



FALSE CREEK FLATS GRADE-SEPARATED ROAD ALIGNMENT

**REPORT TO COUNCIL | RTS 12872
OCTOBER 1, 2019**



SUMMARY OF RECOMMENDATIONS

- A. THAT Council support grade-separating the BI Rail Line with an underpass on Prior/Venables Street at no cost to the City;

AND THAT the underpass include an all-ages-and-abilities Adanac Bikeway route, provide accessible walkways, facilitate access to local businesses, and be integrated with public spaces and an enjoyable public realm.

- B. THAT staff work with the neighbourhood to design “great street” treatments to reduce vehicle speeds, improve walkability and access to the park, and enhance the connections throughout the neighbourhood; and to pursue improvements in the near-term before the underpass is completed.
- C. THAT any park boundary changes due to the underpass result in a net increase of permanent park space to Strathcona Park by exchanging street right-of-way.

CONTEXT



VANCOUVER IS PART OF THE ASIA-PACIFIC GATEWAY

Across the region, significant investments are being made to move goods more sustainably by rail rather than truck

VANTERM

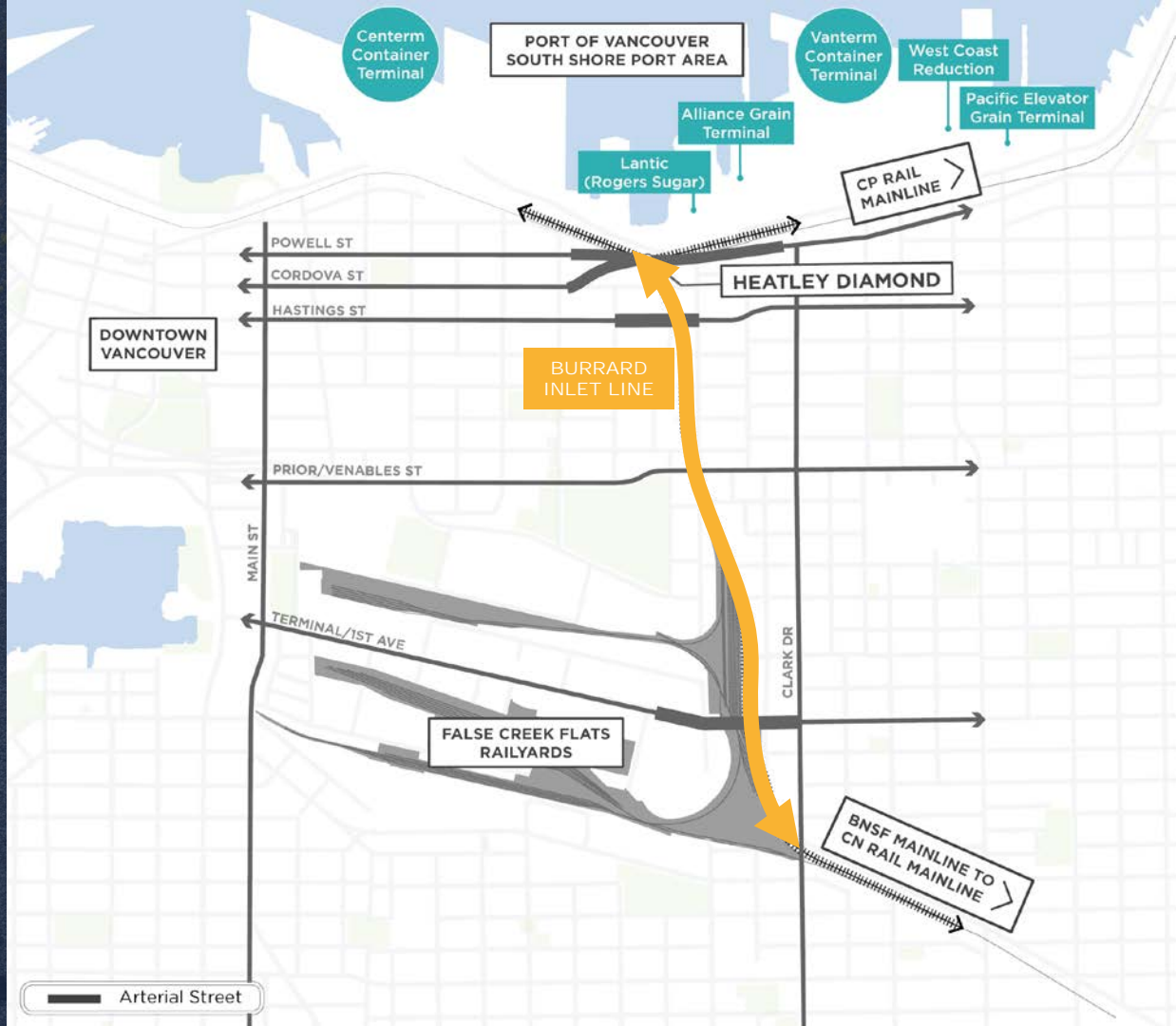
CENTERM

Rail is **5x**
more efficient than trucks
for fuel consumption
and GHG emissions

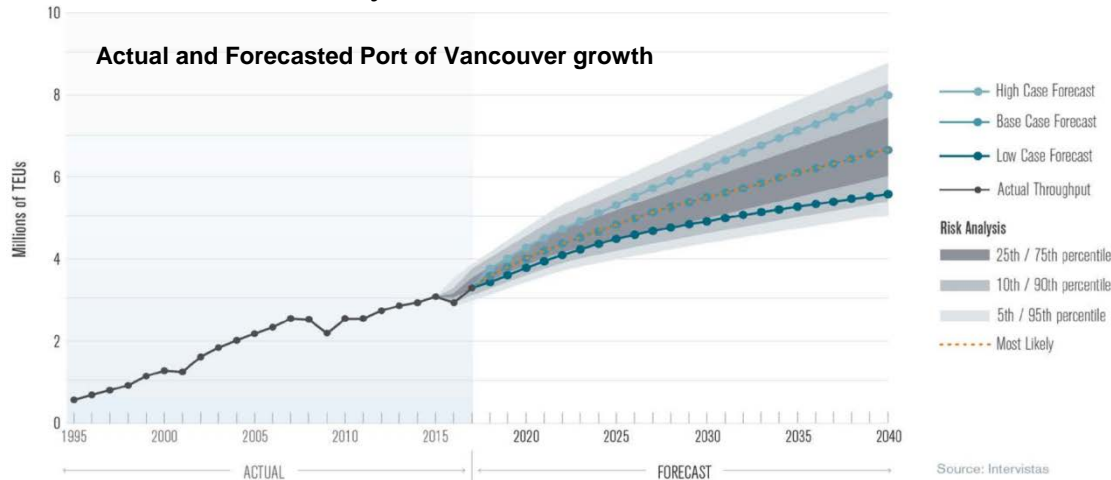
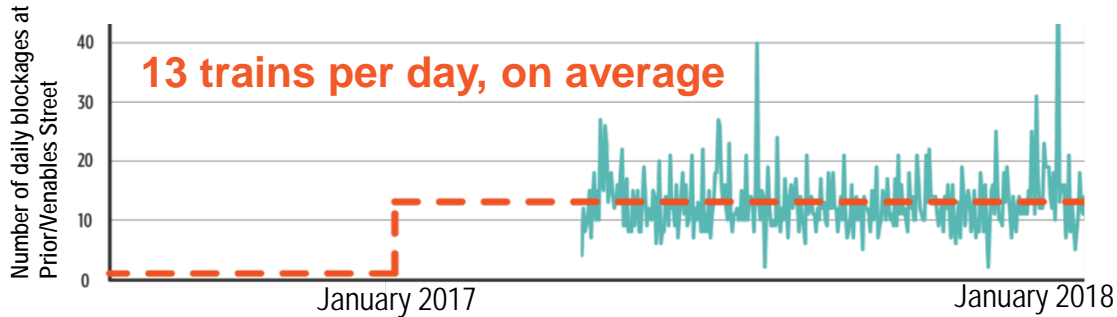


BURRARD INLET RAIL LINE (BI LINE)

Serves the national economy, connecting the Port to the rest of North America



PORT-RELATED RAIL ACTIVITY IS EXPECTED TO CONTINUE INCREASING



Source: Vancouver Fraser Port Authority, and TRAINfo data collected at Prior/Venable Street

- In January 2017, frequent rail activity resumed on the BI Line
- Port activity is anticipated to increase from Investments to improve rail efficiency and expand container terminal capacity
- CN has received Transport Canada funding to double-track the BI Line

ARTERIAL STREET NETWORK

Over 280,000 trips cross the BI Line each day on major vehicle, transit, and cycling routes.

