Roderick V. Louis

- To speak to agenda Items:

- **4.1:** BC's Ministry of Transportation and Infrastructure (MOTI) representatives' presentation regarding the "*results of technical evaluation(s)*" of Massey Tunnel replacement alternatives;

  And

- **5.1**: *"George Massey Crossing Project- Results of Technical Evaluation on the Six Short Listed Options"* report;

Agenda Items 4.1 and 5.1 reports' Deficiencies

- Reports do ***not*** provide ***any*** estimates for:

- The anticipated (planned-for) use-able life-span of ***any*** of the proposed Massey Tunnel replacement options***

- Annual, 5-year, 10-year, full life (and other) maintenance, repair and refurbishment costs of ***any*** of the proposed tunnel replacement options***

*** Bored Tunnel, Immersed-tube Tunnel, & Bridge;

Agenda Items 4.1 and 5.1 reports' Deficiencies

From Item 5.1 Report:

…

*"**Existing Tunnel***

….

*"With regular maintenance and rehabilitation, the existing George Massey Tunnel has approximately **50 years** of serviceable life remaining;*

….

*"… existing tunnel would require ground densification... (*and*) additional flood protection around entrances…"*

…

Report does *not*:

- indicate ***any*** basis for its conclusions (IE: zero references to (recent or other) engineering consultants' reports!!)
- provide ***any*** costs estimates for retaining existing tunnel 2020- 2070
- provide ***any*** costs estimates for disposal of existing tunnel…

Agenda Items 4.1 and 5.1 reports' Deficiencies

- MV's Massey Tunnel Task Force is being asked by BC's MOTI reps to endorse a specific tunnel replacement alternative- IE: **Bored Tunnel, Immersed-tube Tunnel**, or **Bridge** (with existing tunnel retained, or not retained)…

- While at the same time: MOTI reps have ***not*** provided the task force with ***any*** financial costs estimates* for ***any*** of the replacement alternatives that the task force is being asked to choose from and endorse…

  * Such **costs estimates** should be produced by an arms-length (objective) engineering/ construction/ project management firm that has been contracted by BC's MOTI for this purpose- and should be released to the public…

Requested Actions #1:

- **Pass Motion today** that requires the Task Force to write to BC's Minister of Transportation and Infrastructure (MOTI) requesting that BC's MOTI provide documentary evidence- such as ***recent*** consultants' reports- that indicate:

…

- The basis for MOTI representatives' conclusions, and recommendations to the task force;

- **Costs estimates** for *retaining* the existing Massey Tunnel 2020- 2070

- **Costs estimates** for *disposal* of the existing tunnel…

** Costs estimates that have been produced by a competent, objective, engineering/ construction/ project management company that has been contracted by the MOTI for this purpose…

Requested Actions #2:

- **Pass Motion today** that requires the Task Force to :

1) **Adopt and endorse** staff's *Alternative #1* recommendation (in Item 5.1 report;

2) ***Reject*** all other staff recommendations (*Alternatives #2- #7*);

3) **Expeditiously write to** - and or recommend that the MV RD Board expeditiously writes to- BC's Minister of Transportation and Infrastructure- requesting that the MOTI promptly provides the task force, and the MV RD Board, with ***detailed costs estimates*** ** for each of the Massey Tunnel replacement options that are identified and recommended by MOTI officials (in agenda Items 4.1 and 5.1);

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

George Massey Crossing Project

Phase 2: Crossing Options

Mayors' Task Force

October 2, 2019

Agenda

- Process and schedule
- What we heard
- Options analysis
- Request to select preferred option

Task Force Engagement Process

Phase 1
- Confirm **principles, goals and objectives**

June 27
- Confirm **long-list** of options and evaluation framework

July 24
- Confirm **short-list** of options

Oct 2
- Select Task Force's **preferred option** to proceed to public engagement

Nov 27
- **Recommend preferred solution** to MV Board for approval and recommendation to Minister

