

## The Olympic Line Experience: A Demonstration of the Downtown Streetcar



*Presented by:*

**Dale Bracewell, P.Eng.**  
**Director, Olympic**  
**Transportation**  
**City of Vancouver**

**Streetcars: A Missing Link**  
**Vancouver, BC**  
**September 29th, 2010**

Engineering Services – Olympic Transportation



## The Olympic Line Experience: A Demonstration of the Downtown Streetcar

- **Outline:**
- Host City Transportation Context
- Vision for a Downtown Streetcar
- Decade of Streetcar Planning
- Realizing a Demonstration Project
- Operating a Railway for 60 Days
- The Olympic Line Experience
- Ridership Data & Public Response
- Awards & Next Steps

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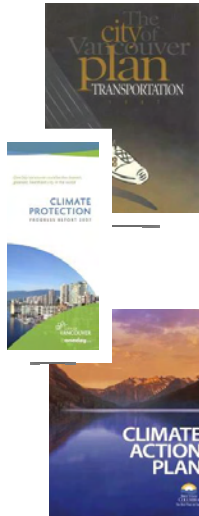
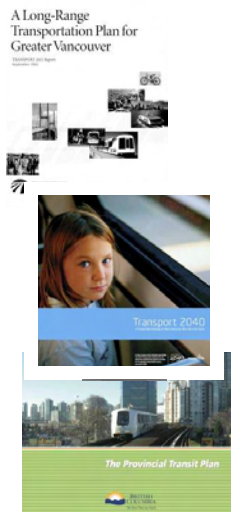
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## Host City Transportation Planning Context



-Regional Transportation Plan - Transport 2021 (1993)

•Vancouver Transportation Plan (1997)

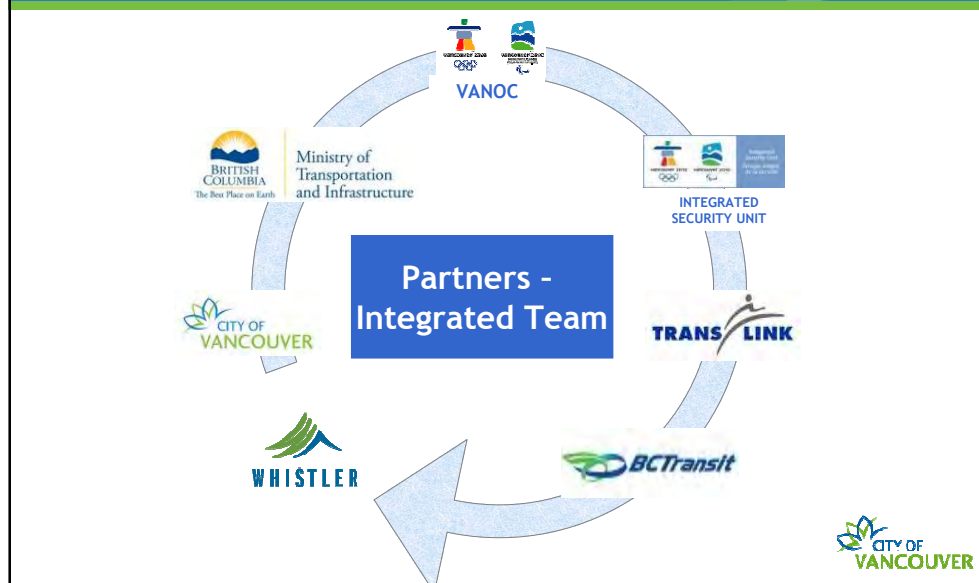
-TransLink Transportation Strategy - Transport 2040 (2008)

-Provincial Transit Plan (2008)

-Provincial Climate Change Plan (2008)



## The Olympic & Paralympic Transportation Team (OPTT)



## Host City Olympic Transportation Goals



- A Successful Olympic Games
- A Functioning Urban City
- A Sustainable Olympic Games
- A Lasting Transportation Legacy



## Host City Transportation Challenges



- Increased Travel Demand
  - Largest event ever in Vancouver's history
- Reduced Road Capacity
  - A new transportation system sharing our road network





