BC Electric** carried **144,272,508** passengers: Streetcars & Interurbans carried **141,445,964** passengers; buses only carried **2,836,544** passengers. Henry Ewert  
US population: **138,397,345**. US Auto Production: 1943: **0**. 1944: **0**.
- 1946** **BC Electric** carried **156,091,301** passengers: Streetcars / Interurbans carried **~153,046,000** passengers; Buses: **~3,045,000** riders. STORY OF B.C.E.R., Henry Ewert  
Railways had to maintain their operations without **subsidies**. So, **Vic Sharman** moved from Motorman to become BCER Manager of Planning and Scheduling.

- GM's 1921 "Rails to rubber" plan successfully convinced Canada / US gov'ts to use taxpayer dollars for road construction for cars and buses = global warming.
- 1947 BCER ordered 82 Brill electric trolley coaches from Canadian Car and Foundry. North Vancouver streetcar service ends.
- 1948 August 16, BCER trolley buses started regular service in Vancouver.
- 1950 **September 30**, last Interurban tram to Chilliwack from New Westminster.  
US Autos: **6,526,809**. US Population: **150,520,798**. Canada Pop: **13,712,000**.
- 1953 Chevron Trans Mountain Pipeline (oil) completed from Edmonton to Burnaby, BC., as SoCal discovered the world's largest oil field ([Ghawar](#)) in Saudi Arabia.
- 1954 Chevron (SoCal) was producing an average 11,000 barrels of oil per day in BC.  
**July 16**, last Interurban run on the Central Park line.
- 1955 BC Electric Building (**Electra**). Architects: Sharp Thompson Berwick & Pratt.  
**April 24**, BC Electric Rail Streetcar Rapid Transit ends in Vancouver.
- 1957 Sept 27 Buzzer, 627 vehicles best maintained trouble free 4.9 yrs in N. America.
- 1958 **February 28**, Last Interurban to Steveston ends **68** years of BC **Rapid Transit**.
- 1961 August 01, BC Government expropriated the private BC Electric Co. to gain control of the Provinces Hydro Electric power, "biggest **Socialist** Act in BC history" Picture History of British Columbia", George Woodcock
- 1960 US Autos: **6,096,813**. US Population: **179,323,175**. Canadian Pop: **17,870,000**.
- 1960-79 The freeway building boom results in gridlock, pollution and global warming.
- 1964 Highway #1 built to cut and divide major Fraser Valley farms for developers.  
Highway #1 built on top of part of BC Electric Burnaby Lake railway line.  
The tiny curved **Port Mann** Bridge opens as Canada's most expensive piece of highway, and is filled to twice its four lane capacity in a decade. (See 1932).
- 1967 Bennett Dam built with Turbines made in the USSR during the Cold War.
- 1970 December, US Peak Oil production **10.2 Million** barrels/day; **6.9 Mb/d** in 1980.  
US Autos: **7,887,846**. US population: **203,183,772**. Canada Pop: **21,297,000**.
- 1972 Greater Vancouver Regional District plans to restore BC Electric rapid transit.
- 1973 Urban Transportation Development Corporation (UTDC) created by the Ontario Government to develop transit vehicles. **UTDC** developed new **Skytrain** innovative steerable suspension to reduce wear for light rail cars.  
**April 18**, Agricultural Land Reserve to protect BC Food-lands passed.
- 1973-74 OPEC Oil embargo creates shortages and Oil hits **\$94.28** / barrel.
- 1975 "Mid-August, BC NDP Government purchased BC Electric interurban cars **1220** and **1231** back from the US for **\$5,000.00** each". Story of BCER, Henry Ewert.  
"September BC Government bought 1970 Siemens Electric Light Rail Vehicle Streetcar for **\$150,000.00** from West Germany" Story of BCER, for the Greater Vancouver Regional District, after 1970 US Peak Oil and 1973-74 Oil embargo, to restore BC Electric Railway Greater Vancouver Rapid Transit system from Vancouver to New Westminster on Central Park (Expo) line out to Surrey / to Coquitlam **Evergreen Line** and to Richmond **Arbutus Line** / Vancouver Airport for **\$430-558 million** including a fleet of new Streetcars.  
**December 11**, NDP voted out as "**socialists**" for Agricultural Land Reserve to protect 5% of BC land most critical to food production by Business, Media, Liberals, Conservatives, and Social Credit (see **1961**) expropriation of BC Electric Co., claiming NDP were taking away private lands like Communist Russia.

