

# Appendix D

## Open House Display Boards

*Prepared by*

**Kirk & Co. Consulting Ltd.**

# Welcome

In September 2013, the Province of B.C. announced that the George Massey Tunnel will be replaced with a new bridge. As one of our transmission lines runs through the tunnel, we need to relocate it. We're looking at alternatives to relocate this transmission line to ensure the power supply remains reliable for our customers in the surrounding areas.

**Thank you for participating in our public consultation about the three alternatives we're studying to relocate our transmission line out of the George Massey Tunnel.**

**You can provide your feedback and learn more from November 2 to November 20, 2015 by:**

- ✓ Reading our Discussion Guide and completing the Feedback Form
- ✓ Coming to a small group meeting
- ✓ Coming to an open house
- ✓ Completing an online feedback form: [bchydro.com/gmtt](http://bchydro.com/gmtt)
- ✓ Emailing us: [stakeholderengagement@bchydro.com](mailto:stakeholderengagement@bchydro.com)
- ✓ Visiting our website: [bchydro.com/gmtt](http://bchydro.com/gmtt)
- ✓ Talking to BC Hydro project team members in person at one of our scheduled drop-in events in Richmond

## **HOW YOUR INPUT WILL BE USED**

What we hear from you about the three alternatives during consultation, along with input from First Nations, and our study results, will be considered as we assess the feasibility of the alternatives and determine a preferred alternative.

# We want to hear from you

## Small Group Meeting Schedule

Small group meetings are scheduled for two hours and will be a sit-down meeting format. Our project team will provide an overview of the relocation and alternatives under consideration, and answer questions. To attend a small group meeting in your community, please email [stakeholderengagement@bchydro.com](mailto:stakeholderengagement@bchydro.com) or call 604.623.4472 with your name, contact information and the meeting you'd like to attend.

DATE	TIME	LOCATION
November 3	10:00 a.m. to 12:00 noon	<b>DELTA</b> <b>Delta Town &amp; Country Inn</b> 6005 Hwy. 17A, Delta
	1:00 p.m. to 3:00 p.m.	
November 4	10:00 a.m. to 12:00 noon	<b>RICHMOND</b> <b>Richmond Country Club</b> 9100 Steveston Hwy., Richmond
November 4	2:00 p.m. to 4:00 p.m.	
November 5	10:00 a.m. to 12:00 noon	<b>RICHMOND</b> <b>Holiday Inn Express &amp; Suites Riverport</b> 10688 No. 6 Road, Richmond
	1:00 p.m. to 3:00 p.m.	
November 16	6:00 p.m. to 8:00 p.m.	

## Public Open House Schedule

Open houses are a drop-in meeting format. Project information will be provided, and members of our project team will be available for discussion and to answer questions. No RSVP is required.

DATE	TIME	LOCATION
November 3	5:00 p.m. to 8:00 p.m.	<b>Delta Town &amp; Country Inn</b>
November 5	5:00 p.m. to 8:00 p.m.	<b>Richmond Country Club</b>

## Visit Us

Members of our project team will be available for drop-in discussions during the following times.

DATE	TIME	LOCATION
November 13, 16 and 17	1:00 p.m. to 4:30 p.m.	<b>George Massey Tunnel Replacement Project Office</b> (Ironwood Plaza) 2030 – 11662 Steveston Hwy., Richmond

Please provide your feedback by **FRIDAY, NOVEMBER 20, 2015**




# Keeping the lights on:

## A critical part of BC Hydro's transmission system

The transmission line that runs through the George Massey Tunnel is a critical part of our network, supplying power to Richmond, Delta and other parts of the Lower Mainland. It's an important piece of infrastructure that helps us keep the lights on for tens of thousands of customers in your area. With the replacement of the George Massey Tunnel, we need to relocate this transmission line to ensure that the power supply remains reliable for you.

Some sections of the existing overhead transmission line, running adjacent to Highway 99 on either side of the tunnel, also need to be moved, before bridge construction and highway modifications begin. This can be done mostly within existing provincial highway and BC Hydro rights-of-way.

