



Rapid Transit From Arbutus Street to UBC

Policy and Strategic Priorities Council Meeting
January 30, 2019



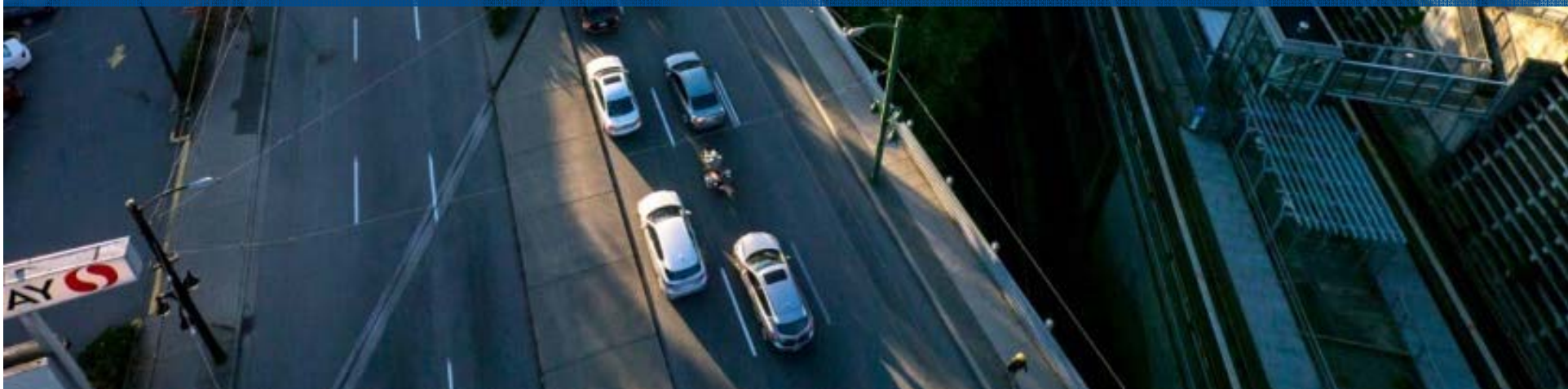
Agenda



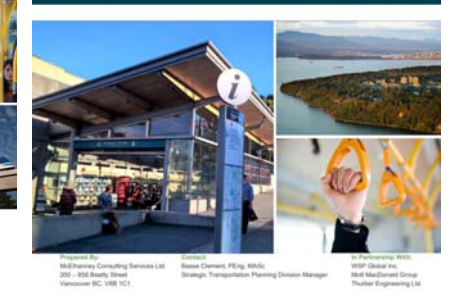
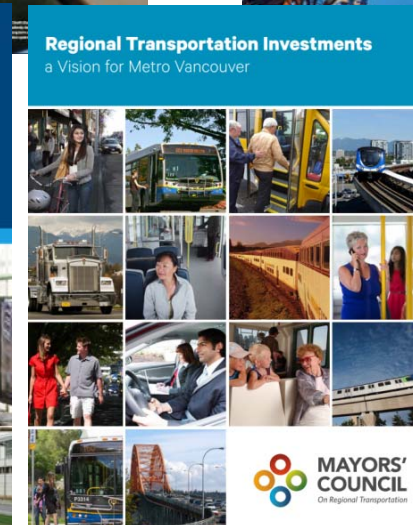
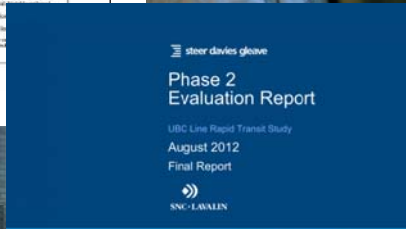
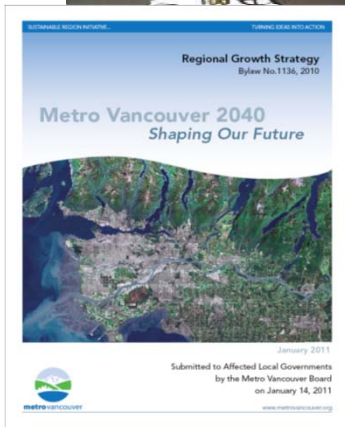
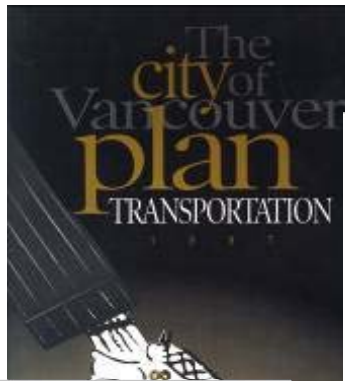
1. A History of Planning for Broadway Rapid Transit
2. The Need for Broadway Rapid Transit
3. Rail to UBC Rapid Transit Study
4. Next Steps