[http://www.alc.gov.bc.ca/publications/Alr\\_history.htm](http://www.alc.gov.bc.ca/publications/Alr_history.htm)



**Vancouver Sun**  
 January 28, 1976.  
**Siemens 1970 Electric Streetcar #601** arrived in Vancouver to restore BC **Rapid Transit**. Newly elected Politician decided to ignore Greater Vancouver Regional District (GVRD) / previous 1972 -1975 Premier / Vancouver City / **Rapid Transit Plan**. Almost 12 years later Politician quietly sold it for **\$1 dollar** to Edmonton to avoid questions about spending **(2.6 X more) \$1.45 Billion** for only **21.4 km** Skytrain Expo line from Vancouver to New Westminster.



- 1976** January 28, **Siemens LRV Streetcar** arrived. Politics cost BC the inexpensive upgrade of the existing **377 km** Greater Vancouver 1890-1958 BC Electric Railway **Rapid Transit System**.
- 1977** Greater Vancouver Regional District GVRD / Vancouver LRT studies show the Central Park line from Vancouver to New Westminister best for **Rapid Transit**. June 17, **Seabus** operation started between Vancouver and North Vancouver.

DAY	DATE	PLACE	ADDRESS	TIME
Mon.	Nov. 22	Kingsway	3400 Kingsway	7:30 PM
Tue.	Nov. 23	Westminster	1000 West 1st St.	7:30 PM
Wed.	Nov. 24	Kerrisdale	1500 West Broadway	7:30 PM
Thurs.	Nov. 25	Downsview	1500 West Broadway	12 noon
Thurs.	Nov. 25	Surrey	1500 West Broadway	7:30 PM
Mon.	Dec. 4	Coquitlam	1500 West Broadway	7:30 PM
Tue.	Dec. 5	Richmond	1500 West Broadway	7:30 PM
Wed.	Dec. 6	Burnaby	1500 West Broadway	7:30 PM
Thurs.	Dec. 7	Coquitlam	1500 West Broadway	7:30 PM
Mon.	Dec. 11	Downsview	1500 West Broadway	7:30 PM