### SECTIONS OF EXISTING BC HYDRO TRANSMISSION LINE TO BE RELOCATED

	EXISTING OVERHEAD TRANSMISSION LINE
	RELOCATION OF SECTIONS MOSTLY WITHIN EXISTING RIGHTS-OF-WAY
	EXISTING TRANSMISSION LINE IN TUNNEL TO BE RELOCATED



# We're looking at three alternatives for relocating the transmission line out of the tunnel:

- **Alternative 1:** an overhead transmission line crossing the Fraser River, which would be aligned beside the new bridge
- **Alternative 2:** an underground transmission line running under the Fraser River through a borehole path created using horizontal directional drilling (HDD)
- **Alternative 3:** a transmission line located on the new bridge

We're working on the conceptual designs for all three alternatives and have completed a desktop assessment of the technical feasibility of each. This looks at factors such as safety, environmental impacts, visual impacts, maintenance, repairability, cost and schedule.

**Based on our work to date, Alternative 1, the overhead alternative, appears to be a technically leading alternative for a number of reasons, including a high level of safety and reliability of service.**

Your input from this consultation, along with input from other stakeholders and our study results, will be considered as we determine a preferred alternative. Input from First Nations is being gathered in a parallel process and will also be considered as we determine a preferred alternative.



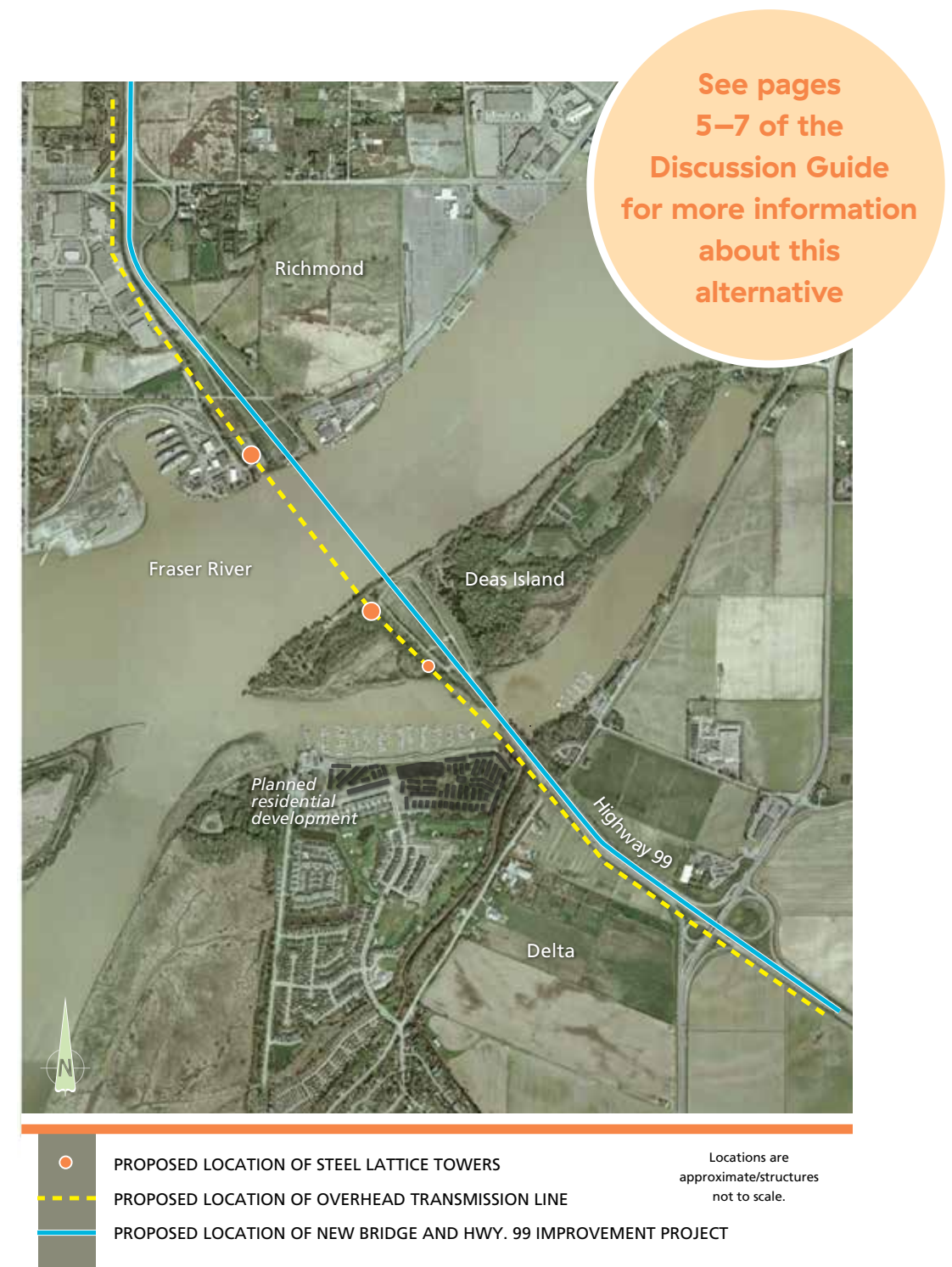
# Alternative 1: Overhead Transmission Line

