

Why Invest in ITS?

Transit ITS Workshop



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TransLink: Responsibilities

- Unique in Canada
- Integrated approach to:
 - Transit
 - Roads
 - TDM
 - Air Quality
- Funding from Transportation Sources



TransLink Programs

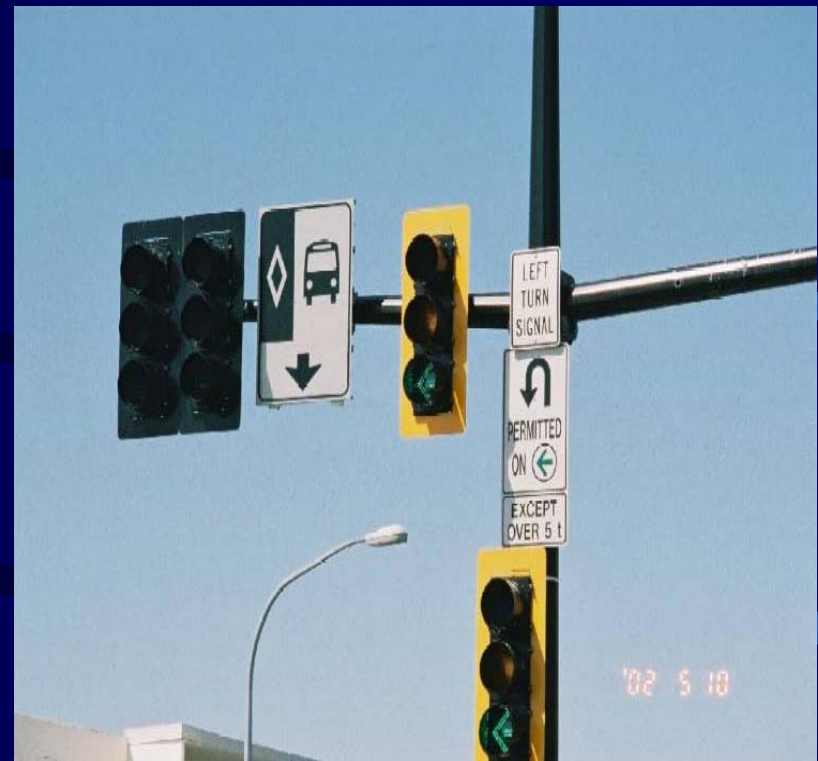


TransLink's Role in ITS

- Regional ITS coordination through the ITS Corp.
- Lead agency for ITS issues such as developing regional ITS policies, funding, etc.
- Clearinghouse for all agencies and programs in the region for ITS
- Interface with other levels of government in Canada and US
- Manages and implements ITS projects

ITS Transit Applications in Vancouver

- Advanced traveler information systems (ATIS)
- Advanced traffic management systems (ATMS) including signal coordination
- Electronic payment – smart cards, tolls
- Bus rapid transit (BRT)
- In-vehicle transit applications including APCs, AVL and TSP



ITS Benefits



- Improve efficiency of the transportation network
- Increase safety
- Provide transportation choices
- Improve service quality for users of transport users

Why Invest in ITS? Tangible Benefits

- Reduced travel time
- More efficient operations
- Improved reliability & schedule adherence
- Increased transit ridership & revenues
- Decreased pollutants and emissions

Why Invest in ITS? Intangible Benefits



- Increased customer satisfaction
- Improved flexibility and choices
- Customer convenience
- Customer loyalty