**1978 GVRD Poster: Expo, Evergreen & Canada Lines, Pattullo Rail Bridge, Streetcars; \$558 Million**

- 1978** GVRD **Rapid Transit Project** using the Siemens Streetcar was planned to reconnect Vancouver, Burnaby, New Westminster, Coquitlam (Evergreen Line), Surrey and Richmond + Airport (Arbutus Line). [www.trolleybus.ca/errs/601.htm](http://www.trolleybus.ca/errs/601.htm)
- 1979** **December**, GVRD **Rapid Transit Project** Full System Costs: Construction **\$349 - 460 million**, New Streetcars **\$81 - 98 million** = Total **\$430 - 558 million** (at grade or elevated and with subways). [www.gvrd.bc.ca](http://www.gvrd.bc.ca)  
 A year later Politicians made taxpayers pay **\$1.45 Billion** for **21.4 km** UTDC Skytrain Vancouver to New Westminster to investors. City Making in Paradise, M Harcourt. Toronto Transit Commission (TTC), North America's only city to continue to run Electric Streetcars since 1920. TTC - **Subways** now too expensive to build.
- 1980** February, Goals for Vancouver City Planning: Transit: Goal 2: "Improve automobile circulation in the city by the management of existing facilities, rather than the development of new roads, widening of existing roads, etc." Vancouver City Planning Commission, February 1980.  
**1970's** traffic jams were blamed on BC's lack of rapid transit. BC expropriated BC Electric in 1961 to control Electric Power after killing its Electric Railway **Rapid Transit** System in **1958**. **Rapid Transit** lost to Electric Power in 1961. **December 06**, BC Gov't history of short term flash projects that only benefited investors – **1937** Pattullo Bridge: expensive, dangerous, narrow, sinking; **1964** Port Mann Bridge: Canada's most expensive piece of highway, seismically failing/ plugged in a decade, tiny, curved, four lanes; **continued** as **Politicians** made taxpayers pay **\$1.45 Billion** for "**21.4 km**" [www.urbanrail.net](http://www.urbanrail.net) UTDC Skytrain Vancouver to New Westminster link to show off for Expo 86 for investors. **1912** BCER: **377 km** (Lower Mainland) and **647** Streetcars. Skytrain ART cannot run on street rail lines like modern Portland style LRVs. US Autos: **7,602,080**. US Population: **226,545,805**. Canada Pop: **24,516,178**.
- 1982 March 01, BC Premier launched UTDC Skytrain groundbreaking.
- 1983 May 10, British Columbia Electric Railway Company dissolved. BC Hydro Rail continued to haul freight on the Central Park line to 1993; BC Electric Rail as Southern Railway of BC hauls freight on BCER line Surrey to Chilliwack. <http://www.busweb.co.uk/bctransit/HTML/bcer.htm>
- 1985 Skytrain demonstration rides along Terminal Avenue from Main Street Station. **March**, Toronto Transit Commission (TTC) in the early 1980's proposed to extend the [Bloor-Danforth line](#) using [streetcars](#) operating in a private right-of-way, but the ICTS system (Skytrain) was used instead because the **Province of Ontario** agreed to **pay a large portion** of the costs. Largely because of the relatively high cost of the [ICTS \(Skytrain\)](#) technology for the service it provides, the six station **6.4 km** line has seen no extensions since it opened. Many transit advocates believe it would have been wiser to build it using **streetcars**, as was originally planned, for **lower** costs and more flexibility in route options, or to simply extend the underground [Bloor-Danforth line](#) further into Scarborough.
- 1986** **January**, after four years the **\$1.45 Billion 21.4 km** Skytrain Expo line opened from Vancouver to New Westminster above the abandoned BCER Central Park line. BC paid **\$854 million** to try Skytrain, Canada/ Ontario paid **\$600 million**. **Lavalin** paid Province of Ontario **\$50 million** for **85%** of UTDC (Skytrain).



Expo 86: Japanese Magnetic-Levitation train demonstration trains smooth ride overshadowed Grace McCarthy's **\$1.45 Billion** Skytrain.

**British Railbus** ran passenger rail service from New Westminster Quay to Abbotsford on the old BC Electric tracks for **\$12.00** return during Expo 86. **Railbus** ridership was so heavy that the BC Government halted service part way through Expo 86 to stop the public - voters from demanding the government reactivate passenger "Rail for the Valley" service.



British Railbus at New Westminster Quay set for Abbotsford

**1987** Siemens 1970 Streetcar #601 sold to Edmonton for **\$1.00** (cost **\$150,000.00**). Siemens installed new 4" wide wheels to run on Edmonton heavy rail tracks.



2006: Vancouver Streetcar #601 runs in Edmonton. [www.trolleybus.ca/errs/601.htm](http://www.trolleybus.ca/errs/601.htm)



- 1990 Skytrain made **16,662,634** passenger trips. 1946 BCER Trams **~153,046,000**. US Autos: **4,748,310**. US Population: **248,709,873**. Canadian Pop: **27,700,856**.
- 1991 Lavalin** goes bankrupt. **Bombardier** acquires UTDC (**Skytrain**).
- 1995 November, Westcoast Express commuter rail service Vancouver Waterfront to Mission began. Unregulated **GM** diesel locomotive engines pollute profusely. Proposal for **RAV - Richmond, Vancouver Airport, Vancouver LRT** started.
- 1998 Vancouver Downtown Historic Railway** began running restored BC Electric Interurban tram 1207 on old freight rail line between Granville Island and Leg-In-Boot Station; later extended to Science World with tram 1231. [www.trams.ca](http://www.trams.ca)