Streets support public life and provide reliable access to local neighbourhoods, businesses, and Downtown



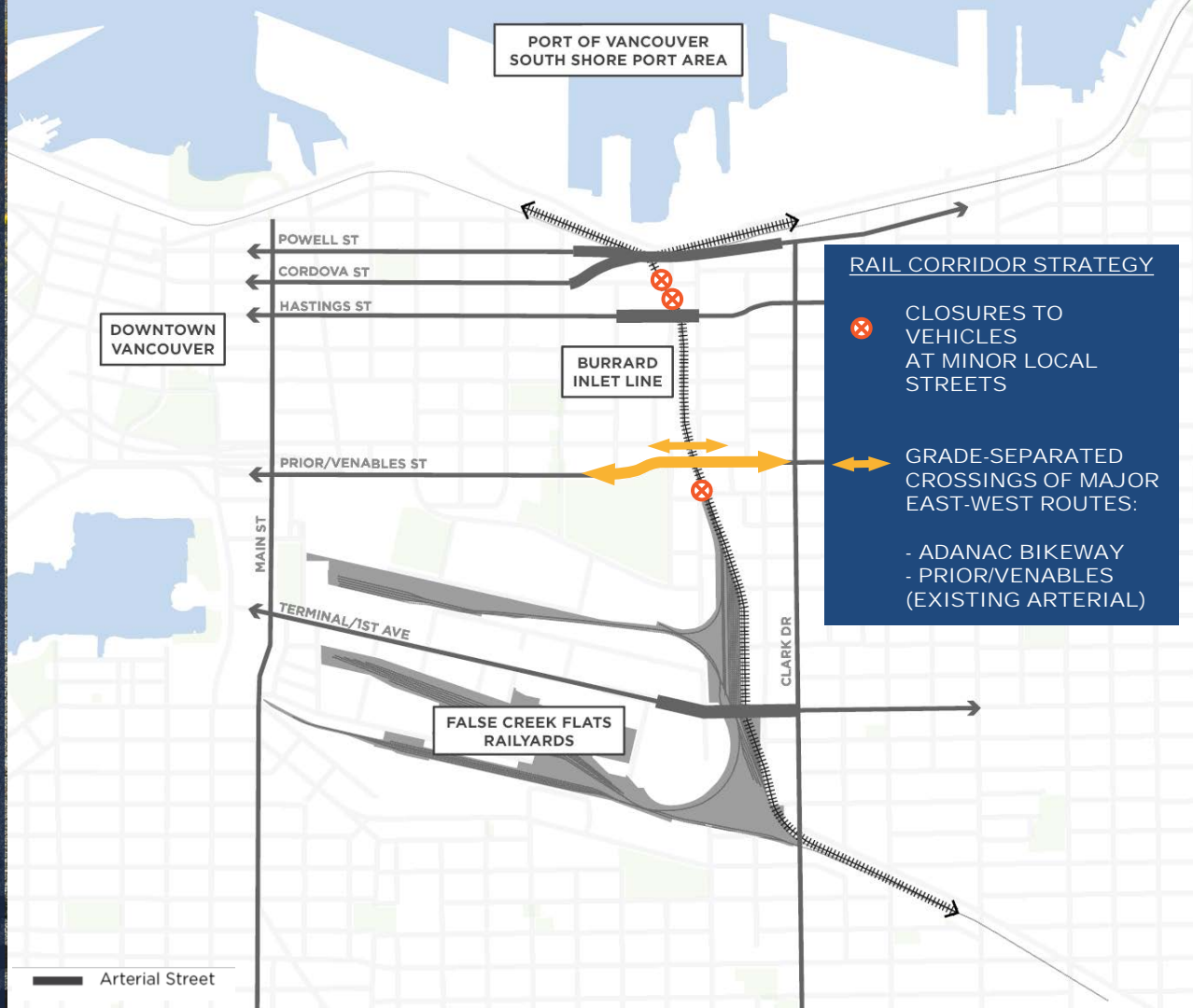
RAIL CORRIDOR STRATEGY (2008)

Goal

To support rail operations while also mitigating transportation and community impacts

Recommendation

To fully grade-separating the rail corridor and eliminate all conflicts between rail traffic and road users



A GROWING NEED TO GRADE-SEPARATE

- Rail exposure index exceeds industry standard threshold for grade-separating
- Grade-separation of the existing arterial is needed to:
 - Address safety for people walking, cycling and driving across the tracks
 - Improve reliability and reduce disruptions for emergency response, transit, and goods movement
 - Reduce short-cutting on local streets from vehicles accessing overpasses on other streets



INDEPENDENT OF THE STREET NETWORK AND TIMING OF REPLACING THE VIADUCTS

EXISTING VIADUCTS




RAIL GRADE-SEPARATION OF EXISTING ARTERIAL

REPLACEMENT STREET NETWORK



RAIL GRADE-SEPARATION OF EXISTING ARTERIAL




PRIOR/VENABLES ST

Any alternate route requires an overpass to cross the rail yard

AN OPPORTUNITY & DIRECTION TO EXPLORE ALTERNATE ROUTES

October 2015

*THAT Council immediately approve downgrading of Prior Street to a local-serving street **upon the completion of a new east/west arterial alignment** to be determined through an accelerated planning process*



EXPLORING ALTERNATE ARTERIAL ALIGNMENTS



MANY PEOPLE, BUSINESSES, PARKS, AND ESSENTIAL SERVICES ARE IMPACTED BY ANY NEW ROUTE



MANY PEOPLE, BUSINESSES, PARKS, AND ESSENTIAL SERVICES ARE IMPACTED BY ANY NEW ROUTE

NORTHEAST FALSE CREEK



OLYMPIC VILLAGE

PACIFIC CENTRAL STATION

FALSE CREEK FLATS RAILYARDS

TERMINAL/E 1ST AVE

E 1ST AVE

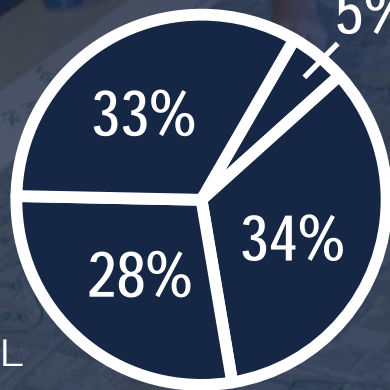
E 2ND AVE

FALSE CREEK FLATS AREA PLAN (2015-2017)

PREVIOUSLY
CONSIDERED OPTIONS
(William, Prior, and
Malkin North)

NEUTRAL

5%



MALKIN

NATIONAL

4,300

People engaged during the
False Creek Flats Area Plan

No route preference emerged when Malkin and National were presented as leading options in 2016. Strong desire to reconsider options.