A History of Planning for Broadway Rapid Transit



Decades of Planning Broadway Rapid Transit



Critical to Achieve City Goals

Transportation 2040:

Sustainable mode share targets

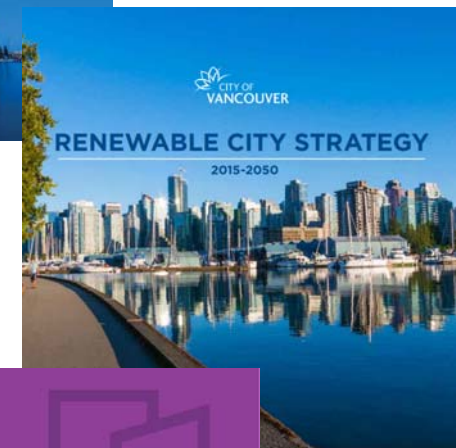
- 1/2 of all trips by 2020
- 2/3 of all trips by 2040

Renewable City Strategy:

GHG reductions depend on
Millennium Line extension to UBC

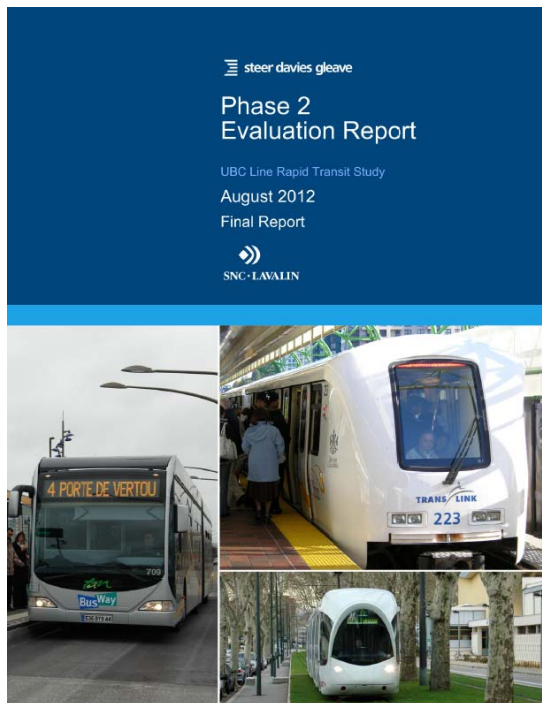
Housing Vancouver Strategy:


















































Landing social and supportive
housing near rapid transit
investments will be key to meeting
the 10 year targets.





UBC Line Rapid Transit Study - 2012

- SkyTrain to UBC
 - the top ranked alternative in every category
 - received the strongest public support