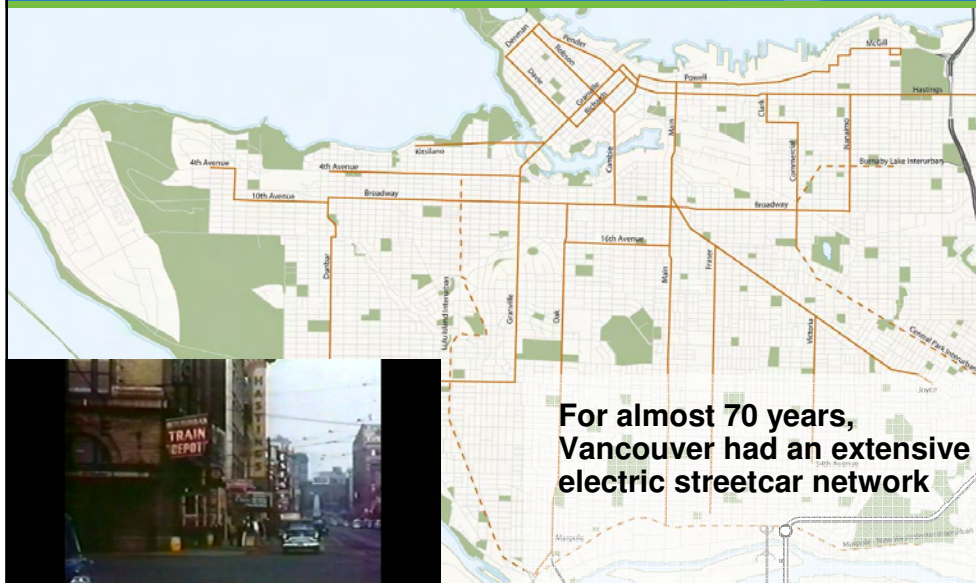
## The Olympic Line Vancouver's 2010 Streetcar



- Demonstration of modern streetcar service as a showcase project
- Free reliable and accessible public transit between Olympic Village Canada Line station and Granville Island
- Operational from January 21<sup>st</sup> to March 21<sup>st</sup>, 2010



## Bringing Back Vancouver's Streetcar



**For almost 70 years,  
Vancouver had an extensive  
electric streetcar network**



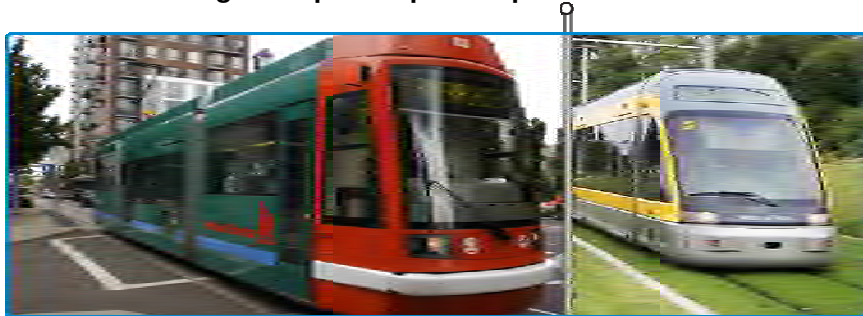
## Vision for a Downtown Streetcar

- Modern, high quality, fully accessible transit system
- To support land-use Downtown with less need for vehicles
- Fully integrated with the regional public transportation network

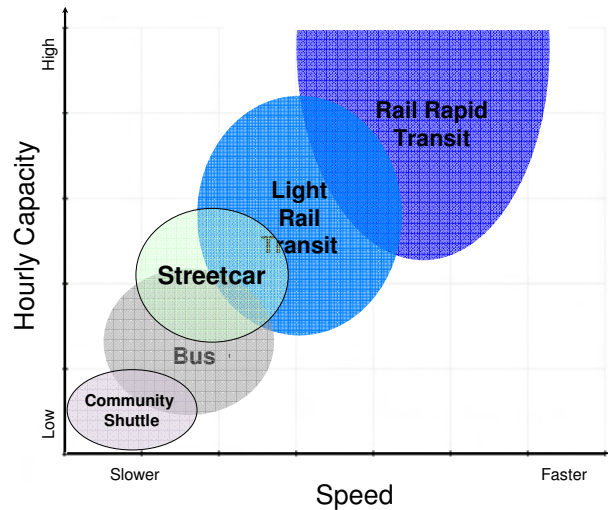


## Why a Downtown Streetcar ?

- Longer life span & lower operating costs
- Promotes neighbourhood development and street life
- Benefits more than just transit users
- Flexible design & improves public space