Source: Online survey of over 150 respondents following the March 2016 Prior/Venables Replacement Arterial Open House Survey, asking which route was preferred

FLATS ARTERIAL COMMUNITY PANEL (2018-2019)

42

Panelists from local neighbourhoods, businesses & city-wide

8

Days of discussion and learning from over 50 speakers

9

Variations of the four arterial routes considered

2

Public workshops attended by over 200 people



Tasked with recommending a route for a grade-separated arterial that best meets the needs of the neighbourhood, city and region as a whole

COMMUNITY PANEL VALUES & RECOMMENDATION

Values Ranked in Order of Importance



Impacts on residents and the local neighbourhood



Impacts on parks, recreation, community gardens, and other green spaces



Impacts on the movement of people and goods



Impacts on businesses locally and throughout the region



Considerations of cost and constructability



Impacts on public-serving civic facilities

Shortlisted Route Options

(Round 1 of Instant Run-off Voting by 37 panelists)

Prior/Venables - Underpass (24.3%)

Malkin North (10.8%)

National-Grant (8.1%)

National-Charles (43.2%)

National-Civic Facilities (13.5%)

Recommended Route Option

(Round 4 of Instant Run-off Voting by 37 panelists)

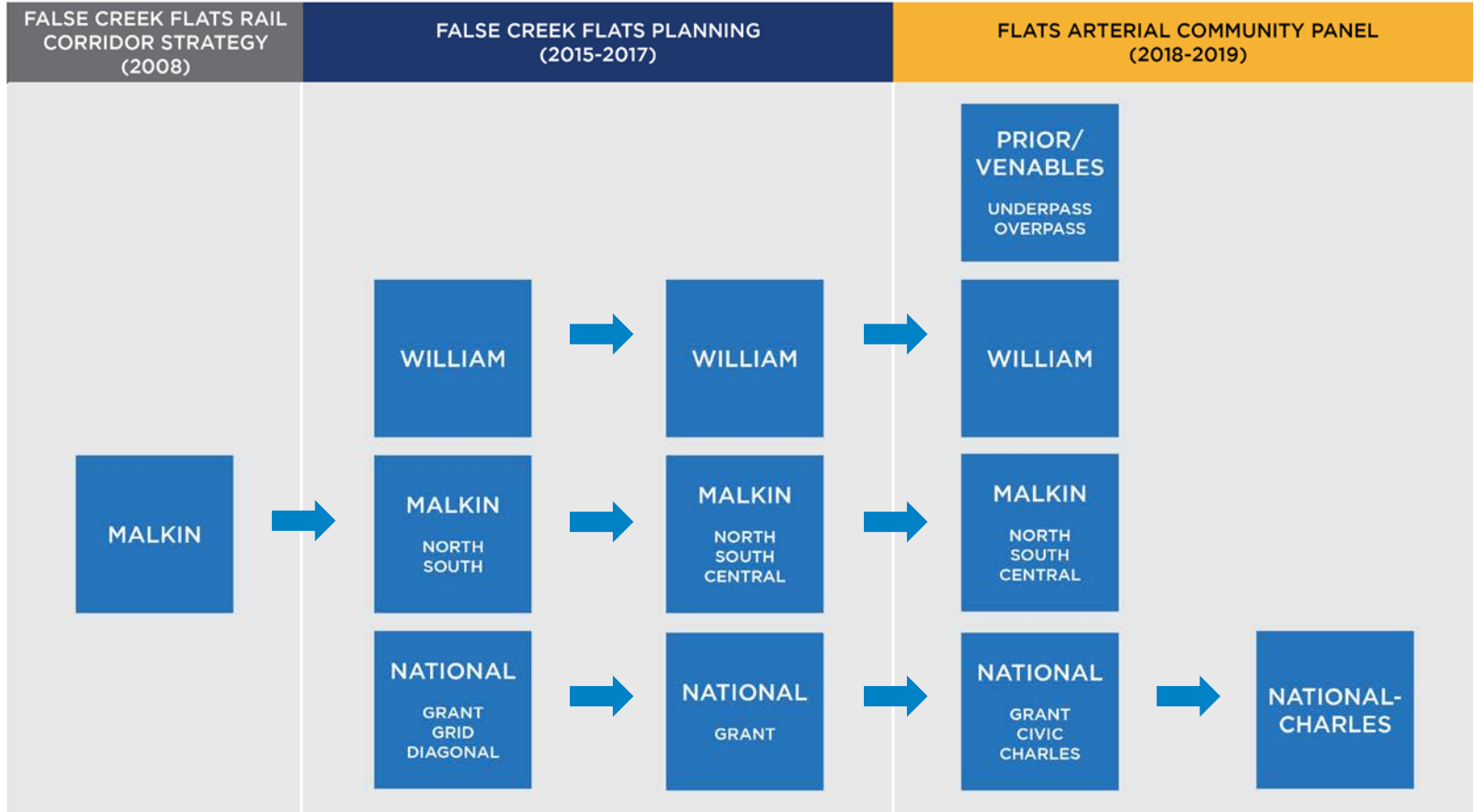
**National-Charles
Overpass**

67.6%
25 panelists

**Prior/Venables
Underpass**

32.4%
12 panelists

EXTENSIVE PUBLIC AND STAKEHOLDER INPUT TO EXPLORE ALTERNATE ALIGNMENTS



MALKIN OVERPASS OPTIONS



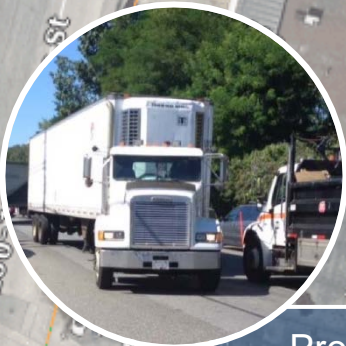
MALKIN - SIGNIFICANT IMPACT TO BUSINESS COMMUNITY



Currently a 12m wide local street with no sidewalks

Wide historic street right-of-way

A portion of the Cottonwood Community Gardens were planted in the street right-of-way



Produce Row businesses maneuver large trucks on-street to back into loading bays, and block traffic from passing

MALKIN - SIGNIFICANT IMPACT TO BUSINESS COMMUNITY

- Malkin North variation could reduce most significant business impacts in constrained section (Chess St to Raymur Ave) and was most supported variation by Community Panel (top 5 shortlist)
- Wide range of business impact mitigations, possibly requiring relocation
- Disruptions to regional food distribution supply chain



MALKIN - SIGNIFICANT IMPACT TO GREEN SPACE

- Of all arterial alignments, Malkin North would remove the largest and greatest number of trees
- Would remove Cottonwood Community Gardens planted in street right-of-way



MALKIN - SIGNIFICANT COMMUNITY OPPOSITION

When proposed as a leading option in 2016, significant opposition was heard from Produce Row businesses, Charles Street businesses, Cottonwood Community Gardens, BC Trucking Association, Greater Vancouver Board of Trade, Vancouver Economic Commission



MALKIN

NOT RECOMMENDED TO REPLACE PRIOR/VENABLES STREET

- Low community support:
 - Significant impact on businesses and food supply chain
 - Significant impact on natural assets and gardens
- Roughly twice the cost to grade-separate than the existing arterial



WILLIAM OVERPASS OPTION



LOW COMMUNITY SUPPORT

- Significant impacts to Strathcona Park
 - Fragmentation
 - Loss of park land
 - Impacts to amenities
 - Impacts function and flexibility of park space
 - Loss of trees and habitat

NOT SHORTLISTED BY
COMMUNITY PANEL



WILLIAM

NOT RECOMMENDED TO REPLACE PRIOR/VENABLES STREET

- Low community support:
 - Significant impact on Strathcona Park and natural assets
 - Would require Park Board approval
 - High impact on businesses and food supply chain
- Roughly twice the cost to grade-separate than the existing arterial