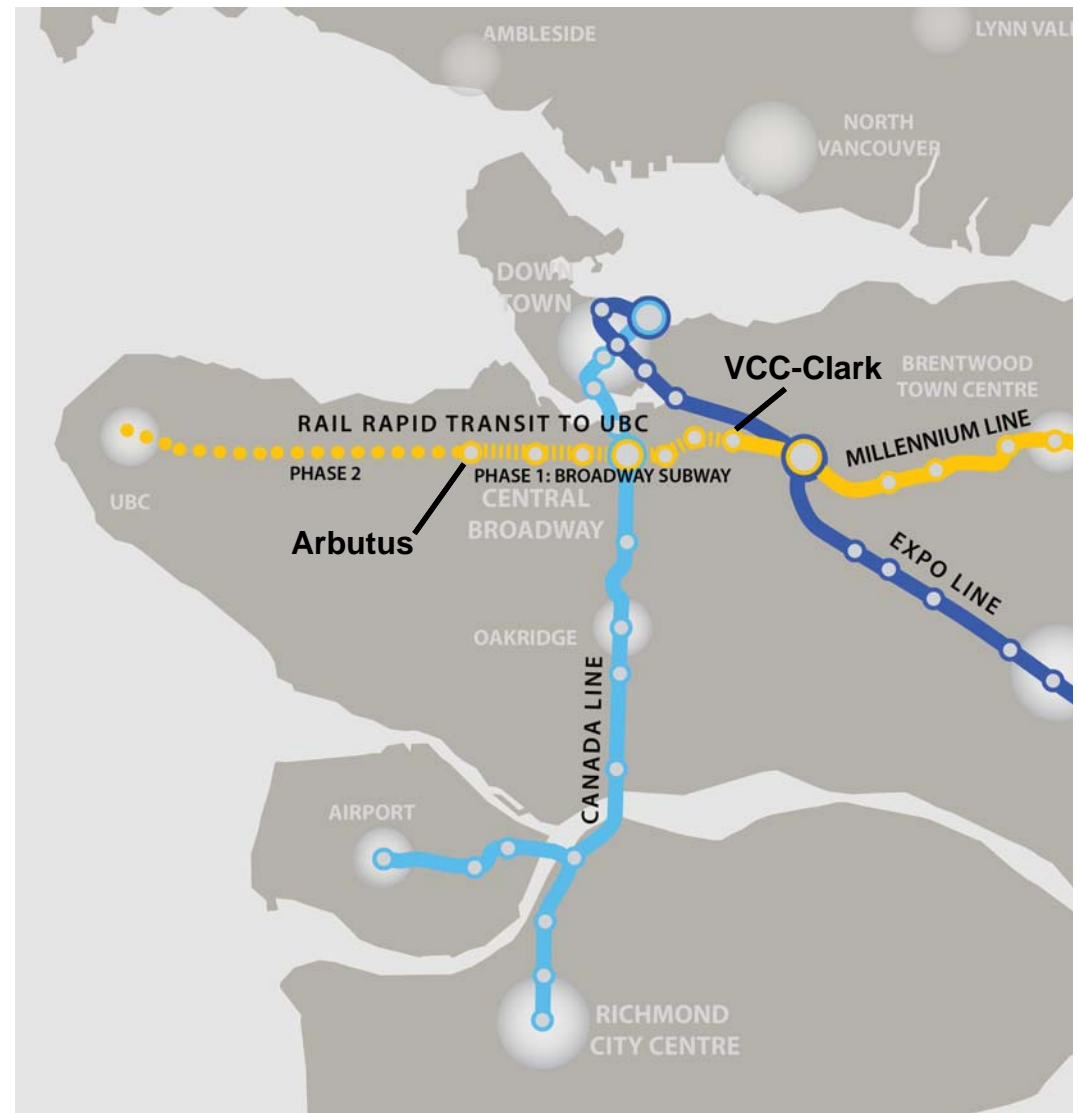


			ADVANCED FOR CONSIDERATION		TOP PERFORMING OPTION	ADVANCED FOR CONSIDERATION	
ACCOUNT	BEST BUS	BRT	LRT 1	LRT 2	RRT (SkyTrain)	COMBO 1 RRT + LRT	COMBO 2 RRT + BRT
Transportation							
Financial							
Environment							
Urban Development							
Economic Development							
Social and Community							
Deliverability							

LEGEND:  Worse ← BAU →  Better

Regional Mayors' Council Vision - 2014

- Identified rail-based rapid transit between Commercial Drive and UBC to be delivered in two phases:
 - Broadway Subway - SkyTrain from VCC-Clark Station to Arbutus Street
 - Rail-based rapid transit from Arbutus to UBC



Broadway Subway to Arbutus



- 6 km extension, primarily tunneled below Broadway
- 6 underground stations
- Full underground integration with Broadway – City Hall Canada Line station
- Designed to accommodate future rapid transit to UBC.

Strong Public Support

- UBC Line Rapid Transit Study (2012)
 - SkyTrain to UBC was the preferred option for the public (67% somewhat or very acceptable)
- Broadway Subway Design Development (2017)
 - 80% very supportive of Broadway Subway to Arbutus
 - Most frequent message heard by City staff was for the Broadway Subway to extend all the way to UBC in one phase





The Need for Broadway Rapid Transit



Broadway Today

- Broadway is home to the:
 - **busiest bus route** in Canada and the USA
 - **largest hospital** in Western Canada
 - **largest university** in Western Canada
 - **second largest job centre** in British Columbia
- Existing transit services are unable to meet current demand
- Needs to meet today's demand as well as future regional growth (1 million new residents and 600,000 new jobs over the next 30 years)