WE ARE HERE

Success Milestones To Date

Consensus on:

- Principles, goals and objectives
- The number of lanes for the crossing
- 18 long-list options and evaluation framework
- 6 short-list options

Endorsed Options Short-list

All options include 2 lanes dedicated for transit and cycling/pedestrian paths

- 8-lane deep bored tunnel (DBT)
- 8-lane immersed tube tunnel (ITT)
- 8-lane bridge
- 6-lane DBT + transit lanes in existing tunnel
- 6-lane ITT + transit lanes in existing tunnel
- 6-lane bridge + transit lanes in existing tunnel

What we've heard so far

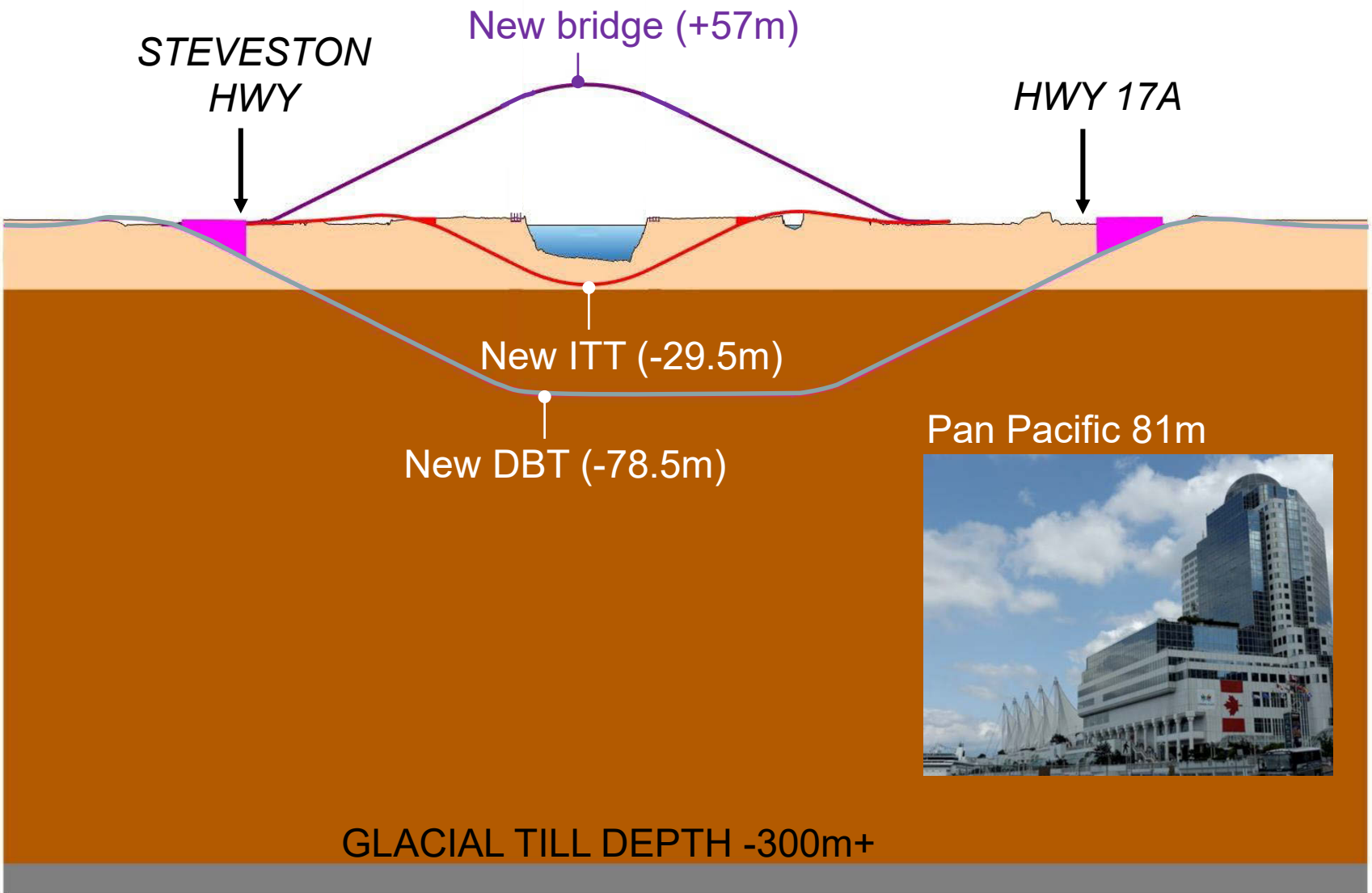
- Urgency to move forward quickly
- Promoting transit use is imperative
- Concern about lifespan of existing tunnel
- Desire to manage risk and cost