NATIONAL OVERPASS OPTIONS



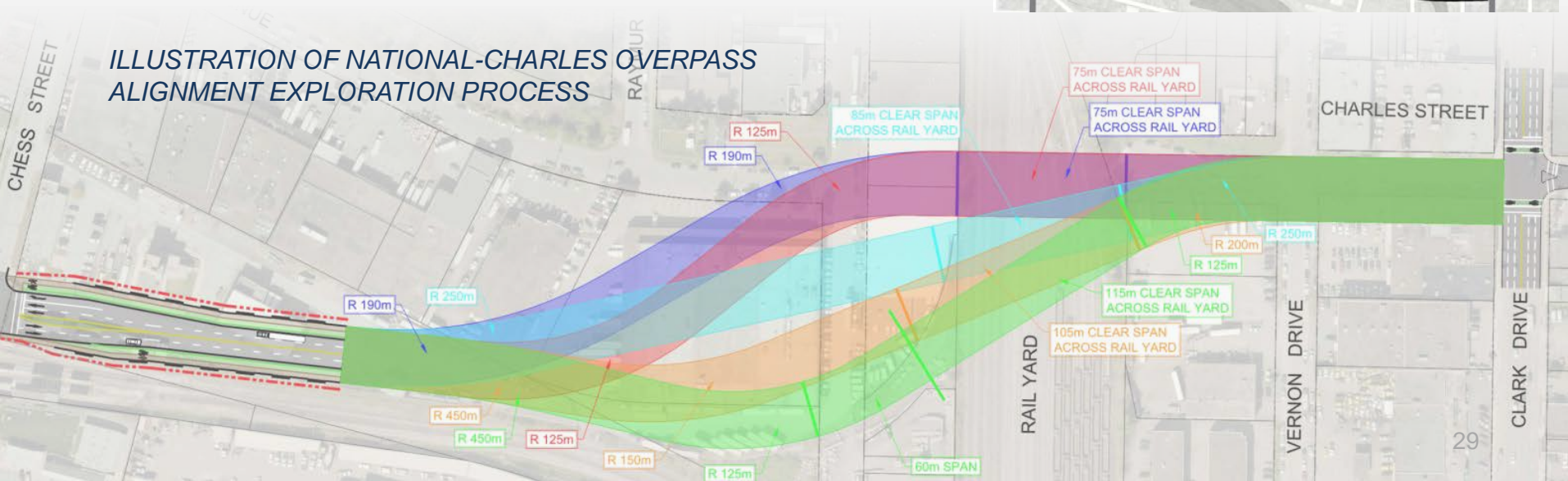
NATIONAL-CHARLES OVERPASS

- Explored many variations on National
- Multiple National-Charles overpass alignments explored to reduce property impacts and costs

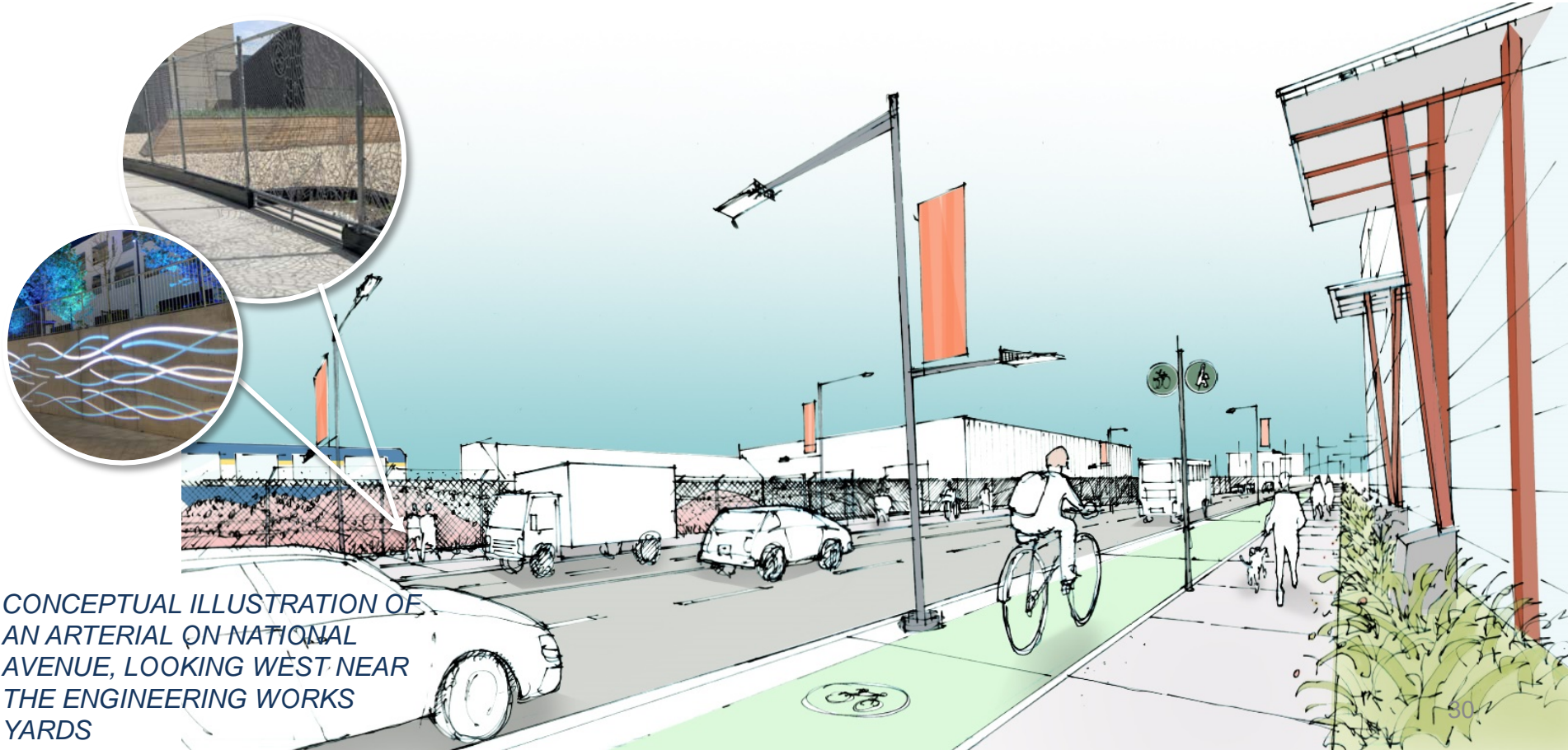
FLATS ARTERIAL COMMUNITY PANEL
(2018-2019)