For the overhead transmission line alternative, two steel lattice towers, approximately 120 metres in height (approximately half the height of the proposed new bridge towers), would support the overhead 230-kilovolt line crossing the Fraser River. One tower would be located on Deas Island and the other in Richmond, to the west of the new bridge. A second, smaller steel lattice tower, approximately 75 metres in height, would also be required on Deas Island.

## The overhead transmission line alternative has:

- The highest level of reliability, as it's the alternative most easily maintained and repaired after completion
- A high level of worker safety during construction and operation
- The fewest construction risks of the three alternatives
- The shortest timeline to complete

**Based on our work to date, Alternative 1, the overhead alternative, appears to be a technically leading alternative.**



# Alternative 1: Overhead Transmission Line

Below are renderings to show what the overhead transmission line alternative would look like from two viewpoints in Delta.



Rendering of the Overhead Transmission Line Alternative from Captain's Cove Marina, Delta (looking East-Northeast)



Rendering of the Overhead Transmission Line Alternative from Millennium Trail near Captain's Cove Marina, Delta (looking northeast)

*These renderings are based on the conceptual design for the transmission line alternatives and include the preliminary bridge designs for the George Massey Tunnel Replacement Project as provided by the Ministry of Transportation and Infrastructure. The final bridge design, and the transmission line alternatives, are subject to change as design and engineering progresses.*