1905 BC Electric Tram #1207



1912 BC Electric Tram #1231

- 2000 29 Billion** barrels of **oil** recovered world wide. US Auto Production: **3,667,928**. US Population: **281,421,906**. Canadian Population: **30,689,239**.
- 2001 April to August, Translink Bus Strike occurred. Vancouver skies cleared. Each diesel bus created the equivalent pollution of 65 cars. BC Gov't ignored the required **Port Mann** Bridge **earthquake** retrofits.
- 2002** January 02, **\$1.1 Billion, 19.1 km** Millenium Line Skytrain opens with 60 Mark 11 Skytrain **22,300 kg** (empty) Streetcars; **Capacity: 171 /car = 10,260**.
- 2003 BC Gov't ignored revival of BC Electric Vancouver-Steveston line as Arbutus residents fears of Skytrain Station crime blocked using existing rail lines.
- 2004** June 30, Translink voted twice to defeat the RAV line (Richmond – Airport – Vancouver) proposal (now Canada Line). A third vote passed when a Mayor changed their vote in fear to stop Portland style LRV Streetcars from running pollution free in Vancouver on the BC Electric Railway Rapid Transit tracks which closed in 1955. Siemens Canada Line cost **\$2.05 Billion**. **July 08**, Georgia Strait: UBC Prof Patrick Condon report showed: Vancouver could restore **175 km** of BC Electric Streetcar / Interurban lines, and add new lines and streetcars to turn Vancouver into a pollution free city for the same **\$2.8 Billion** cost for the **12 km UBC Skytrain subway**.

**BC Rail (Pacific Great Eastern-1912):** On May 13, 2003, British Columbia Premier announced that the government would **sell** the operations of the railway (including all of the assets other than the rail right-of-way). During the previous election, the Premier had

specifically promised not to sell the railway and he maintained that he was keeping this promise, by retaining ownership of the right-of-way and only leasing the land to the operator. On November 25, 2003, it was announced that Canadian National's (CN) bid of **\$1 billion** would be accepted over those of several other companies. The transaction was closed on **July 15, 2004**. The original lease of the rail right of way was for 60 years with a 30 year option to renew. However, it has been reported that there are another fifteen 60 year options to renew the lease in the contract documents and CN would not have to pay anything additional to keep operating for **990** years. At each of these renew dates, the BC gov't would have the option of buying back all of the assets from CN. Conversely, as of **July 15, 2009**, the fifth anniversary of the contract, **CN** has the **right to decommission** any part of the line it wishes, and upon doing so the **government is obliged to sell CN** any related BC Rail-owned lands for the sum of **one (1) dollar**. Since the sale, Canadian National Railway has contributed more than **\$152,750.00** to BC Liberal party.

[www.absoluteastronomy.com/topics/BC\\_Rail](http://www.absoluteastronomy.com/topics/BC_Rail)

**2005** July 29, BC Gov't **abandoned** UTDC Skytrain. **\$Billions** of taxpayer dollars were lost since 1982 as the Siemens heavy rail Canada line cars **CANNOT** run on Skytrain tracks creating two **ORPHAN** systems. (See 1975-1978 and 1982). November 25, Rotem (Hyundai) will supply trains incompatible with Skytrain.

**2006** **World Peak Oil** predicted by Burnaby confirmed and Energy costs start to rise. "The (Toronto) TTC is currently assessing extending the ART from McCowan to [Malvern Town Centre](#). In **2006**, a study was completed on the prospects of this line. It recommended upgrading the line to handle larger (Skytrain) [ART](#) Mark II vehicles, at a cost of \$360 million (2006 dollars). Extending the [Bloor-Danforth line](#) (subway) either along the current Scarborough RT route, or along a different alignment directly to [Scarborough Centre](#) was **not considered cost-effective** or **justifiable**". [http://en.wikipedia.org/wiki/Scarborough\\_RT](http://en.wikipedia.org/wiki/Scarborough_RT) If Toronto cannot justify extending a **subway**, how can BC justify Canada Line or UBC **subways**?