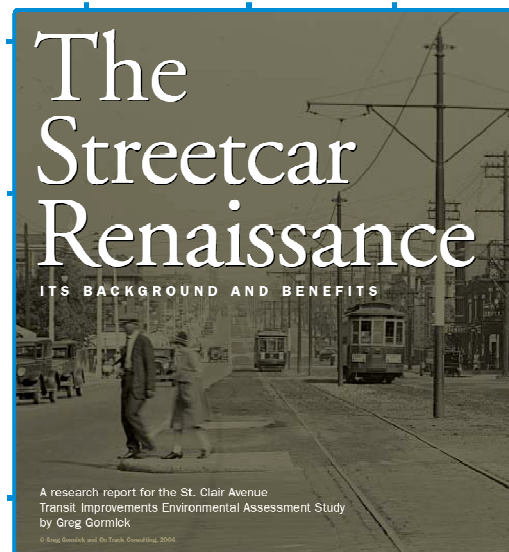


## A Range of Capacity and Speed



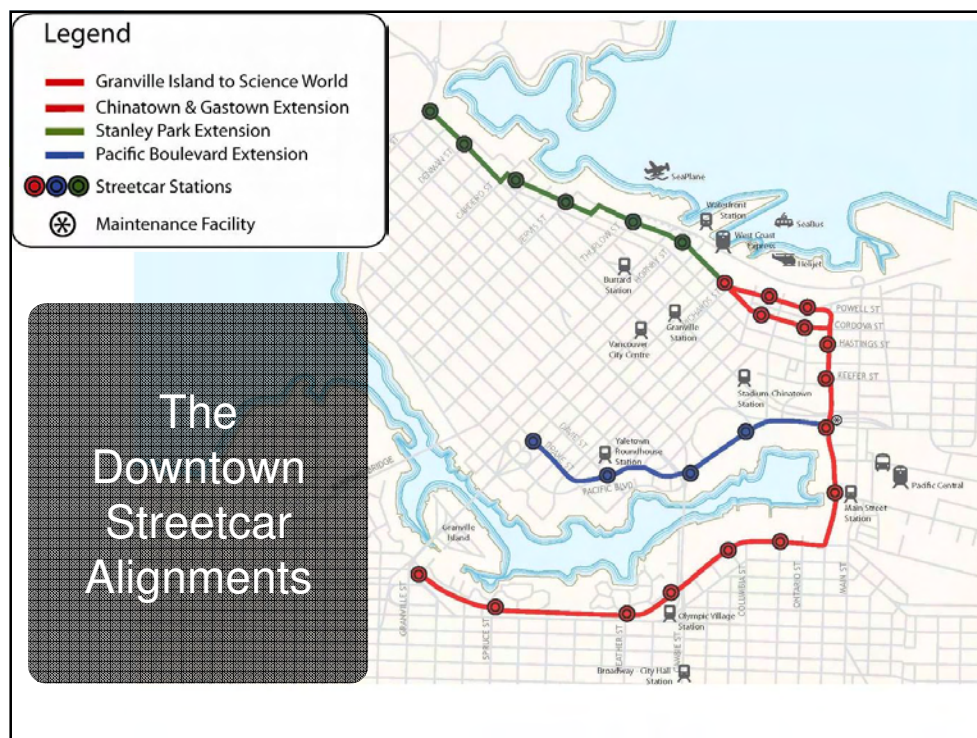
## The Streetcar Renaissance

- ➔ Streetcars have evolved into a modern, efficient, and cost-effective transit mode
- ➔ More than 45 North American cities building, planning or studying new lines
- ➔ Streetcars = a preferred transit mode for tomorrow



# Vancouver Streetcar Feasibility Study

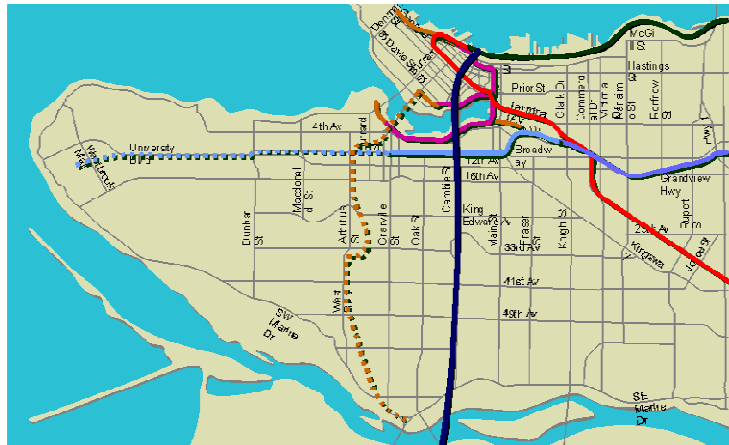
- In 1996, the City purchased the rail right-of-way to Granville Island
- In 1998, the Downtown Historic Railway (DHR) operations began
- In 1999, the Vancouver Streetcar Feasibility Study was completed