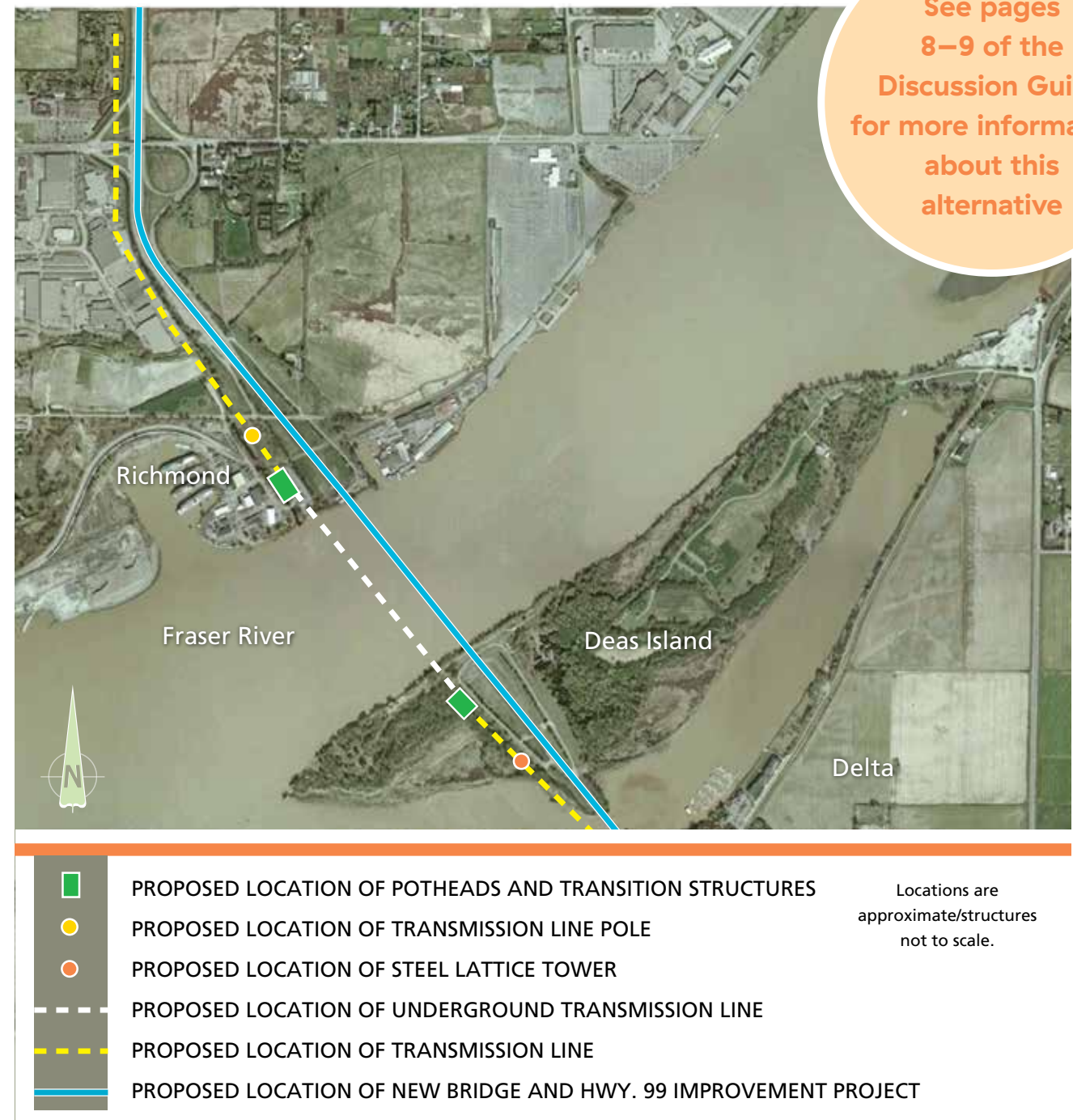


# Alternative 2: Underground Transmission Line

This alternative would consist of a transmission line running under the Fraser River, parallel to the new bridge, from Richmond to Deas Island. A borehole path would be created using horizontal directional drilling (HDD). Once a borehole path is drilled, conduits would be installed, through which the transmission cables would be pulled.

The cables would terminate on either side of the river, at a transition infrastructure, called a pothead, where they would transition from underground cable to an overhead line. A steel lattice tower, approximately 75 metres in height, would also be required on Deas Island.

See pages  
8–9 of the  
Discussion Guide  
for more information  
about this  
alternative





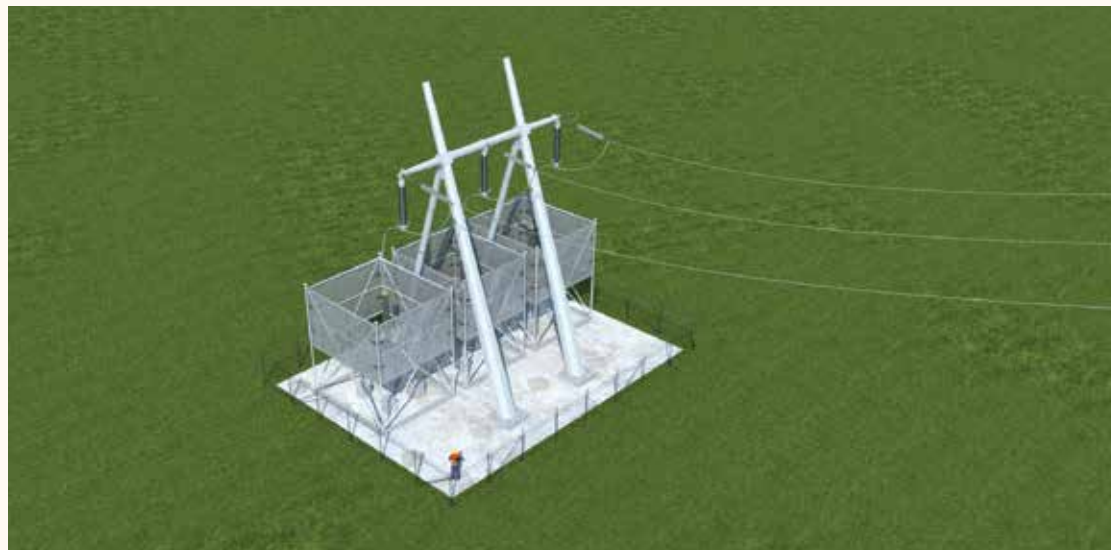
## Potheads: Moving from overhead transmission lines to underground transmission lines

Special infrastructure called a pothead is needed to transition transmission lines from overhead to underground. For the existing transmission line running through the George Massey Tunnel, the pothead structures are located at each end of the tunnel, in Richmond and on Deas Island.