January 06, Millennium Line extension to VCC Clark Station opens.

**2007** Skytrain carried **42,127,251** of Translink's **173,000,000** passengers compared to 1946 BC Electric Streetcars: **~153,046,000** passengers (**65,581,267** in 1912). GM lost **\$38.6 Billion** in 2007 and **\$15.5 Billion** from April to June 2008.

"US spends **\$4 Billion** per week on oil imports". Escape from Suburbia

**2008** The pollution free solution: "**Rubber back to (Electric) Railways**" is the goal of every major city in North America trying to restore their Electric Streetcar / Interurban railways [www.bera.org/pnaerc-orginfo.html](http://www.bera.org/pnaerc-orginfo.html) and to run LRV like Portland. Mexico, Europe, Russia, Scandinavia, Asia maintained their Electric railways. BC Government announced **\$14 Billion** Gateway Plan for Investors.

**World Peak Oil** predictions come true as Oil reaches **\$147.00 / barrel**, the price at the pumps jumped to over **\$1.50** per litre.

World consumption **86 Million** barrels per day and climbing.

Today, some refineries can turn more than half of every 42-gallon barrel of crude oil into gasoline. That's a remarkable technological improvement from 70 years ago, when only 11 gallons of gasoline could be produced. How does this transformation take place? Essentially, refining breaks crude oil down into its various components, which then are selectively reconfigured into new products.

[www.chevron.ca/operations/refining/refineryworks.asp](http://www.chevron.ca/operations/refining/refineryworks.asp) Chevron's refining capacity worldwide is over **2 million** barrels per day. World uses **86 million** barrels/day.

The original **114** Mark I Skytrain cars (1984-1985) will reach the end of their useful life cycle in **2015**. The **16** Scott Road Station Mark I cars (1990) will retire in **2020**. The **20** King George Station Mark I cars (1994) retire in **2024**.

The **60** Millennium Line Mark II cars (2002) retire in **2032**.

2009 May 2, Translink unelected board salaries almost **\$575,000.00** (2008), previous Mayors-Councillors board total salaries **\$122,000.00** (2007) Newsleader newspaper. July, GM goes **BANKRUPT**.

August 17, the **\$2.05 Billion** orphan Canada Line opens as BC abandoned UTDC Skytrain Mark 1 **14,370 kg** (empty) and Mark 11 **22,300 kg** (empty) Streetcars for Rotem Hyundai Heavy Rail **76 tonnes = 76,000 kg** (empty) Subway cars; To meet budget the **\$106.8 million/ km, 19.2 km** Canada Line Subway had to stop at Hastings St - 1 block from Waterfront Station; no cameras for security; dead line single track sections; minimum headway 3 minutes (Skytrain 30 sec - better braking); maximum  $\frac{1}{2}$  car 84 passenger expansion; **Capacity:** 2009 - 40 Canada Line Subway Cars **167 / car = 6,680**; 1985 - 114 UTDC Mark 1 Skytrain Streetcars **106 / car = 12,084**; 2002: 60 Skytrain Mark 11 Streetcars **171 / car = 10,260**; **\$2.05 Billion** does not include security / police; and **\$210-315 Million** Taxpayer operating subsidy to 2025.

September 1, BC Provincial Debt jumps from **\$34 Billion** (2001) to **\$60 Billion**.

