A picture is worth a thousand words:
Telling a better story with data visualizations

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TransLink

Regional Transportation system of
• 23 Municipalities
• 1,800 km²

CMBC
• 153 Conventional Bus routes
• 70 Community Shuttles

2018  437.4M Boardings
↑ 8.0% Bus Ridership
Bus Speed & Reliability Program

Goals

Improve customer experience and cost-effectiveness through faster, more reliable bus service.

Two-person operation
- Project Manager
- Data Scientist

$16 million budget for four years
Framing the Analysis Process

1. Questions
2. Collection
3. Exploration
4. Conclusions
5. Communication
Framing the Analysis Process

1. Questions
2. Collection
3. Exploration
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Together all the way
Questions

What is the story you are trying to tell?

• Goal
• Audience
• Simplify
Discussion with municipalities on transit priority over the Second Narrows Bridge.

- Once onto the Second Narrows bridge, speeds are relatively fast.
- Loading onto the bridge results in relative slow speeds and increased travel time.
Questions

What is the story you are trying to tell?

- Goal
- Audience
- Simplify

<table>
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<tr>
<th>METRICS</th>
<th>CORRIDOR</th>
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<th>SEGMENT</th>
<th>BUS STOP</th>
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Manual Dashboard
Exploration
Conclusions & Communication
Dashboard Walk-Through
Burnaby and Vancouver are considering extending transit priority lanes across Hastings.

**Data**

HOV Lanes seen along Hastings through Burnaby offer little benefit to transit travel time compared to hours without parking restrictions.

**Recommendation**

1. ↑ Hours of Parking Restrictions
2. Extend hours of Priority
3. Convert HOV → Bus Only
Monitor Specific Projects:
Extending Transit Priority Lane hours across Vancouver
Confirming Operator Comments
“We have received a number of reports from customers and bus operators regarding traffic delay at the left turn from NB Scott Road to WB 84th Avenue”

- BSR Program funded a Left-Turn Signal at this intersection
- Saving almost 2 minutes during the worst time of day, an average of 45-75 seconds on other trips.
Data → Story → Information

1. Identify and Prioritize Metrics
2. Flexible analysis structure and tools
3. Develop Partnerships
REFERENCE
Route

Dashboard Views
Route

All Routes in region (ex. North Shore)
Average schedule adherence and speed of all Routes in region
Hover over a route to see Route level Run Time Values.
Trip - Segments
Speed Map

What is Shown
Average transit speed between bus stops.

How to Read
Colour indicates average transit speed between bus stops.
- Green: Relatively fast/free-flowing.
- Red: Relatively slow, area of potential

Note
Only shows average speed. Does not indicate potential reliability issues (variation of speed).

Travel Time

What is Shown
Sum of average travel time (y-axis) of chosen segments across 15-minute increments of the day (x-axis).

How to Read
• Light Blue – Possible Time Savings:
  Average observed travel time for each trip attributable to various forms of delay, slow speeds in traffic, etc.
• Gray – Baseline:
  Average minimum travel time throughout the day. This is used as a proxy to estimate free-flow traffic.

Note
Only shows average travel time. Does not indicate potential reliability issues (variation of travel time).
Travel Time by Percentile Group

**What is Shown**
Travel time (y-axis) of chosen segments across 15-minute increments of the day (x-axis) by 25th, 50th (median), 75th and 100th (maximum).

**How to Read**
Each percentile group represents travel time of ¼ of trips through a specific stop segment.
Average travel time is shown by
Heat Map

What is Shown
Average speed (km/h) across all stops along a route (y-axis) across 15-minute increments of the day (x-axis).

How to Read
Colour indicates average speed between bus stops. A white block indicates lack of data.

- Horizontal pattern: Speed influenced by location.
- Vertical pattern: Speed influenced by time of day.

Note
Only shows average speed. Does not indicate potential reliability issues (variation of speed).