The existing potheads need to be moved before the start of bridge construction, as they're located where the foundations for proposed new bridge towers are expected to be placed.

New potheads would be required if either the underground transmission line or transmission line on the bridge alternatives were selected as the preferred alternative.

Below is a rendering of a pothead structure, similar in design to those that would be needed for this relocation. These potheads would be located on Deas Island and in Richmond.



This rendering shows a proposed pothead concept from Rice Mill Road, Richmond. It is shown in yellow as some of the components could be obscured by trees in this viewpoint. Another pothead would be located on Deas Island.



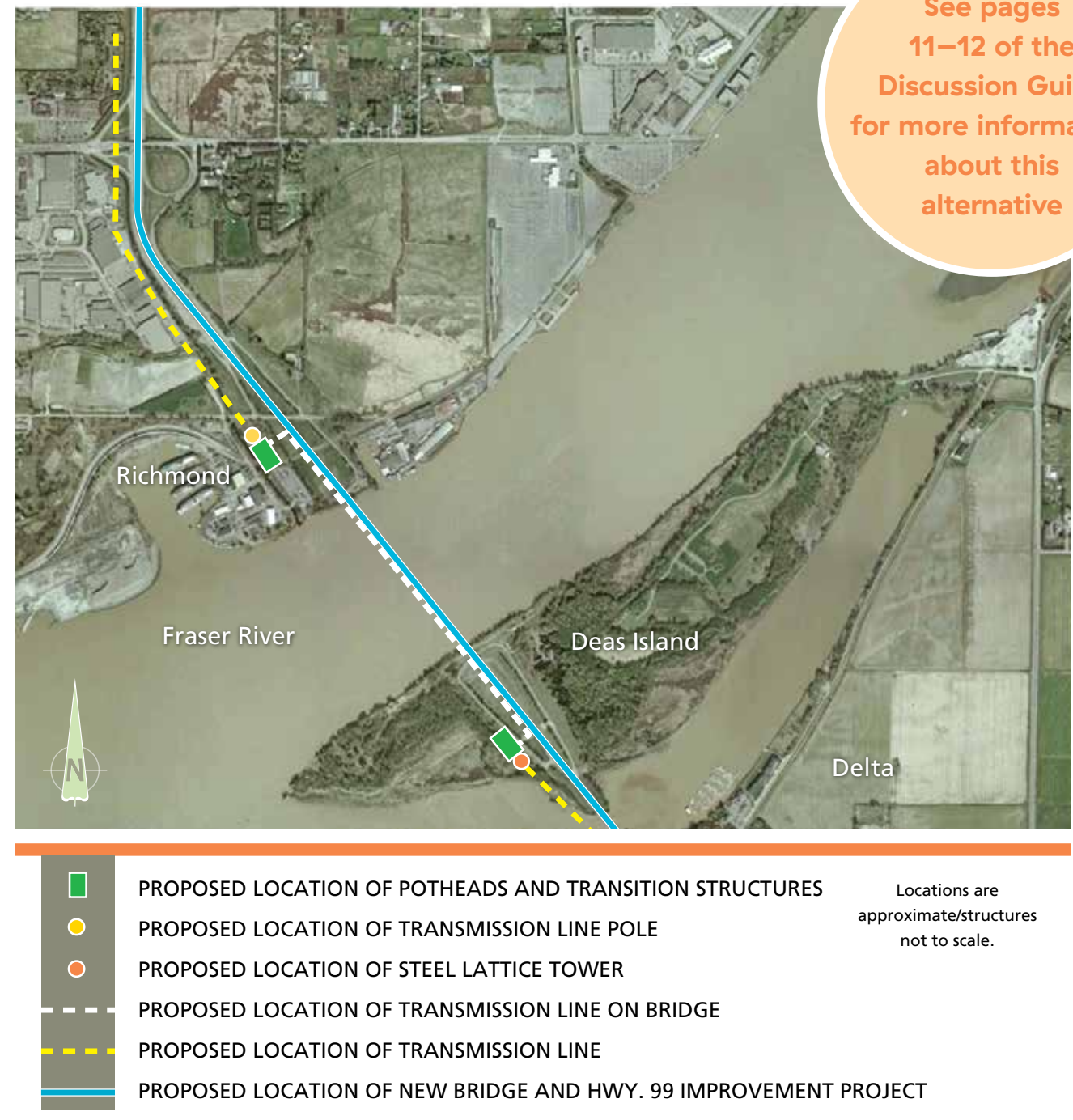
*BC Hydro pothead at English Bluff, Tsawwassen. Potheads for this relocation would likely be similar in appearance to this pothead.*

# Alternative 3: Transmission Line on the Bridge

This alternative would include installation of the transmission line on the new bridge. We've based our initial design of this alternative on the Ministry of Transportation and Infrastructure's conceptual bridge design, assuming a cable-stayed bridge with a box girder supporting the bridge deck, allowing for a transmission line to run through the bridge section.