Benefits of a Broadway Subway to Arbutus



- Most **reliable** transit service
- Expandable **capacity to serve the long-term needs** of the corridor
- **Cuts the travel time in half** from Commercial-Broadway to Arbutus
- Has the **lowest operating costs**
- Helps achieve **transportation, environmental** and **housing** goals
- Supports **economic growth**
- Enhances **regional rapid transit network**

The Need For Rapid Transit Beyond Arbutus



- 4 of the region's 5 busiest bus routes serve the jobs, population and students of UBC
- 11 bus routes that run through Vancouver to UBC carry nearly half of the bus ridership
- All of the top 5 most crowded bus services in the region serve UBC

Rank	Route	Annual Boardings
1	99	17,421,000
2	41	8,918,000
3	20	8,630,000
4	49	8,034,000
5	25	7,642,000

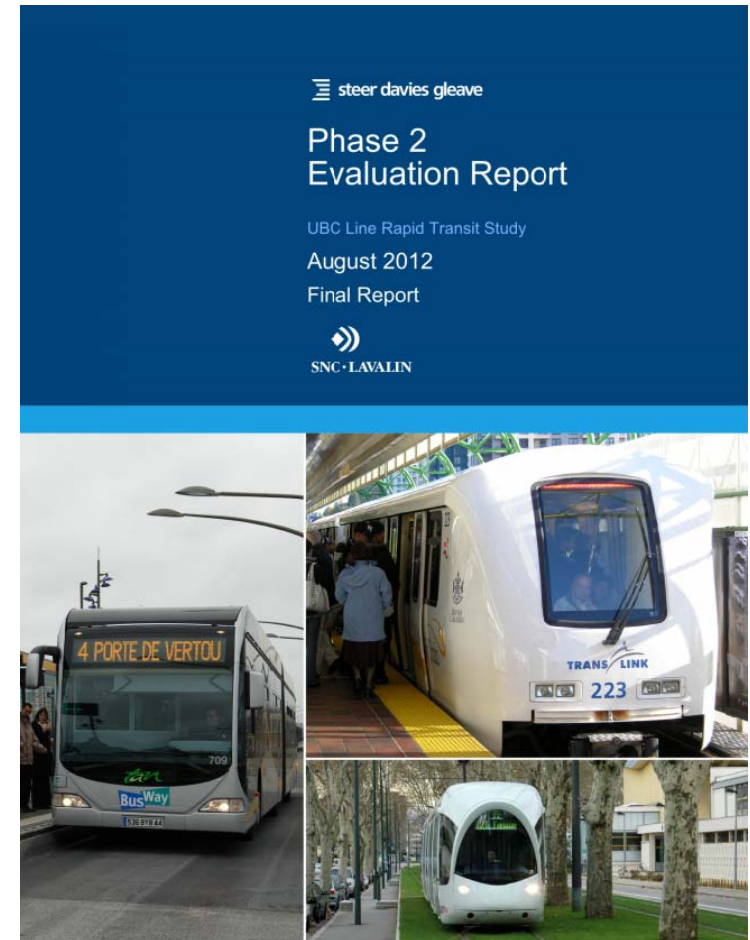


Rail to UBC Rapid Transit Study



Why Update 2012 Study?

- Broadway Subway to Arbutus being delivered
- Updated regional transportation model
 - Including regional growth assumptions for population, jobs and students
- Review and update technology assumptions
- Update high level capital costs
 - Inflation
 - Exchange rates