ILLUSTRATION OF NATIONAL-CHARLES OVERPASS
ALIGNMENT EXPLORATION PROCESS



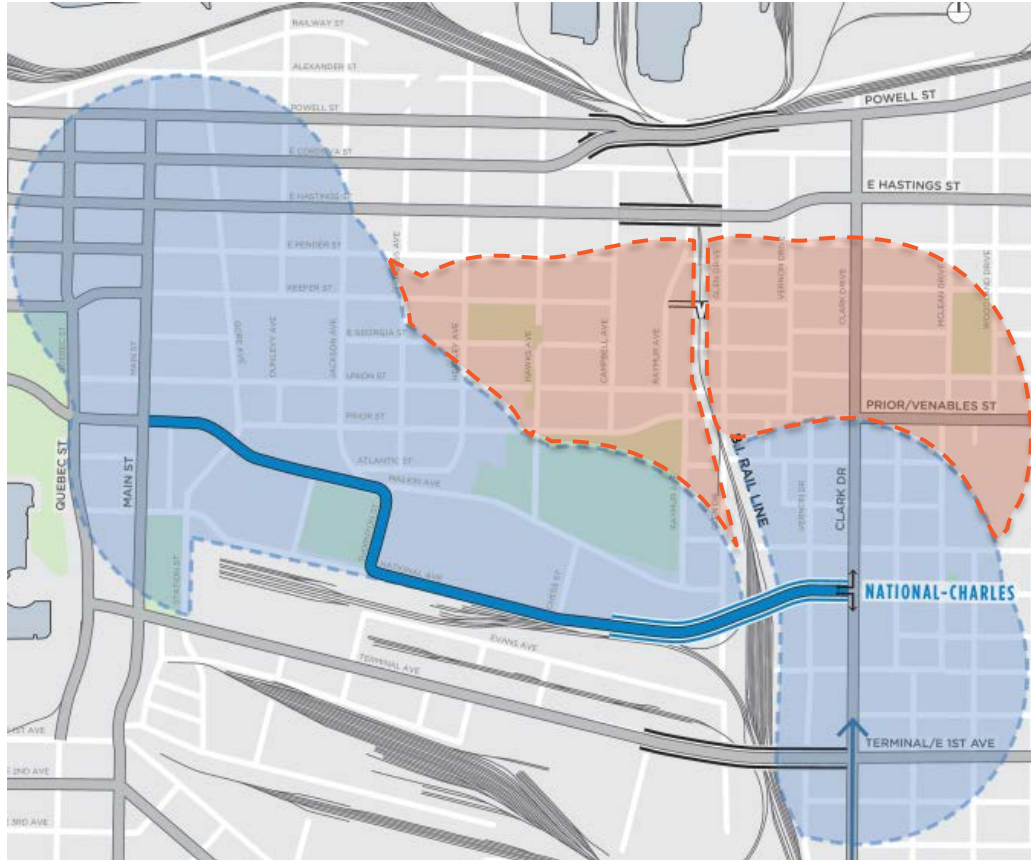
STREET SECTION ALONG NATIONAL AVE



CONCEPTUAL ILLUSTRATION OF
AN ARTERIAL ON NATIONAL
AVENUE, LOOKING WEST NEAR
THE ENGINEERING WORKS
YARDS

REDUCED TRANSIT ACCESS FOR MANY RESIDENTS AND BUSINESSES

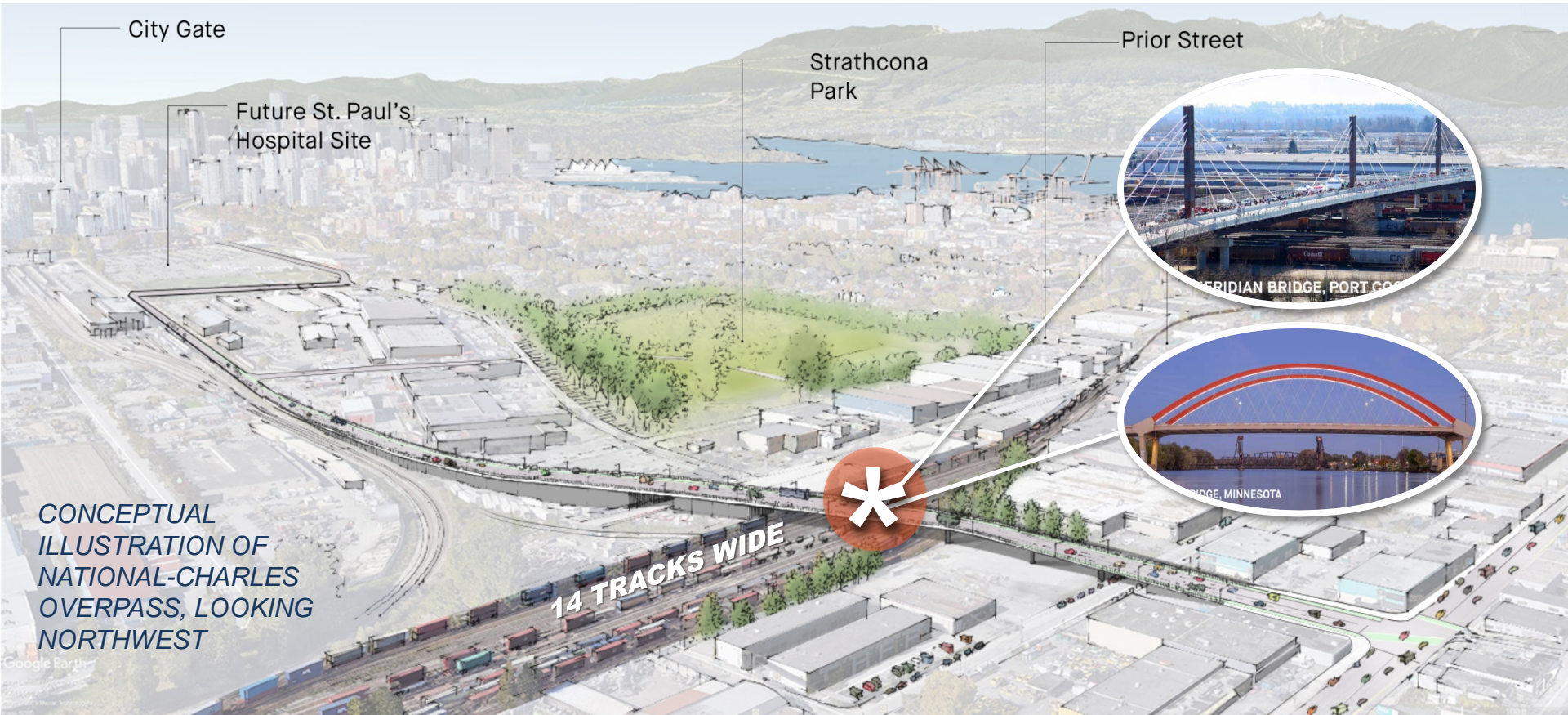
**RESIDENTS AND
BUSINESSES WITHIN
5 MIN WALK TO
TRANSIT ON
NATIONAL-CHARLES**



**RESIDENTS AND
BUSINESSES NO
LONGER WITHIN
5 MIN WALK TO
ROUTE 22**

Based on TransLink's Transit Service Guidelines, that recommend no more than a 400m walk for this type of transit service, assuming it would be rerouted along the new arterial, and connect with the existing route on Gore Avenue and Clark Drive