This alternative requires a steel lattice tower, approximately 75 metres in height, on Deas Island and a pothead on either side of the Fraser River. The transmission cables would run from the ground in vertical shafts up the bridge, on either end of the bridge, and through a box girder within the main bridge deck.

See pages  
11–12 of the  
Discussion Guide  
for more information  
about this  
alternative





# Relocation of existing transmission line and poles along Highway 99 in Richmond and Delta

The following elements are consistent for all three alternatives. Note that final locations will be determined based on discussions with the Ministry of Transportation and Infrastructure.

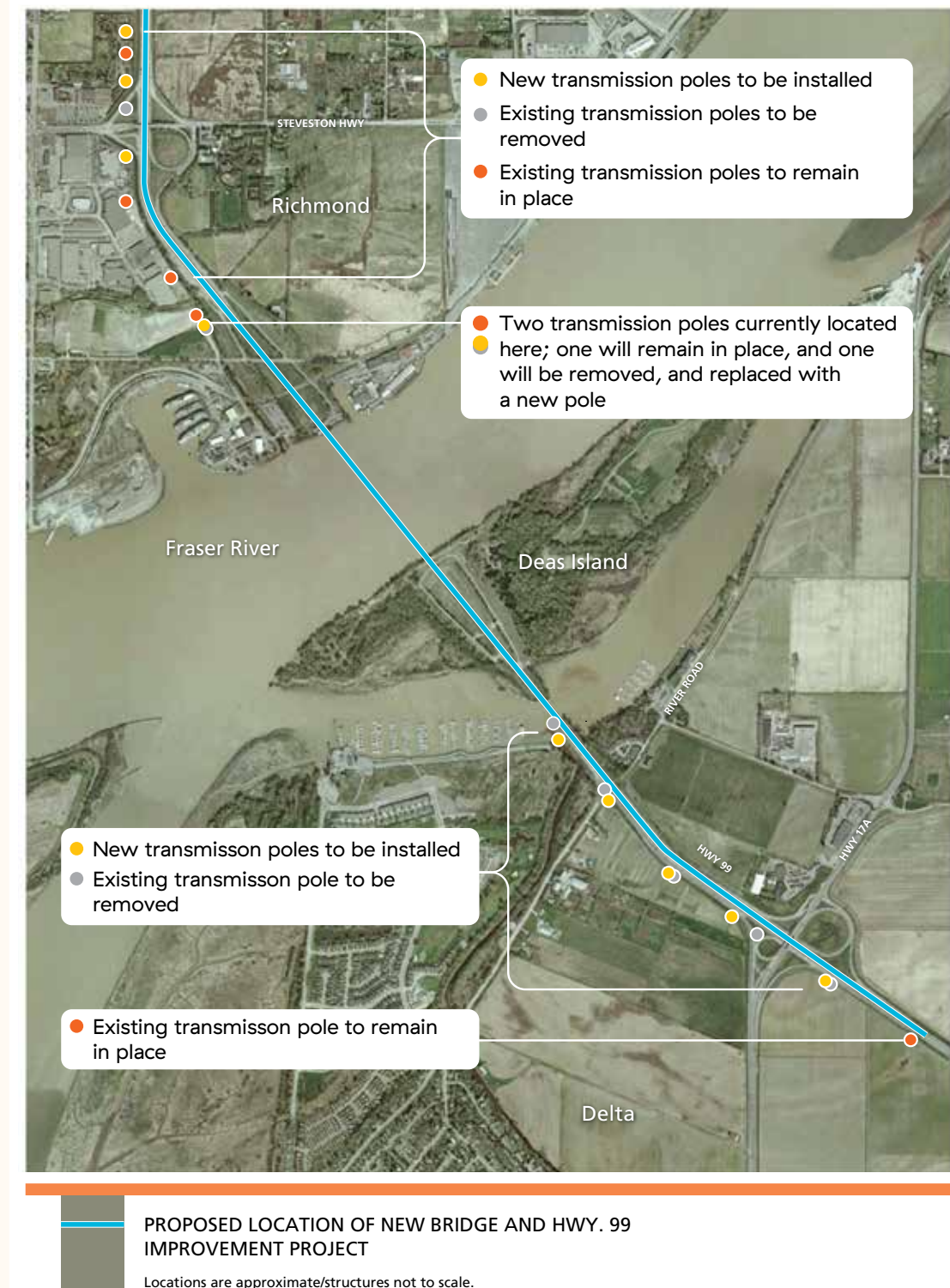
## RICHMOND

The overhead transmission line and poles along Highway 99 from the Fraser River to Steveston Highway need to be moved.

## DELTA

The overhead transmission line and poles along Highway 99 between River Road and east of the Highway 17A Interchange need to be moved.

The relocation in Delta and Richmond can be done mostly within existing provincial highway and BC Hydro rights-of-way, allowing for highway widening and interchange work.





# We'd like your input

Please complete the Feedback Form in the Discussion Guide, or online at [bchyro.com/gmtt](http://bchyro.com/gmtt) to share your thoughts on these three alternatives.