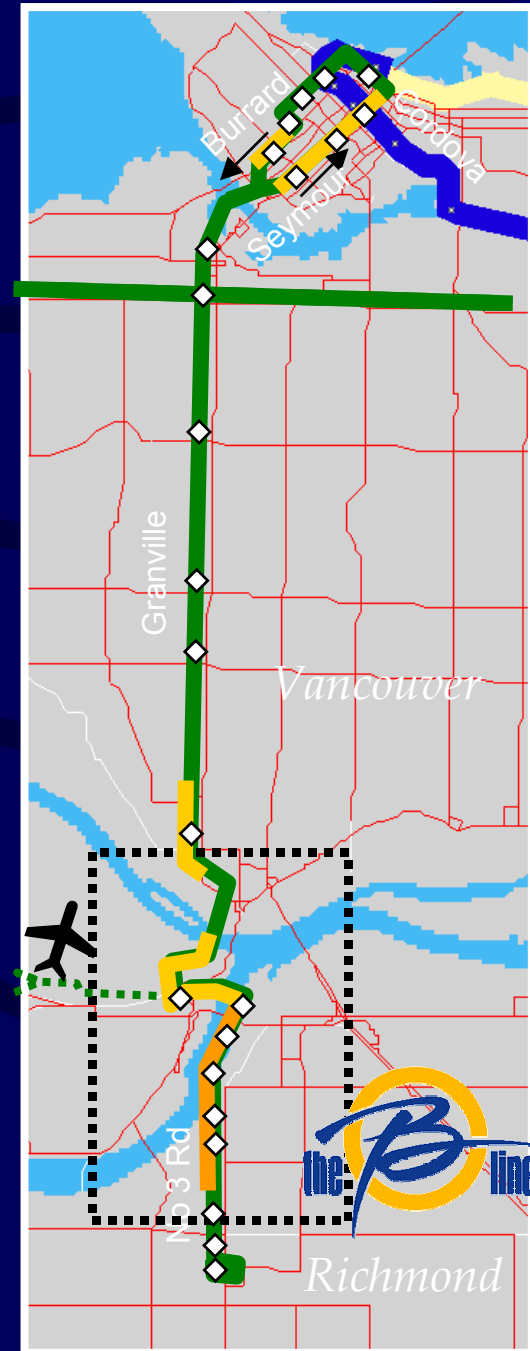
#98 B-Line Bus Rapid Transit Project

Five Core Elements

- Service Design
- Facilities
- Transit Priority
- Vehicles
- ITS

Legend

-  Median Busway
-  Curbside Bus lane



#98 B-Line Model ITS Technology

- Use of Intelligent Transportation Systems (ITS) technology
 - Automated vehicle location (AVL)
 - Traffic signal priority
 - Real-time schedule information at station stops
 - On-board next stop announcements (voice and digital)



#98 B-Line Model

Automated Vehicle Location (AVL)

- Monitors position using GPS (satellite)
- Real-time station displays show predicted arrival times at station stops
- Monitors schedule adherence for traffic signal priority



#98 B-Line Features

Station Real-Time Displays



#98 B-Line Model

Traffic Signal Priority (TSP)



Transponder

Roadside Receivers



Traffic Signal Controller Interface



- 59 intersections
- Activated with bus transponder
- Based on schedule adherence
- Check-in/check-out minimizes disruption

#98 B-Line BRT Evaluation Results

Customer Satisfaction

- Ratings better than regional average for most attributes
 - Frequency
 - Hours of operation
 - On-time/reliable service
- Lower ratings for:
 - Overcrowding
 - Directness of service



#98 B-Line BRT Evaluation Results

Travel Time

- 16% improvement in travel time
 - 84 minutes round trip (from 100 minutes)



#98 B-Line BRT Evaluation Results

Improved Ridership and Revenue

- Ridership increase to +20,000 per day in 2003 (from 14,000)
 - 1.2 million new annual trips
- 31% of trips new to transit
- 23% switched from auto
- Revenue increase \$2.9 million annually



#98 B-Line BRT Evaluation Results

Impact to General Purpose Traffic

- Overall benefit to GP traffic in corridor
- Negligible impact for trips crossing corridor
 - Check in / check-out system reduces impact



#98 B-Line BRT Overall Benefits

- Capital & operating cost savings
 - Net benefit \$2.9 million annually
- Mode shift
 - 23% shift from auto modes on corridor
 - Net increase 1.2 million riders annually
- Reduced auto trips
 - Net reduction 8 million auto vehicle-kms annually
 - Greenhouse gas reduction
- Increase in revenues
 - Net \$1.2 million annually

Smart Card Program



Benefits to the customer:

- Convenience to use a cashless system
- Seamless travel between modes
- Flexible fare products and discounts
- Time savings at transfer points
- Improved packages for travel

Smart Card Program Benefits to Operator

- Increased revenues (~ 2 to 5%) from loyalty programs, “card real estate”, float on prepaid, etc.
- Decreased fare evasion & improved security
- Reduced cost of handling cash & producing media
- Improved data management at reduced costs
- Lower maintenance costs
- Greater flexibility with fare policies and changes
- Improved customer satisfaction

Automated Passenger Counters (APC) Deployment Project

Deployment strategy:

- Installation on 15% of bus fleet ~ 180 units
- Deployment on standard & articulated buses, trolleys, & highway coaches from 7 transit centres.
- Budget (including pilot) \$4 million
- Developing pilot project on SkyTrain vehicles

Automated Passenger Counters (APC) Benefits

- Reduction in traffic checking staff ~ \$412 K/year
- Reduction in contracted ride check services from \$400 K/year to \$100 K/year
- Reduced analysis of ride check data ~ \$30 K/year
- Reduction in special studies ~ \$25 K/year
- “Potential” schedule efficiencies of \$3.4 million/year due to reductions in running times, dead heading & last trip run time
- Estimated potential net benefit + \$3.0 million

Why Invest in ITS?

- Makes good business sense
- Improves the transportation network
- Provides benefits to users and operators
- Supports seamless integrated transportation



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Smart Card Program Basic Functions