NATIONAL-CHARLES - SIGNIFICANT COSTS CANNOT BE AVOIDED



City Gate

Future St. Paul's
Hospital Site

Strathcona
Park

Prior Street

MERIDIAN BRIDGE, PORT COLBORNE

BRIDGE, MINNESOTA

CONCEPTUAL
ILLUSTRATION OF
NATIONAL-CHARLES
OVERPASS, LOOKING
NORTHWEST

14 TRACKS WIDE

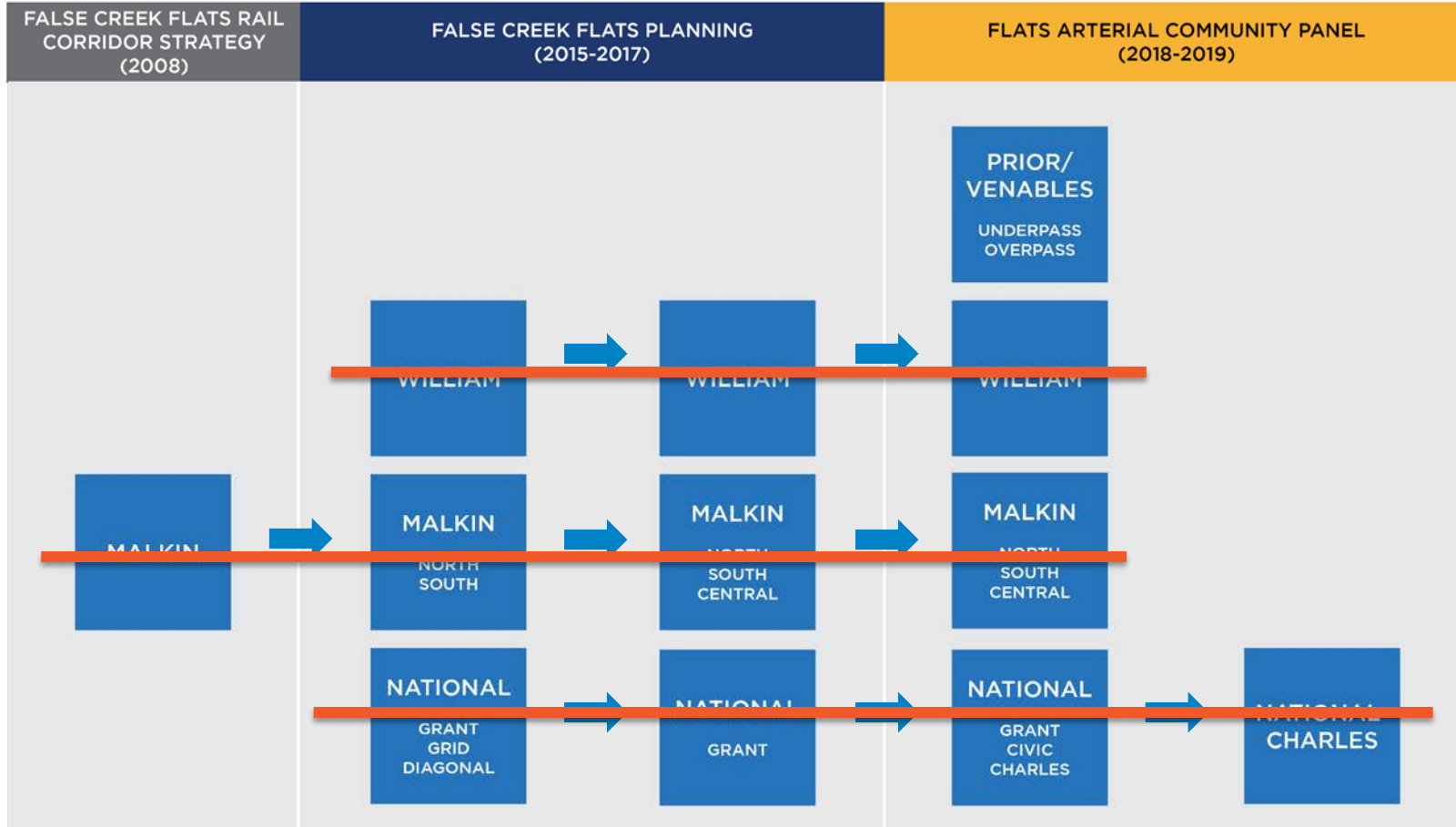
NATIONAL-CHARLES

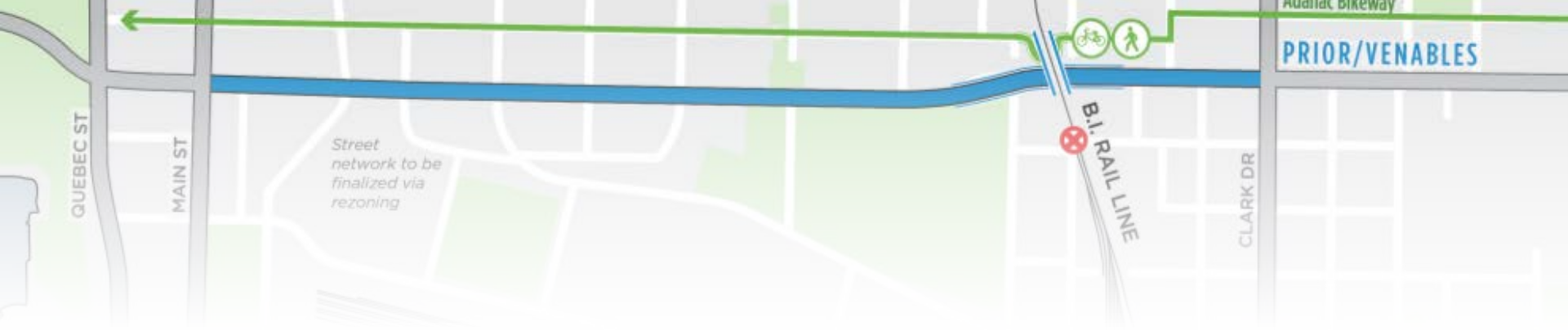
NOT RECOMMENDED TO REPLACE PRIOR/VENABLES STREET

- Mixed community support:
 - Recommended by Community Panel and supported by many residents
 - Many businesses, stakeholders, and other residents do not support
- Over \$400 million, highest cost of all alternate routes
- Project partners are not supportive, and cost would likely place an undue fiscal burden on the City.

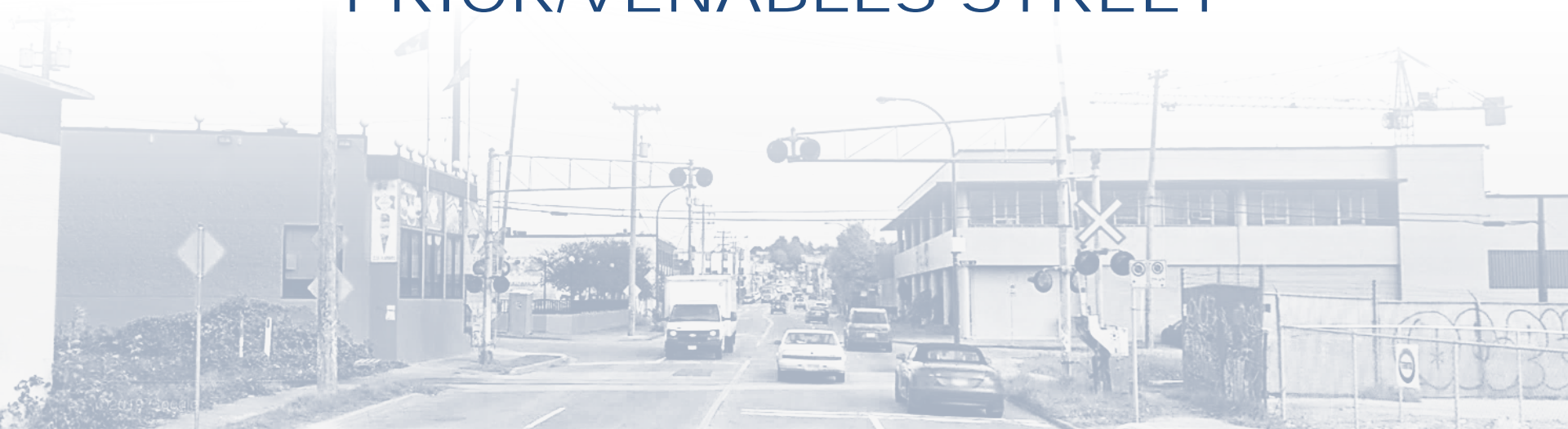


WE CANNOT RECOMMEND AN ALTERNATE ROUTE TO REPLACE PRIOR/VENABLES





GRADE-SEPARATING AND ENHANCING PRIOR/VENABLES STREET



PRIOR/VENABLES IS DIRECT AND RELIABLE



Most residents and businesses are within a 5 minute walk to transit



Fastest emergency response times for Fire Hall #1, and future St. Paul's Hospital