### **Light Crude Oil – gone by 2044 - 2050**

BC's **four** million cars traveling **20** miles a day each getting an average **20** mpg burn **four** million gallons of gas and produce **76 million** pounds (**38,000** tons) of CO<sub>2</sub> per day. "Each gallon of gas produces 19 pounds of CO<sub>2</sub>," [www.whokilledtheelectriccar.com](http://www.whokilledtheelectriccar.com) lasting **10,000 years** in the atmosphere. Based on current consumption, light crude oil will be gone by about 2044-2050. There has NOT been a significant new oil field discovery since 1970 [www.crudeawakening.com](http://www.crudeawakening.com), so why is BC building more roads and bridges for a world without oil? Why would BC choose to promote pollution / global warming with more roads for cars, trucks and buses?

### **The 1979 GVRD Streetcar Plan:** Expo, Evergreen, Arbutus (Canada) Lines.

The **GVRD /1972-75 BC Gov't / Vancouver** City Planning in 1975-1979 Plan to restore the BC Electric Railway Rapid Transit system for only **\$430-558 million**. Elevated Expo, Evergreen, and Arbutus (Canada) Vancouver Airport Lines, subways under False Creek, new 6 lane Pattullo Car + Rail Skybridge, & Streetcars. By 2009 **377 km** of BC Electric **Rapid Transit** System could have been restored from Vancouver to Chilliwack (Expo) line, to Coquitlam (Evergreen) line; Vancouver to Airport and Steveston (Canada) line; and an Electric West Coast Express instead of GM diesel locomotives.

**Billions** of pounds of CO<sub>2</sub> lasting **10,000** years would not have been created.

BC would be the Best Place on Earth for everyone, but who got rich?

Instead Politicians spent over **\$5 Billion** on **49.5 km** Skytrain Expo Line, Skybridge, Millennium Line [www.bcbudget.gov.bc.ca/2005/sp/trans/Resource\\_Summary.htm](http://www.bcbudget.gov.bc.ca/2005/sp/trans/Resource_Summary.htm) and the **orphan 19.2 km** Siemens Canada Line Subway, but who got rich?



For Metro Vancouver to be **SUSTAINABLE** in a Peak Oil World before Oil runs out, we need to restore **377 km** of BC Electric Railways so people can get to work / shop / eat / live; restore our lower mainland farm production, since feeding ourselves is the only way we can survive; Using **74%** of average income for housing is NOT sustainable.

**2010** September 29, UBC Streetcars: The Missing Link symposium had everyone on the same page until the Town Hall Meeting when the wheels slipped on implementation. This was critical to the solution. Streetcars are the Missing Transit Technology Link in the Streetcar, LRV, Subway, Bus mix. What connected was missed? Station Design!

Skytrain, Canada line, Bus stations look / feel like prisons with guards with guns & tasers to KILL you for a \$2.50 fare! Riders are customers, not criminals or sardines. Shelters are first and foremost for customer weather protection, advertising is secondary.

Vancouver was built as a Streetcar City. IF you study BC Electric Railway history you discover the beautiful Streetcar City Architecture of Stations, passenger shelters, and friendly signage to enhance riders experience. The Olympic Line looked and felt like part of a Streetcar City. That is what made everyone want to keep the Belgian Streetcars; There was a Driver who smiled, enjoyed driving and thanked you for riding. A Streetcar with Streetcar Drivers, Staff and Stations designed for a Streetcar City.

## **DON BELLAMY'S RAPID TRANSIT SOLUTION:**

*Connect the BC Electric Rail line from Surrey to Chilliwack with an Electric West Coast Express to Vancouver, simple, easy, inexpensive, and pollution free.*

### **2010 Olympic Line – Streetcar Demonstration Line – January 21 to March 21.**

**2010 Vancouver / Bombardier Olympic Line** demonstration carried over **550,000** riders in **60 days** between Olympic Village station and Granville Island station with two modern electric streetcars for the 2010 Olympics.

[www.vancouver.ca/streetcar](http://www.vancouver.ca/streetcar).

Cost **\$8.5 million** for 1.8 km or **\$4.72 million / km**.