Existing Tunnel

Options using the existing tunnel have greater impacts than all-new options due to:

- In-river ground densification
- Environmental Assessment extended timeline
- Up to 5 minutes longer for transit trips
- Shorter lifespan
- Additional cost (hundreds of millions)

Comparative Height/Depth of Options



Benchmark Comparisons for Costing

Deep Bored Tunnel:

- 8 recent projects in the U.S., Italy, Hong Kong and Australia
- None with our soil or seismic conditions

Immersed Tube Tunnel:

- 7 projects in the U.S. and northern Europe

Deep Bored Tunnel Concept Design

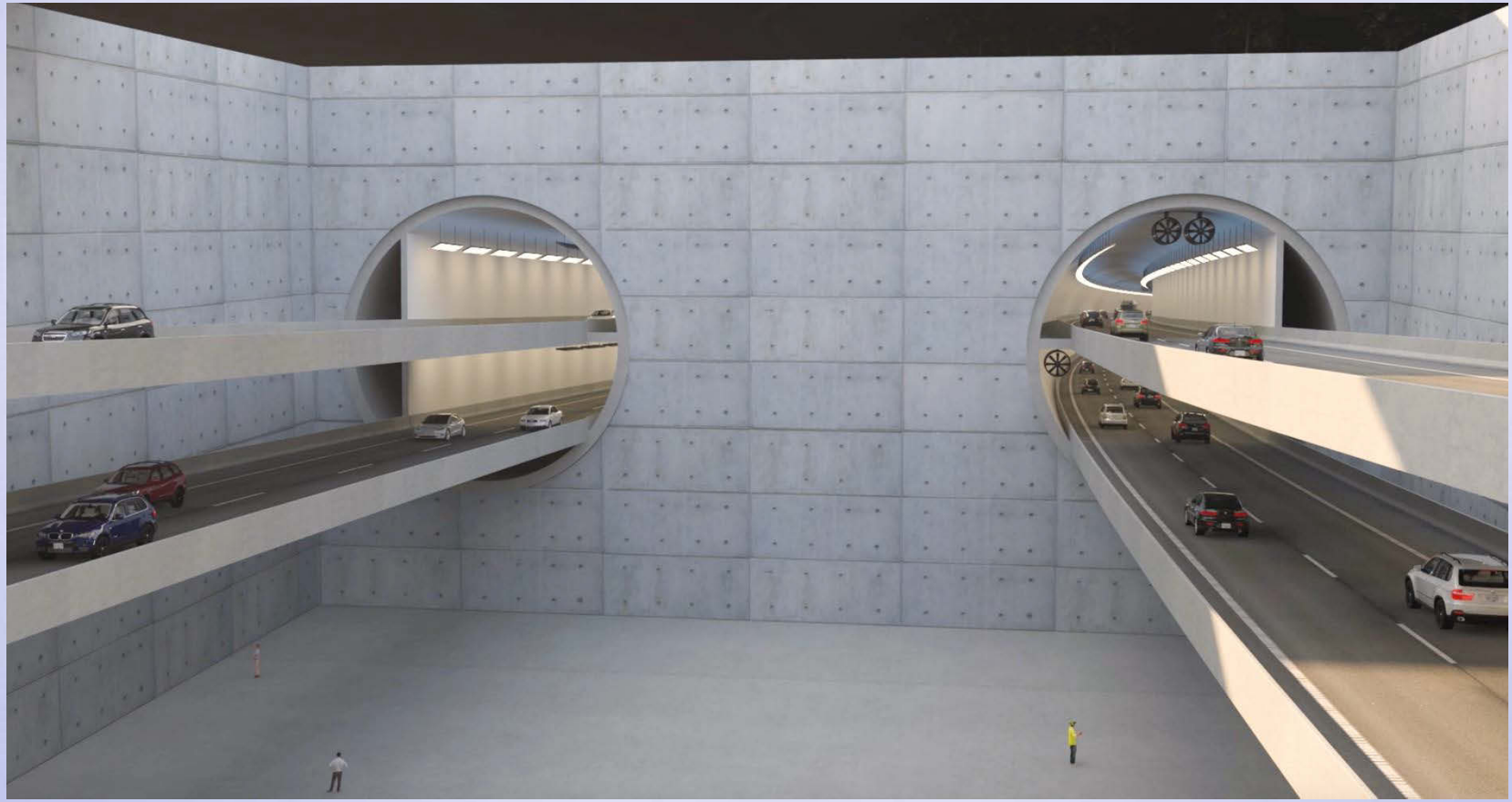
Deep Bored Tunnel Size Reference

Canada Line

Evergreen Line

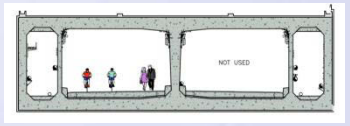
SR99 (Bertha)
Slightly smaller than would be required