What we hear from you about these alternatives during consultation, along with input from other stakeholders, and our study results, will be considered as we assess the feasibility of the alternatives and determine a preferred alternative. Input from First Nations is being gathered in a parallel process and will also be considered as we determine a preferred alternative.

## HOW WILL BC HYDRO DETERMINE A PREFERRED ALTERNATIVE?

To evaluate alternatives, we will assess the social, economic and environmental aspects of each alternative.

### Key aspects include:

- Safety
- System reliability
- Environmental impacts
- First Nations effects and input
- Stakeholder effects and input
- Constructability and maintenance of alternatives
- Visual impacts
- Property requirements and impacts
- Cost to the ratepayer
- Schedule

# What's next?

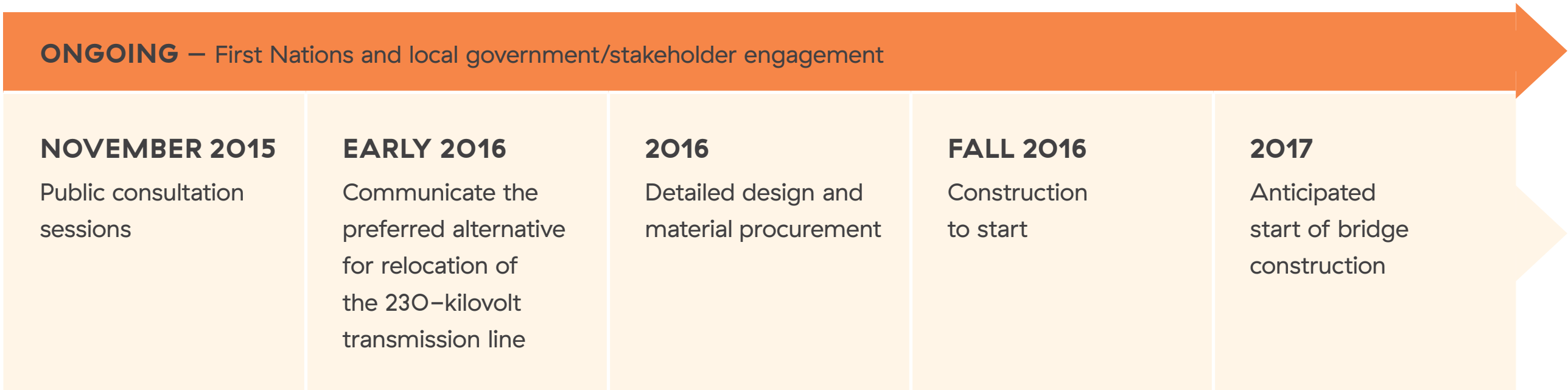
Once the consultation period is complete, we will evaluate alternatives by assessing the social, economic and environmental aspects of each alternative to determine a preferred alternative.

We plan to share that decision in early 2016.

We'll continue to provide information and engage with you throughout this relocation project, through email and our website: [bchydro.com/gmtt](http://bchydro.com/gmtt).

If you'd like to be added to our email update list, please call 604.623.4472 or email: [stakeholderengagement@bchydro.com](mailto:stakeholderengagement@bchydro.com).

## Milestones\*



\* This schedule is subject to change.