# Vancouver Transit Strategy

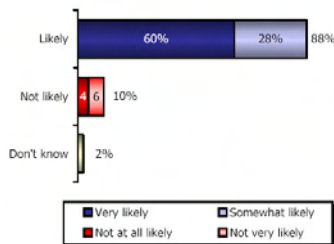
- ➔ A long term network of transit services to serve Vancouver
- ➔ Expanding rapid transit to serve Central Broadway still the priority



## Benchmarking & Market Research Studies

- ➔ Key findings highlighted:
  - ➔ Importance of some dedicated sections
  - ➔ High levels of ridership should be attainable
- ➔ San Francisco F-Line
  - ➔ 8 kilometres with 20,000 riders per day, tourist appeal

Likelihood of Using Streetcar Service



## Why Streetcars & Local Buses Both Work

- “In summary, there are numerous benefits from a streetcar service that support its implementation in a well-chosen corridor.”

*From: Streetcar and Local Bus Comparative Review  
IBI Group for the City of Vancouver, 2006*



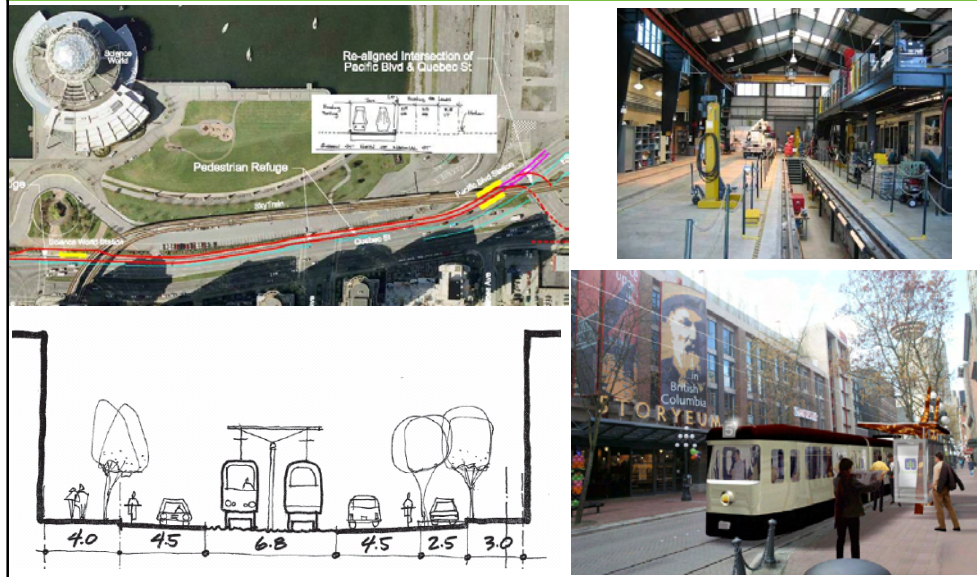
## Design, Layout, & Ridership Study

- Track alignments and operational plans
- Street perspectives of key locations
- Ridership forecasting update
- 2021 Daily Boardings =  
25,000 to 35,000
- 2021 Annual Boardings =  
7.2 to 10.0 million



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## Design, Layout, & Ridership Study