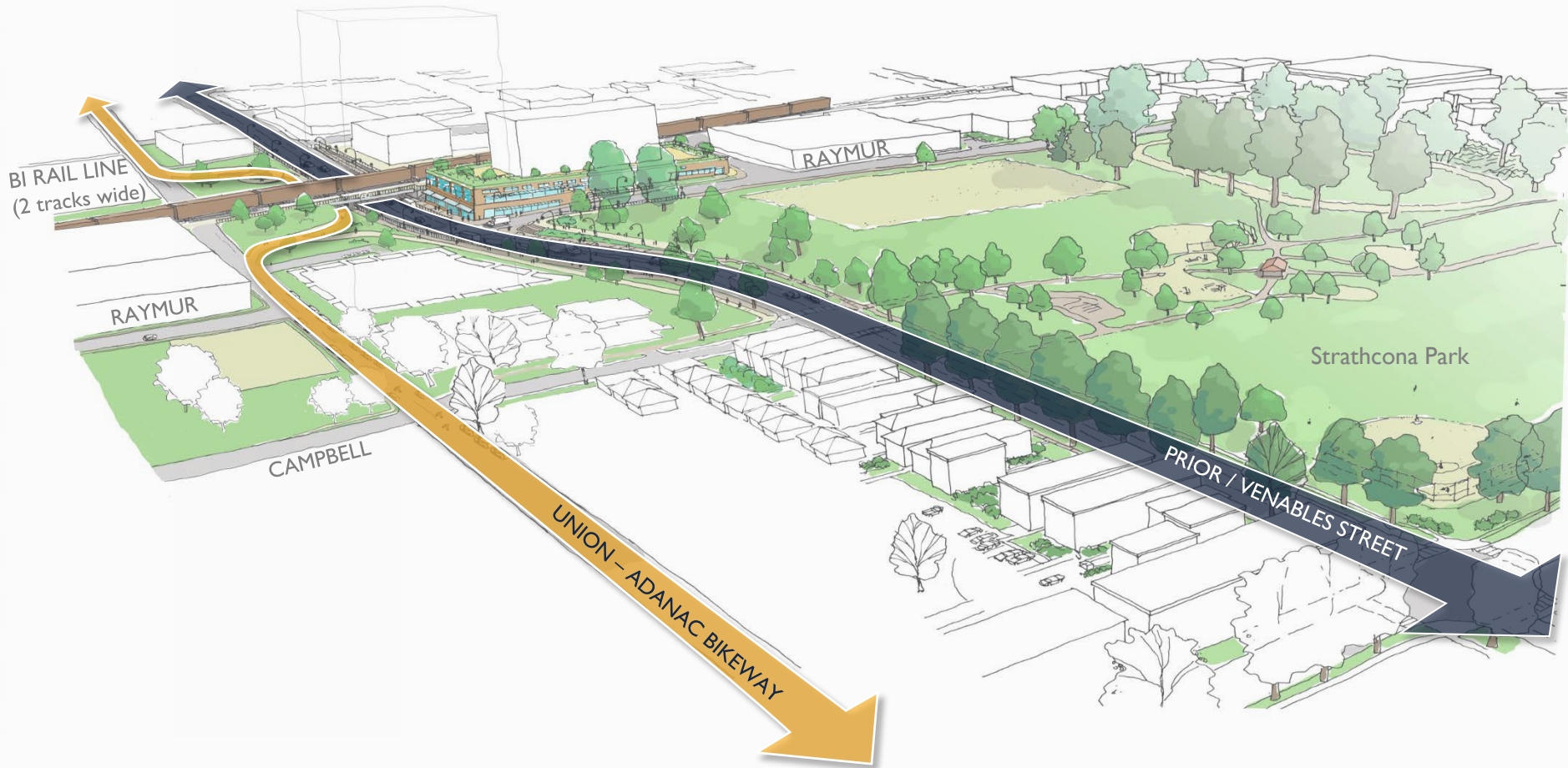
Centrally aligned between residents and businesses, providing convenient access to all destinations



Direct connection between communities on either side of the rail tracks



PRIOR/VENABLES STREET & ADANAC BIKEWAY UNDERPASS



UNDERPASS PREFERRED MORE THAN OVERPASS

- Reduces tendency for vehicles to speed
- More accessible and comfortable for walking and cycling
- Better connections to businesses, and more opportunities for improving connections between the park and neighbourhood
- Less of a visual barrier
- More open and fewer hidden spaces



UNDERPASS INTEGRATED WITH BUILDINGS & GREEN SPACES



OPPORTUNITIES TO INTEGRATE WITH EDGES

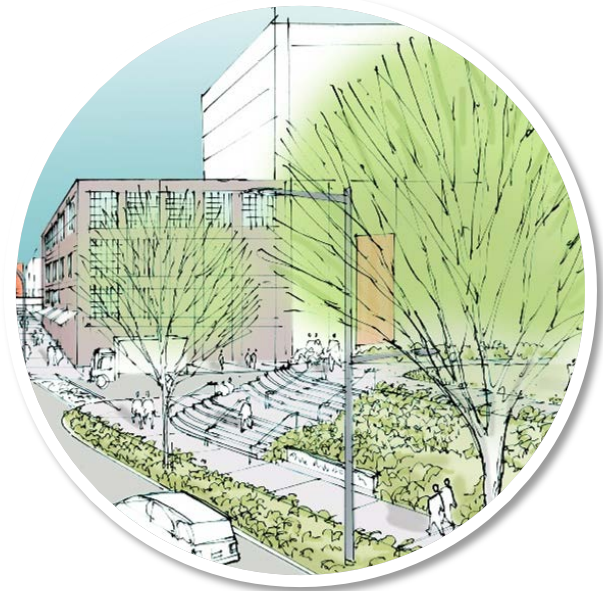


ILLUSTRATION OF UNDERPASS APPROACHES, AND POTENTIAL INTEGRATION WITH BUILDINGS AND PARK EDGES. EXACT DESIGN TO BE DISCUSSED WITH PARK STAFF AND COMMUNITY.

IMPROVE CROSSINGS TO STRATHCONA PARK



ILLUSTRATION OF POTENTIAL ENHANCEMENTS AT HAWKS AVENUE, TO BE DISCUSSED WITH PARK STAFF AND COMMUNITY.

CONNECTS TO A FUTURE 'GREAT STREET'

Approximate location
of current viaducts



CONCEPTUAL ILLUSTRATION OF PRIOR STREET, LOOKING WEST AT GORE AVE TOWARDS THE REMOVED VIADUCTS

ENHANCING THE PRIOR/VENABLES CORRIDOR & NEIGHBOURHOOD



- 1 Provide new signals and crossings at Gore Ave and Dunlevy Ave.
- 2 Improve the public realm on Prior St as part of the St. Paul's Hospital rezoning and other new developments.
- 3 Consider expanding Trillium Park North Garden.
- 4 Improve walking and enhance the public realm along Princess Ave.
- 5 Provide a new pedestrian and bike signal at Heatley Ave.
- 6 Transform the Hawks Ave corridor as a greenway for people walking and cycling by connecting Strathcona Park to the Portside Greenway, Strathcona Linear Park, Maclean Park and other destinations.
- 7 Explore repositioning the sidewalk behind street trees and improved landscaping alongside Strathcona Park.
- 8 Explore sidewalks, green infrastructure and landscaping to better connect Strathcona Park and Hawks Ave while maintaining vehicle access.
- 9 Provide new accessible sidewalks that are integrated with park edges.
- 10 Explore a wider, more accessible and more comfortable pedestrian link to replace the existing overpass on Keefer St.
- 11 Design the underpass as a dynamic and inviting public space. Weave the structural and roadway elements into the urban fabric and animate the neighbourhood.
- 12 Explore converting part of the street right-of-way (Cottonwood Community Gardens) to park space.
- 13 Explore opportunities for integrating public art and public space at the street ends along the rail corridor.
- 14 Provide a new pedestrian and bike signal at Vernon Dr.
- 15 Enhance Vernon Dr as an enjoyable walking and cycling alternative to Clark Dr.
- 16 Work with TransLink to enhance bus stops and shelters.