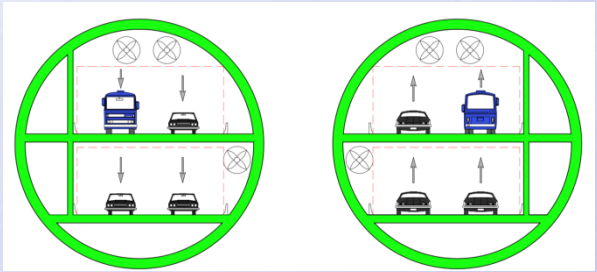
Deep Bored Tunnel Cross Section



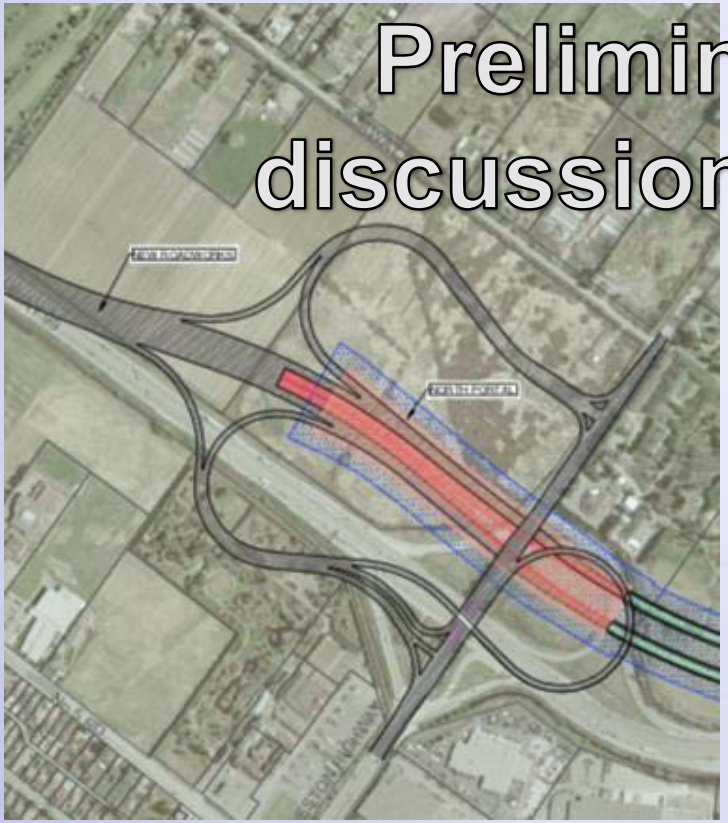
Deep Bored Tunnel

- Significant risk of multiple sinkholes
- Longest timeframe to completion
- Extends beyond Steveston and Hwy 17A I/C
- Increased transit trip times
- Existing tunnel must be retained for pedestrians and cyclists
- ALR impacts – up to 200 acres
- Approx. 3 times cost of ITT/bridge





Deep Bored Tunnel Interchange Footprint



Preliminary draft for discussion purposes only

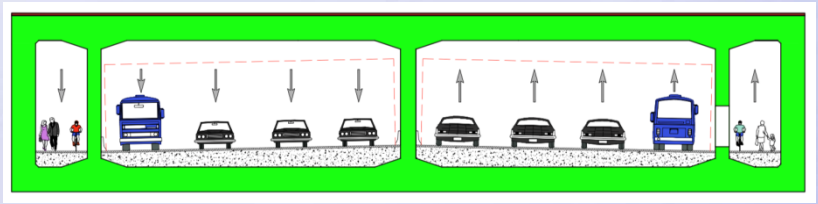
Immersed Tube Tunnel Concept Design

Immersed Tube Tunnel Concept Planview

Immersed Tube Tunnel Portal

Immersed Tube Tunnel

- Temporary environmental impact during construction; lowest long term impact
- Greatest potential for environmental enhancements
- Medium timeframe to completion
- Low property impact
- Comparable order of magnitude cost to bridge

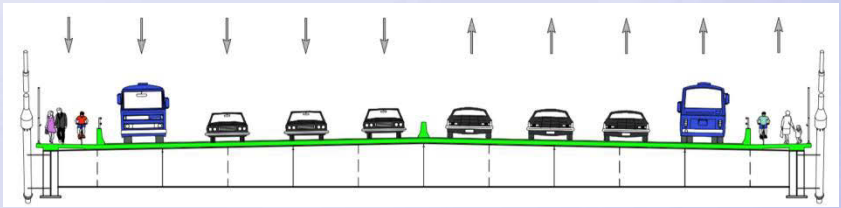


Long Span Bridge Concept Planview

Long Span Bridge Concept Design

Long Span Bridge

- Long term noise, visual and shading impacts
- Land-side property impacts
- No in-river disturbance
- Shortest timeframe to completion
- Comparable order of magnitude cost to ITT