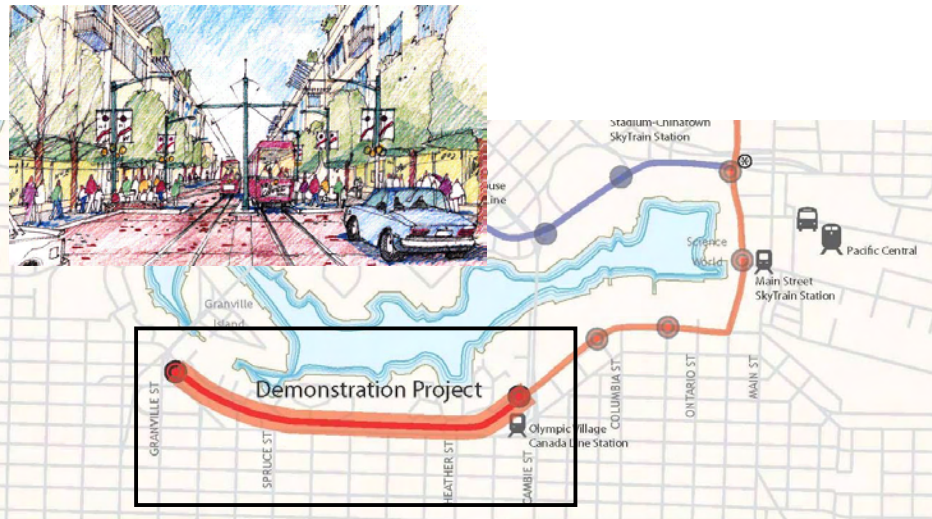


## Preliminary Engineering & Design: Granville Island to Science World





## Preliminary Engineering & Design: Granville Island to Science World



## The Olympic Opportunity

- Partnered with Bombardier Transportation
- \$0.5M Funding Contribution from CMHC Granville Island
- \$8.5M Budget for Design, Construction and Operations
- 60-day demonstration from January 2010 to March 2010



## Olympic Line: Investment Partners



Provision of track infrastructure & maintenance



**Canada Mortgage & Housing Corporation (CMHC)**  
Funding for infrastructure

**BOMBARDIER**

Provision of 2 FLEXITY vehicles & O&M services



**Brussels Transport Company (STIB)**  
Loan of 2 FLEXITY vehicles



## Reconstruction of Tracks



## Transporting the Olympic Line Streetcars



## The Olympic Line Streetcar – Exterior Design

- Brussels streetcar has won two major design awards
- Attractive & elegant transport, 100% low-floor design





## The Olympic Line Streetcar – Interior Design

- Uses materials such as wood, stainless steel and leather
- Comfortable, large windows, low noise, air conditioning



## Olympic Line Operational Data

- Free transit service:
  - 18 hours per day
  - 7 days per week
- 2 streetcars - single track with passing lane
- 2 stations - Granville Island & Canada Line
- 1.8 km of new track infrastructure
- 7-minute peak period headways
- 1,500 passengers/hour, per direction



## The Olympic Line Operations Team

- City of Vancouver & Bombardier - Project Management
- Hatch Mott MacDonald - Design Consultants
- Bombardier - Vehicle Provider
- PNR RailWorks - Trackwork Contractor
- Mott Electric - Power Systems Contractor
- City of Vancouver - Signals and Traffic Management
- Bombardier Operations Staff - Vehicle and Overall O&M
- City Operations Staff - Wayside O&M
- Volunteer Streetcar Operators - TRAMS
- City Host City Team - Platform Attendants
- BC Safety Authority - Regulating Authority



## The Olympic Line Operations Team





## Opening Day – January 21<sup>st</sup>, 2010



## Olympic Torch Relay Day – February 12<sup>th</sup>, 2010





If you didn't get a chance to ride the Olympic Line - Vancouver's 2010 Streetcar...



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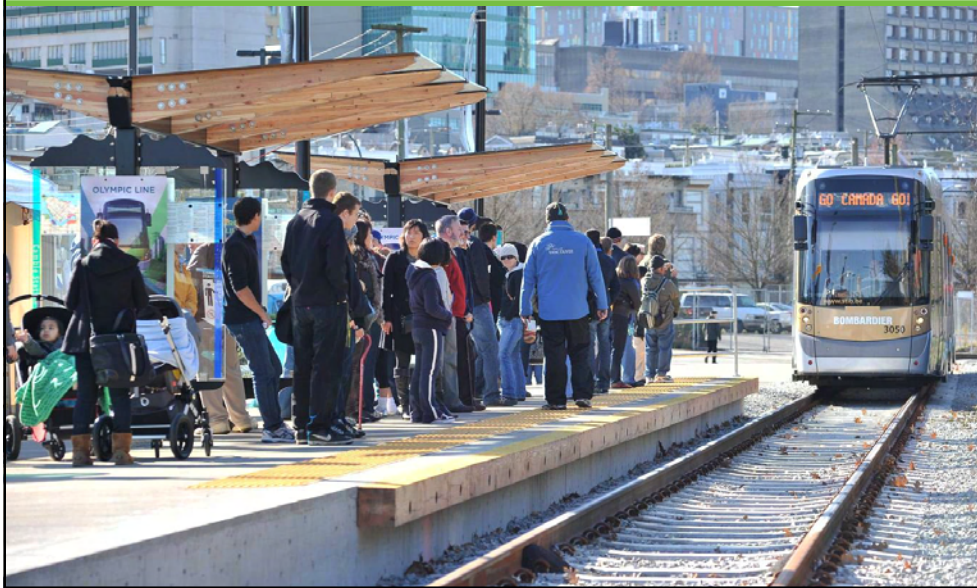
## The Olympic Line Operational Challenges