If you would like to see what BC lost in 1958 and 1975-1979, please visit:

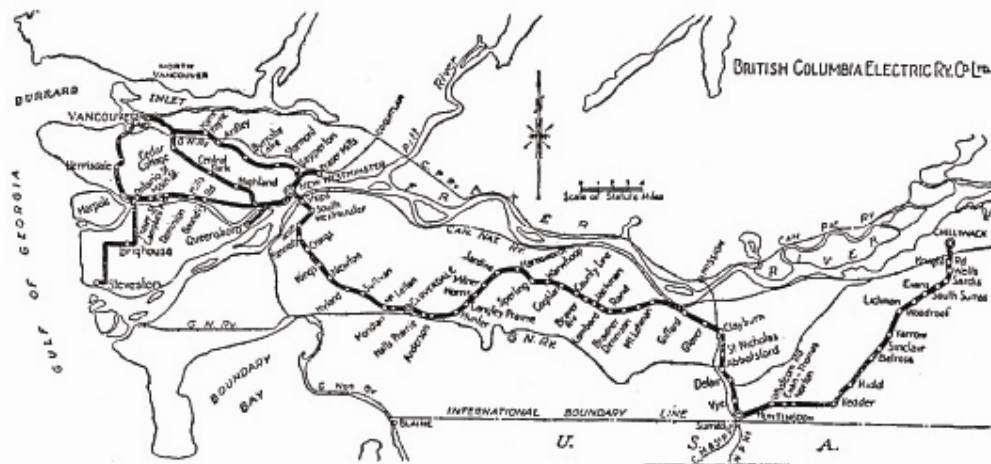
The **Downtown Historic Railway** [www.trams.ca](http://www.trams.ca) at Granville Island / Olympic Village Station on weekends and holidays from mid-May to mid-October to ride historic electric:

- 1905 BC Electric Railway New Westminster built Interurban tram #1207
- 1912 St. Louis Interurban tram #1231. Fares: Adult \$2.00, Senior/Child (5-12) \$1.00.

Also see:

- Steveston 1912 St. Louis Interurban tram #1220 [www.richmond.ca/culture/sites/tram](http://www.richmond.ca/culture/sites/tram);
  - Burnaby Village Museum 1912 St. Louis Interurban tram #1223 [www.burnabyvillagemuseum.ca/](http://www.burnabyvillagemuseum.ca/) ;
  - Fraser Valley Heritage Railway 1912 St. Louis Interurban tram #1225 and 1911 BC Electric Railway New Westminster built tram #1304 [www.fvhr.org/](http://www.fvhr.org/) .
  - Canada Science and Technology Museum 1912 St. Louis Interurban tram #1235 in Ottawa, Ontario, Canada;
  - Streetcar #53 is in the Spaghetti Factory restaurant in Vancouver;
  - Streetcar #153 is under the grandstand in Mahon Park, North Vancouver;
  - Streetcar #400 Birney is in Nelson, BC;
  - Snow Plow #S103 was in Snoqualmie Falls, but may have been moved to Seattle;
  - Electric Freight Locomotive #960 is in West Coast Railway Museum, Squamish, BC;
  - Electric Freight Locomotive #961 is in the Fort Edmonton Park, Edmonton, AB; and
  - Streetcar #601 Siemens German 1970 articulated ALRV is in Edmonton, Alberta.
- If Streetcar #601 had been ordered with heavy rail interurban track compatible wheels it could have saved the entire **377 km** BC Electric Railway streetcar and interurban lines (see Map below) of Metro Vancouver in **1976**, making Vancouver one of the greenest, cleanest (pollution free) cities in the world at a fraction of the cost of UTDC Skytrain and the incompatible orphan Canada Line Heavy Rail subway cars.

[www.trolleybus.ca/errs/601.htm](http://www.trolleybus.ca/errs/601.htm)



British Columbia Electric Railway Co. Ltd. Map showing Interurban portion of the 377 km of Lower - Mainland Interurban & Streetcar tracks. (175 km of Streetcar & Interurban Lines are in Vancouver).