Rail to UBC Rapid Transit Study - 2018

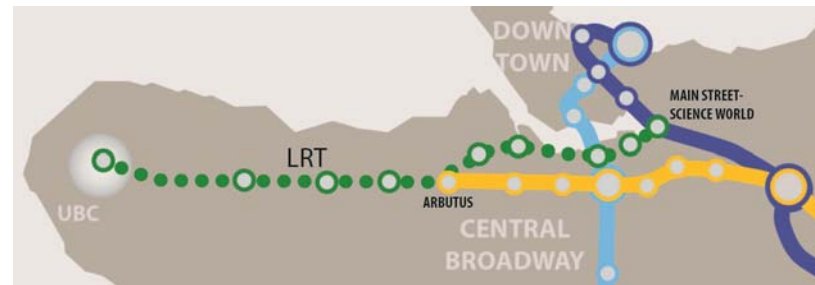
Baseline – BSP and Optimized B-Line



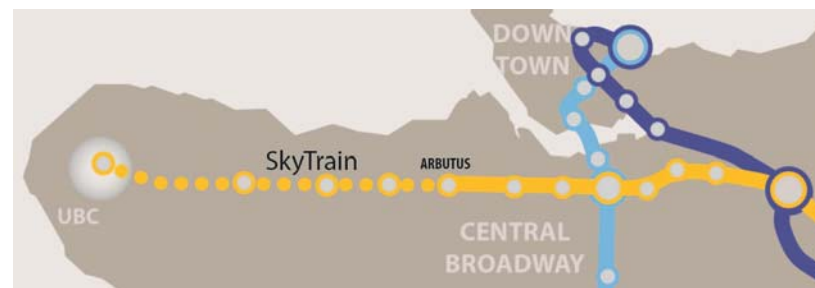
Option 1 – Modified LRT 1



Option 2 – Combo 1 (LRT from Main St)



Option 3 – SkyTrain to UBC

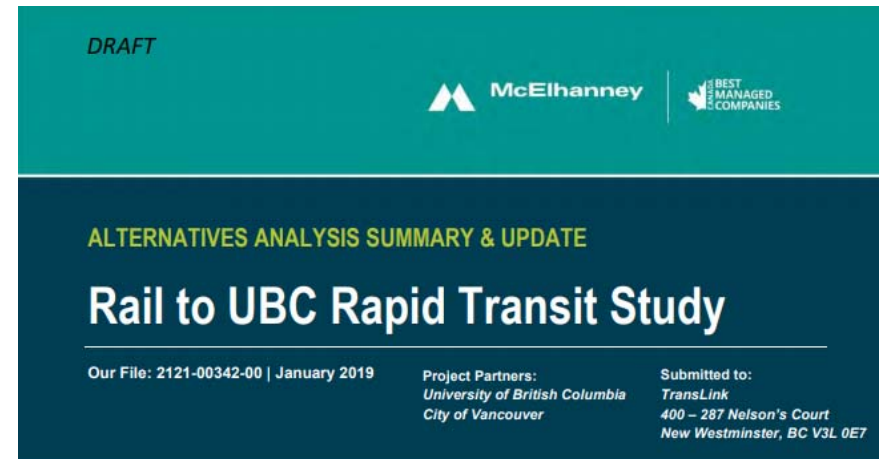


Rail to UBC Rapid Transit Study - 2018



- Key Findings

- 99 B-line from Arbutus to UBC will be at capacity on opening day of Broadway Subway (2025)
- Options involving LRT reach ultimate capacity on Broadway within 15 years of opening (by 2045)
- SkyTrain is the only option that provides long-term capacity and relieves pressure on parallel bus routes in Vancouver