- Fixed schedule
- Copper theft
- Limited local expertise
- Crowds
- Inexperience

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## The Olympic Line Experience



## The Olympic Line Experience





## The Olympic Line Experience



## The Olympic Line Experience





## Olympic Line Streetcar Ridership



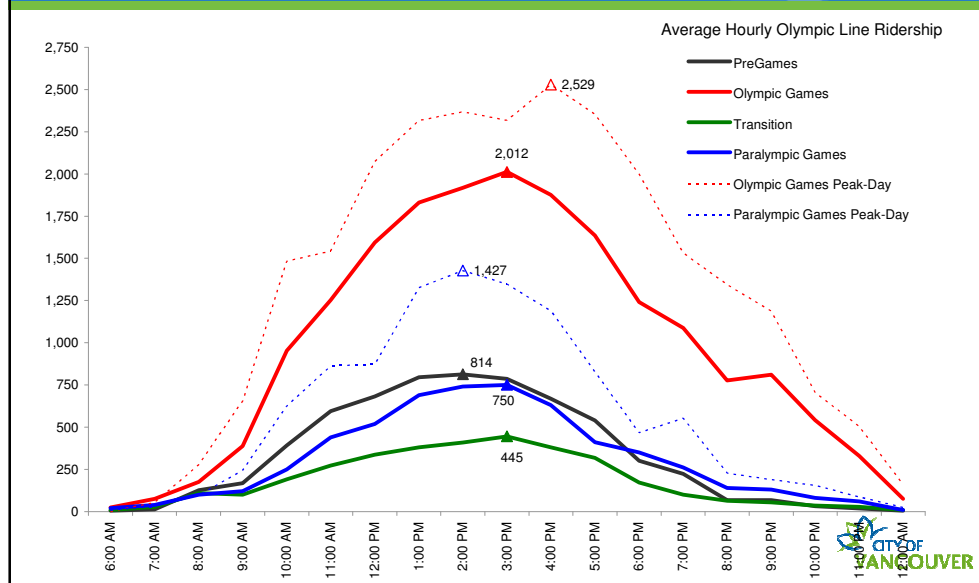
- The Olympic Line carried
- **over half a million riders**
- in just 60 days.

- Olympic Daily Ridership:
- **18,600**
- Average Daily Ridership:
- **9,200**

Source: City of Vancouver Host City Team



## Olympic Line Streetcar Ridership



## Olympic Line Streetcar Ridership



## The Olympic Line – Public Response

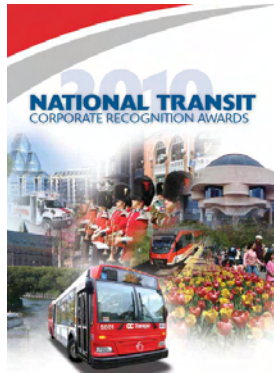


- City received over 250 Olympic Line emails
- 100% supported the Olympic Line
- 96% supported a permanent streetcar system and/or an extended system
- Lots of "willingness to pay" comments were included

## The Olympic Line - Awards



vancouver 2010™  
Sustainability  
Durabilité



- Vancouver 2010 Winter Games Sustainability Star
- Canadian Urban Transit Association (CUTA) - 2010 National Transit Corporate Recognition Awards - Exceptional Performance/Outstanding Achievement Award
- American Public Transit Association (APTA) - 2010 Adwheel Awards - PR/Awareness Special Event - 1<sup>st</sup> Place



## The Downtown Streetcar – Next Steps



- A successful demonstration but more work to be done
- Will require new partnerships
- The City continues to preserve rights-of-way
- Seeking opportunities to move the project forward
- More information at:  
[vancouver.ca/streetcar](http://vancouver.ca/streetcar)