These trams are the only survivors of the 647 BC Electric streetcar / interurban trams in service in 1913. The rest were burnt in Kitsilano by the Burrard Street Bridge.

Greg Pettipas, B.Arch. ©Greg Pettipas 2008-2010.

Standard Railway Track Gauge Trivia:

4 feet 8-1/2 inches (1435 mm) is the width of a Roman Chariot's wheels.

**British Columbia Rapid Transit Costs since 1980:**

**1982 UTDC - SKYTRAIN**

Skytrain Expo (EXPO 86) Line 1985 **21.4 km (\$67.9 Million/ km) \$1.45 Billion**  
Vancouver Waterfront Station to New Westminster Station

**114 Mark 1** Streetcars: weight **14,370 kg** (empty) capacity **106 / car = 12,084 ?**  
(\$854 Million paid by British Columbia, \$600 Million paid by Canada / Ontario.)

**1986 Lavalin / UTDC - SKYTRAIN**

1989 Skytrain Expo Line extension to Columbia Station **0.64 km ?**

1990 Skytrain Skybridge **\$244 Million**

1990 Skytrain Expo Line extension to Scott Road Station **2.3 km ?**

**16 Mark 1** Streetcars: weight **14,370 kg** (empty) capacity **106 / car = 1,696 ?**

**1991 BOMBARDIER / UTDC - SKYTRAIN**

1994 Skytrain Expo Line extension to King George Station **4.4 km ?**

**20 Mark 1** Streetcars: weight **14,370 kg** (empty) capacity **106 / car = 2,120 ?**

**2002 BOMBARDIER - SKYTRAIN**

Skytrain Millennium Line 2002 **19.1 km (\$57.6 Million/ km) \$1.1 Billion**  
Columbia Station to Broadway Station

**60 Mark 11** Streetcars: weight **22,300 kg** (empty) capacity **171 / car = 10,260 ?**

Skytrain Millennium Line 2006 extension to VCC / Clark Drive **0.83 km ?**

**2009 BOMBARDIER - SKYTRAIN**

**48** Bombardier Mark 11 series 2 Skytrain Cars with on-board cameras **\$193 Million**

**48 Mark 11** Streetcars: weight **22,300 kg** (empty) capacity **171 / car = 8,208**

**2010 BOMBARDIER - SKYTRAIN**

**7** Bombardier Mark 11 Series 2 Skytrain Cars **\$28.1 Million**

**7 Mark 11** Streetcars: weight **22,300 kg** (empty) capacity **171 / car = 1,197**

[http://www.bclocalnews.com/tri\\_city\\_maple\\_ridge/tricitynews/news/50486882.html](http://www.bclocalnews.com/tri_city_maple_ridge/tricitynews/news/50486882.html)

**2005-9 SIEMENS - CANADA LINE** (orphan system not compatible with Skytrain)

RAV-Richmond-Airport-Vancouver **19.2 km (\$106.8 Million/ km) \$2.05 Billion**

Stops about 1 block short of Waterfront Station to Richmond or YVR Vancouver Airport.

**40** Heavy Rail Subwaycars: weight **76,000 kg** (empty) capacity **167 / car=6,680 ?**

Subway Station Size reduced to two Car trains to save money, no room for expansion.

BC taxpayer subsidy to Canada Line: **\$14-21 Million** a year to 2025 **\$210-315 million**

November 21, 2009 [jnagel@blackpress.ca](mailto:jnagel@blackpress.ca) Newsleader newspaper.

**2009 TOTAL COST:..... \$5.3-5.4 Billion ?**

**1979 GVRD Rapid Transit Project Cost: \$430-558 million**

**DIFFERENCE \$4.7-4.9 Billion**

But no **Evergreen Line**, no new 6-lane **Pattullo** car and Rail Bridge, and 30 years of needless Billions of tons of CO<sub>2</sub> pollution created, but who got rich?

If Cuba can survive Peak Oil and Toronto still has electric Streetcars, what is stopping BC?