

Greater Victoria Light Rail Society

P.O. Box 8737, Victoria BC V8W 3S3

and

IslandTransformations.Org

2010 TRANSIT SURVEY

RAPID TRANSIT, VICTORIA TO WESTSHORE

PURPOSE: to determine what citizens and businesses want for the rapid transit service between Westshore communities and downtown Victoria on the route [now proposed by BC Transit](#).

THE ROUTE:

- Douglas Street, and / or Government Street, from Belleville to Hillside.
- Douglas Street to Carey Road (Uptown Mall — formerly Town & Country)
- Highway #1 / Galloping Goose Trail to Colwood / Six Mile Exchange
- Island Highway to Colwood Corner, and then to Langford Transit Exchange

TIME PERIOD OF SURVEY: 1 February to 31 March, 2010

TECHNOLOGIES CONSIDERED:

1. [Diesel-powered buses](#) on a busway (A dedicated concrete right-of-way)
2. [Electric-powered \(trolley\) buses](#) operating on a dedicated busway
3. [Electric-powered streetcars](#) operating on jointless steel rails on a dedicated right-of-way

A COMPARISON OF TECHNOLOGIES:

Detail	Diesel Bus	Electric Trolley Bus	Electric Streetcar
Space Needed – Width (1)	2 lanes: 9-10 metres	2 lanes: 9-10 metres	2 tracks: 7.5 metres
Capital Cost (incl stations) per km of right-of-way (2)	\$30 million per Km	\$31.5 million per Km Incl overhead power	\$29 million per Km Incl overhead power
Passenger capacity (3)	60	60	180
Vehicle cost per unit (4)	\$700,000 x 3	\$900,000 x 3	\$3.5 million x 1
Vehicle life (5)	15 years	25 years	40 years
40 yr life cycle costs (6) \$M per passenger per KM	0.198	0.196	.189*
New ridership (est) (7)	3-5%	10-15%	30-40%
Vehicle Noise (8)	Engine & transmission	Tires only	Rail only
Operational Pollution (9)	32 grams/passenger/km	0	0
Manpower (driver & maint) Per vehicle (10)	Estimate: 5	Estimate: 4	Estimate: 2

NB: * 40 year life cycle costs of bus operations are almost the same as that of streetcar due bus replacement needs; but, note the reduced manpower needs and increased ridership probability of the streetcar option.

(notes) Turn the page over for an explanation of each detailed category including life cycle cost calculations.

YOUR PREFERENCE ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(record your for first choice as "1", etc)			
— Kindly give us your postal code so that we may know which area you represent -			V _ _ _ _ _
— Please return this form to us either in person or by mail at the above address			
— This survey is available on-line at http://www.IslandTransformations.Org/polls			
— If you wish to communicate with us, please provide your name and phone number or e-address			
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Please send by mail to address at the top of this page, or

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Explanatory Notes re the Technologies Comparison matrix presented in the 2010 Transit Survey (on page 1)

Preamble: the matrix portrays costs and attributes for three types of vehicles that 1) operate over the same route and 2) carry 180 people. It concludes with a life cycle comparison that takes no account of the frequency or duration of service on that route. No attempt is made to show true fuel and manpower costs within the life cycle because that can only be determined after establishing trip frequency and duration.

- (1) **Route Width:** while each type of service may require additional space (tracks) occasionally along the route, the normal width needed for just two lanes (tracks) is depicted.
- (2) **Infrastructure:** the number of stations on the route and platform needs will be the same for each service as will be the preparation of right of ways, but electrification costs will be \$1M per Km whether overhead or buried.
- (3) **Passenger Load:** these are normal maximums for each vehicle including standing passengers with no allowances for seat or standing space loss due to handicapped or baggage/bicycle accommodation.
- (4) **Vehicle Costs:** these are average costs for known vehicles, e.g. the [streetcar that will now serve Vancouver](#) during the Olympics.
- (5) **Vehicle Life:** these are average replacement cycles of similar vehicles in service; and, please note that it will take three buses to carry the same load as one streetcar.
- (6) **Life Cycle Costs:** these (\$ per passenger per Km) figures result from adding Infrastructure to 40 year vehicle costs (including replacements) then dividing that by 180 passengers; e.g. Diesel Buses (all three will be replaced 2.7 times within 40 years and each cost 700K equals \$5.67M) plus \$30M for infrastructure divided by 180 passengers equals \$0.198M per passenger per Km over that 40 year time frame. Trolley Buses cost slightly less because their average life is greater (only 1.6 replacement) offsetting the greater starting price. But the streetcar wins that comparison at just \$0.189M per passenger per Km.
- (7) **Ridership:** these estimates are taken from the past history of cities that have done similar transitions, including [Ottawa](#) where they are now in the process of converting their troublesome busway to light rail, subway and streetcar. [Portland Oregon](#) has longer standing experience with ridership growth with each mode of transit.
- (8) **Noise:** Victoria citizens will be well aware of the current noise of engine, exhaust and transmission in our current fleet of diesel buses, and very few who have ever travelled by trolley bus or electric streetcar will argue with the marked difference in comfort for noise and vibration or stability whether seated or standing.
- (9) **Operational Pollution:** the Greenhouse Gas (CO₂) figures from a [Hydro Quebec source](#) and do not include manufacturing or hydro generation GHG emissions; those will be similar for each type of vehicle.
- (10) **Manpower:** we have restricted our comparison to the operation of each vehicle for one shift; therefore one driver is obviously needed meaning 3 for each bus in service v.s. 1 driver for each streetcar; and, we have estimated that it will take 2 maintenance persons to service and maintain the 3 diesel buses, just 1 such person to service the 3 trolley buses and likewise just 1 maintainer for the single streetcar. Of course there are many other administrative factors to consider when operating three vehicles per shift v.s. just one.

Now, we are asking you to be the judge of which vehicle system is right for Victoria!

But, please call or e-mail your questions or concerns about this survey to:

IslandTransformations.org addressed to: rapidrial@shaw.ca or phone Lloyd Skaalen 250-388-7512

Greater Victoria Light Rail Society addressed to: recktenwald@shaw.ca phone Bill MacDonald 250-592-0503

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