- Local construction expertise



Technology Summary

Option	Bore Tunnel	Immersed Tube	Long-span Bridge
Environment Impacts	• Sinkhole potential • ALR • Ground densification	• In-river construction	• Noise, visual and shade
Est. Schedule • EA • Construction	 • 3 yr • 7 yr	 • 3 yr • 5 yr	 • 2 yr • 5 yr
Construction Risk	• High	• Medium	• Low
High level cost estimate	• Approx. 3 times cost of ITT/bridge	• Comparable cost to bridge	• Comparable cost to ITT

Goals Summary

Key differences by goal area:

- **Goal 1**: ALR impact, timeline
- **Goal 2:** Transit, cycling + pedestrian experience
- **Goal 3:** Goods and service reliability, industrial land impact
- **Goal 4:** In-river impact, community livability

Not aligned Somewhat aligned Aligned

Goal Achievement Analysis Summary

Goal	Bored Tunnel	Immersed Tube	Bridge
Goal 1: Support community sustainability			
Goal 2: Increase share of sustainable modes			
Goal 3: Enhance regional goods movement			
Goal 4: Support healthy environment			

 Not aligned

 Somewhat aligned

 Aligned

Request to Task Force

- Select preferred option(s) to endorse for Metro Vancouver Board recommendation to take to public engagement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Thank You