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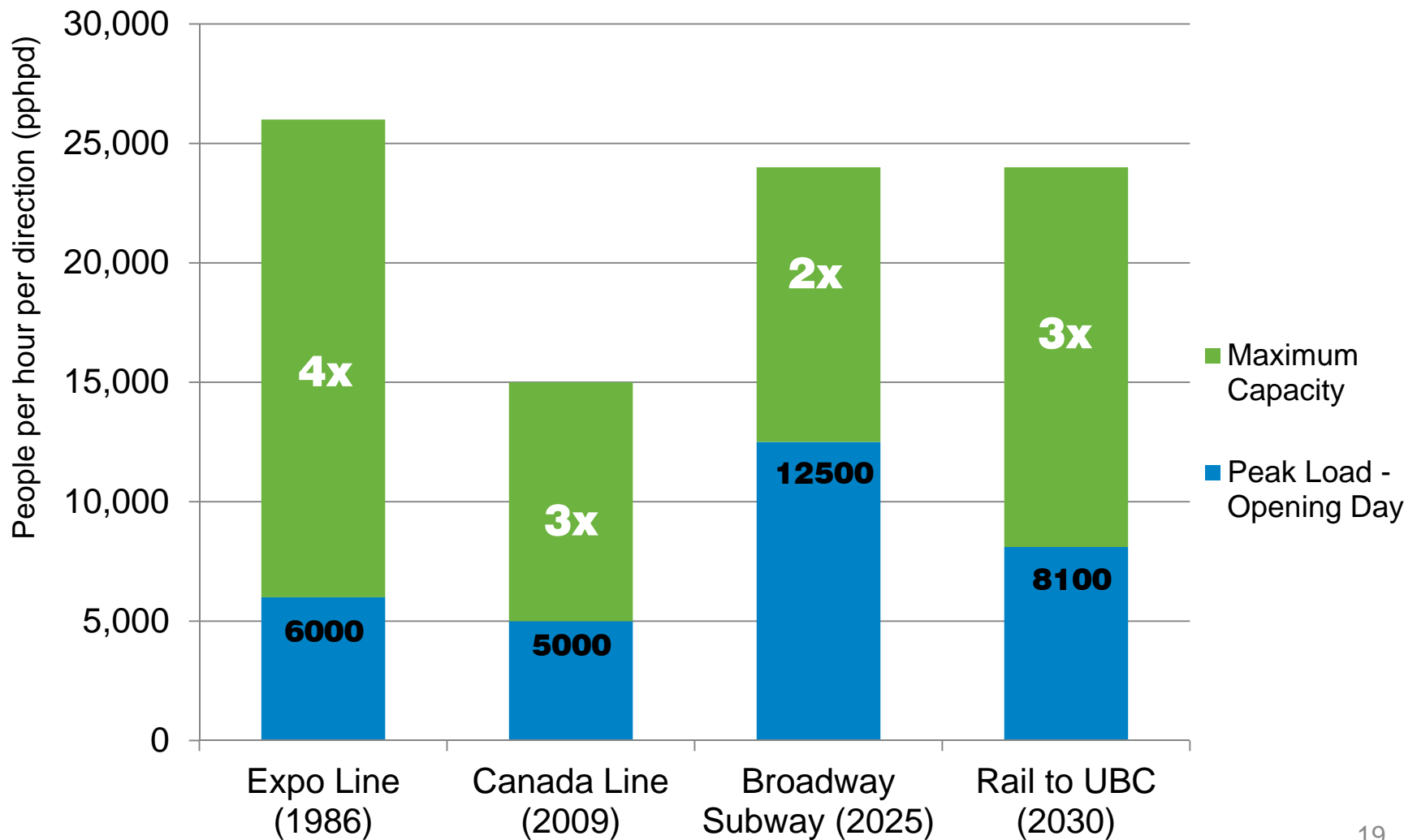
2018 Study Findings



	Baseline	Modified LRT1	Combo 1 (RRT/LRT)	SkyTrain
Travel time (min.s)*	20-22	17-19	17-19	10-11
Reliability	-	☑☑	☑☑	☑☑☑
Daily Boardings (2045)*	29K	66K	101K	119K
Practical Capacity (pphpd)	2,100	6,120	6,120	10,600
% Practical Capacity (2045)	124%	96%	108%	94%
Expandable Capacity	Yes (up to 3,000)	No	No	Yes (up to 22,100)
Street level impacts	-	Yes	Yes	No
# of Parallel Bus Services Crowded/Overcrowded (2045)	9/10	8/10	8/10	2/10
Capital Cost (2018\$)	-	\$1.7-2.0B	\$2.8-3.2B	\$3.3-3.8B

*Arbutus to UBC

Opening Day Ridership and Capacity



Network LRT Concepts

- Adds LRT along 41st Ave connecting to Canada or Expo Line
- Findings:
 - Attracts new riders on 41st but Broadway is still crowded
 - Cost of LRT (\$3.7 to \$7.1B) would exceed SkyTrain (\$3.3 to \$3.8B)
 - Maximum combined LRT capacity to UBC is 55% of SkyTrain
 - At capacity within 15-40 years of opening
- A Network LRT concept costs more than SkyTrain, provide less overall capacity to UBC (55%) and can not be expanded





Next Steps



Next Steps



- January 24 – Regional Mayors’ Council presented with Rail to UBC technical report
- February 15 – Regional Mayors’ Council Meeting
 - Direction sought for options to carry forward for design development
- 2019 – Mid-2020 - Design development (funded)
 - Public engagement opportunities
 - Report back to Council on alignment and station options
- Fall 2019 – Federal election
- Mid-2020 - Business Case development (to be funded)



Thank you

Recommendations



- A. THAT Council endorse a SkyTrain extension from Arbutus Street to UBC.
- B. THAT Council direct staff to work with partners to advance the design development including public consultation to determine station locations, vertical and horizontal alignment.
- C. THAT staff write a letter to the Mayors' Council on Regional Transportation ("Mayors' Council") to inform them of Council's support for the selection of SkyTrain and further design and consultation on alignment.