RECOMMEND GRADE-SEPARATION ON PRIOR/VENABLES

Minimizes shifting traffic
impacts onto other streets
and residents

Most overall benefits
at the least cost
of options considered

Most direct access
for emergency
vehicles and St.
Paul's Hospital

Highest quality transit
service for residents and
businesses

Cost-effective,
allowing taxpayer dollars to be
used on other transportation
priorities and facility upgrades

Least GHGs
and likelihood of
commercial vehicle
collisions

CAPITAL COSTS OF PRIOR/VENABLES UNDERPASS

Category	Capital Cost (in \$millions)
Property Acquisition	45
Streets	8
Structural	38
Construction Soft Costs	16
Construction Contingency	18
Transportation, Parks, and Public Realm Enhancements	To be determined
Total Capital Cost (Class D Estimate)	\$125 million + neighbourhood improvements to be determined

Note: Figures rounded to the closest million. All cost estimates were prepared in 2019. Construction costs do not have a cost allowance for escalation if the project is not constructed for several years. Property costs reflect current market value. Costs do not include components within the proposed New St. Paul's Hospital site that would be part of the cost-sharing arrangement that would be determined through the separate rezoning and public hearing process, which will be subject to Council approval. Aside from an underpass with an all-ages-abilities cycling route, wide sidewalks, and landscaping at the underpass and along Prior/Venables Street, costs do not include other transportation, public realm, public space, and park improvements in the neighbourhood.

- Recommend that grade-separation capital cost be funded by Port and rail partners
- City is responsible for operations & maintenance costs of roadway and drainage, but not the rail structure
- Enhancements to public realm, walking and cycling connections, and parks, to be determined through community engagement and capital planning process

SUMMARY OF RECOMMENDATIONS

- A. THAT Council support grade-separating the BI Rail Line with an underpass on Prior/Venables Street at no cost to the City;

AND THAT the underpass include an all-ages-and-abilities Adanac Bikeway route, provide accessible walkways, facilitate access to local businesses, and be integrated with public spaces and an enjoyable public realm.

- B. THAT staff work with the neighbourhood to design “great street” treatments to reduce vehicle speeds, improve walkability and access to the park, and enhance the connections throughout the neighbourhood; and to pursue improvements in the near-term before the underpass is completed.
- C. THAT any park boundary changes due to the underpass result in a net increase of permanent park space to Strathcona Park by exchanging street right-of-way.

CONSIDERATIONS



CONSIDERATIONS

Council could consider these in addition to staff's recommendations:

THAT Prior/Venables Street be downgraded to a collector street, with a 30 km/h speed limit near Strathcona Park

THAT staff implement a pilot to reduce traffic volumes and speeds on Prior/Venables Street with low cost initiatives in the near term, such as all-day parking on both sides and temporary curb bulges, with the intention of restricting traffic to one traffic lane in each direction; and that staff monitor travel time and reliability impacts to transit and emergency services, shortcutting on local residential streets, and traffic and safety impacts on other neighbourhoods; and that this will inform the future street and underpass design, which is intended to be one general purpose through-traffic lane in each direction.

THAT staff work with the Strathcona neighbourhood to prepare a summary of capital investment priorities for the next 10-15 years, including investments in community facilities, and parks and open spaces, and report back to Council in mid-2020.

PRIOR IS 1 LANE
PER DIRECTION

84% OF THE TIME



PRIOR IS 2 LANES

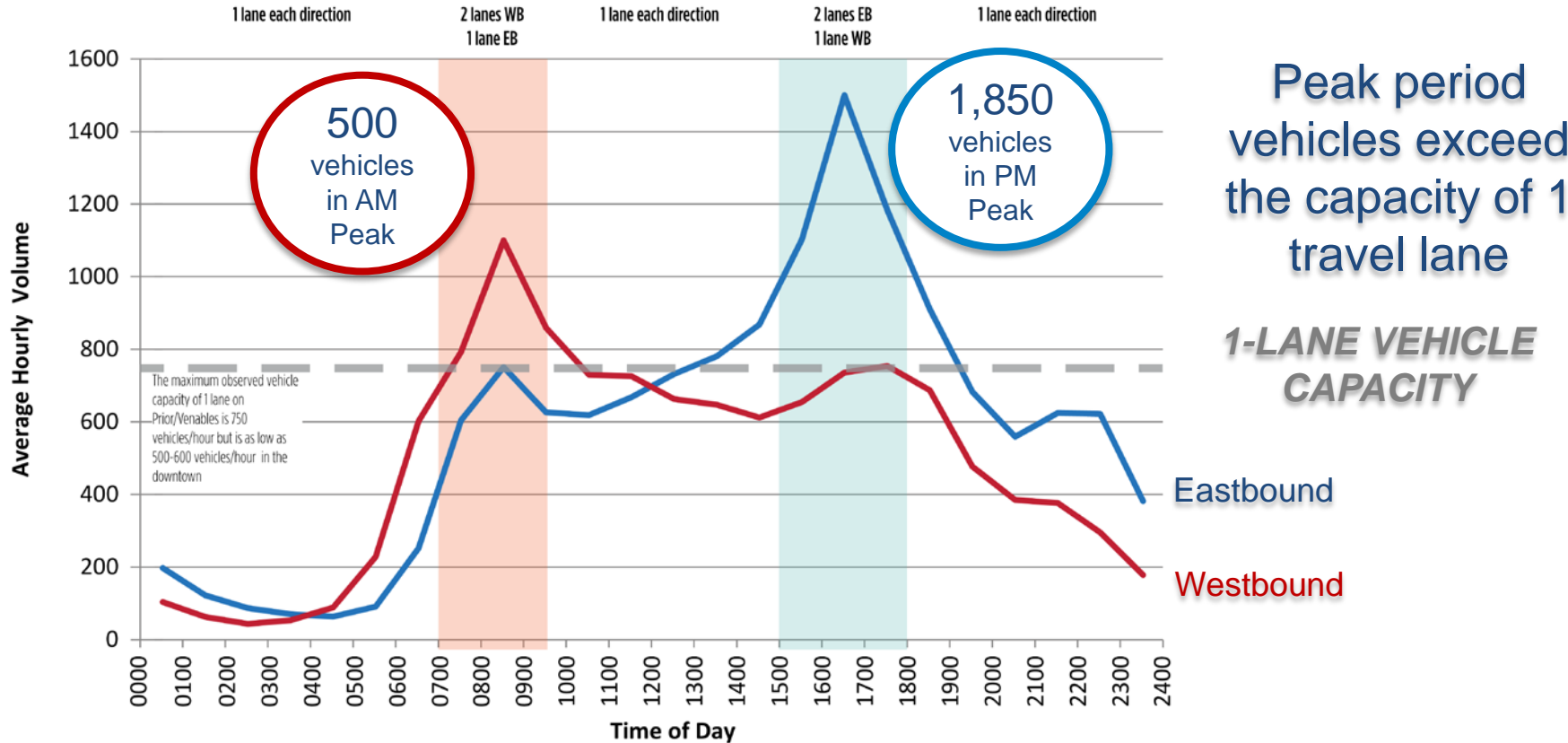
WESTBOUND ON
WEEKDAY MORNINGS
FOR 2.5 HOURS (7%)



EASTBOUND ON
WEEKDAY AFTERNOONS
FOR 3 HOURS (9%)



PRIOR STREET - HOURLY DISTRIBUTION OF VEHICLES ON TYPICAL WEEKDAY



Peak period vehicles exceed the capacity of 1 travel lane

1-LANE VEHICLE CAPACITY

Eastbound
Westbound

Source: Automated Hose Counts (2015) and Intersection Count data (2014 & 2015)

CURRENT MAJOR STREET NETWORK

