

# WELCOME

## PROJECT DEFINITION CONSULTATION

### SEPTEMBER 10 – OCTOBER 19, 2012

#### WE WANT TO HEAR FROM YOU

Project Definition Consultation, Fall 2012 takes place **September 10 through October 19, 2012**. Consultation materials are available on the Site C website ([www.bchydro.com/sitec](http://www.bchydro.com/sitec)).

You can provide feedback and learn more by:

- Attending open houses or stakeholder meetings
- Providing feedback online: [www.bchydro.com/sitec](http://www.bchydro.com/sitec)
- Writing a submission to: [sitec@bchydro.com](mailto:sitec@bchydro.com) or P.O. Box 2218, Vancouver, B.C. V6B 3W2
- Visiting the Site C project website: [www.bchydro.com/sitec](http://www.bchydro.com/sitec)
- Visiting the Community Consultation Offices:
  - 9948 100th Avenue, Fort St. John
  - The Pearkes Centre, 10801 Dudley Street, Hudson’s Hope
- Calling toll-free: 1 877 217 0777
- Faxing: 604 695 5290

#### PROJECT DEFINITION CONSULTATION, FALL 2012 – MEETING CALENDAR\*

COMMUNITY	EVENT	DATE: 2012	TIME	LOCATION
Fort St. John	Stakeholder Meeting*	Mon, Sept 10	5:00 p.m. – 7:00 p.m.	Quality Inn Northern Grand
Fort St. John	Stakeholder Meeting*	Tues, Sept 11	1:00 p.m. – 3:00 p.m.	Quality Inn Northern Grand
Fort St. John	Open House	Tues, Sept 11	6:00 p.m. – 9:00 p.m.	Quality Inn Northern Grand
Hudson’s Hope	Stakeholder Meeting*	Wed, Sept 12	4:00 p.m. – 6:00 p.m.	Hudson’s Hope Community Hall
Hudson’s Hope	Open House	Wed, Sept 12	6:00 p.m. – 8:00 p.m.	Hudson’s Hope Community Hall
Dawson Creek	Stakeholder Meeting*	Thur, Sept 13	2:00 p.m. – 4:00 p.m.	Best Western Dawson Creek
Dawson Creek	Open House	Thur, Sept 13	6:00 p.m. – 9:00 p.m.	Best Western Dawson Creek
Taylor	Stakeholder Meeting*	Fri, Sept 14	1:00 p.m. – 3:00 p.m.	Taylor Community Hall
Tumbler Ridge	Stakeholder Meeting*	Mon, Sept 17	2:00 p.m. – 4:00 p.m.	Tumbler Ridge Community Centre
Chetwynd	Stakeholder Meeting*	Tues, Sept 18	4:00 p.m. – 6:00 p.m.	Pomeroy Inn & Suites
Chetwynd	Open House	Tues, Sept 18	6:00 p.m. – 8:00 p.m.	Pomeroy Inn & Suites
Mackenzie	Stakeholder Meeting*	Wed, Sept 19	2:00 p.m. – 4:00 p.m.	Mackenzie Recreation Centre
Prince George	Stakeholder Meeting*	Thur, Sept 20	9:00 a.m. – 11:00 a.m.	Prince George Ramada

\*Please check [www.bchydro.com/sitec](http://www.bchydro.com/sitec) for any potential revisions to this schedule.  
To register for a stakeholder meeting, please email [sitec@bchydro.com](mailto:sitec@bchydro.com) or call 1 877 217 0777

Please submit your feedback by the deadline of OCTOBER 19, 2012

# PROJECT DEFINITION CONSULTATION

## SEPTEMBER 10 – OCTOBER 19, 2012

### PURPOSE

Project Definition Consultation, Fall 2012, is designed to consult the public, stakeholders and communities about the following topics:

- Worker Accommodation
- Transportation
- Clearing
- Agriculture

BC Hydro has been conducting several streams of consultation since 2007. These BC Hydro-led consultations are separate from the consultation opportunities led by the environmental assessment agencies.

### HOW INPUT WILL BE USED

Public and stakeholder input received will help inform project plans, project design and mitigation plans as BC Hydro prepares the Environmental Impact Statement.

A *Consultation Summary Report* will be posted on the Site C website summarizing feedback from this consultation.

BC Hydro will review the feedback provided and this feedback will be considered, along with technical and financial information, in refining project designs and plans, including mitigation plans. A *Consideration Memo* will document how consultation input was addressed in project plans.

### ENVIRONMENTAL AND REGULATORY REVIEW

The Site C Clean Energy Project (Site C) is currently in the environmental and regulatory review stage, which includes a cooperative federal and provincial environmental assessment process, including a joint review panel.

As part of the environmental review process, BC Hydro will file an Environmental Impact Statement (EIS) in early 2013.

More information about the environmental assessment process for Site C is available at:

- British Columbia Environmental Assessment Office (BCEAO): [www.eao.gov.bc.ca](http://www.eao.gov.bc.ca)
- Canadian Environmental Assessment Agency (CEA Agency): [www.ceaa-acee.gc.ca](http://www.ceaa-acee.gc.ca)



# SITE C CLEAN ENERGY PROJECT

The Site C Clean Energy Project (Site C) is a proposed third dam and hydroelectric generating station on the Peace River in northeast B.C. It would be located approximately seven kilometres southwest of Fort St. John, just downstream of the Moberly River. BC Hydro is proposing to build Site C as part of its overall program to invest in and renew the province’s electricity system.

Subject to approvals, Site C would be a source of clean, reliable and cost-effective electricity in B.C. for more than 100 years. Site C would be a publicly owned asset.

## DAM

Type: Earthfill dam  
Height: 60 metres above riverbed  
Length: 1,050 metres  
Energy: 5,100 GWh/yr.  
Capacity: Up to 1,100 MW

## RESERVOIR

Total Reservoir Surface Area:  
Approximately 9,330 hectares  
Total Flooded Land:  
Approximately 5,550 hectares  
Length: 83 kilometres  
Width: 2-3 times the current river (on average)





# WORKER ACCOMMODATION

## CONSULTATION TOPIC

Refer to pages 4–9 in the discussion guide

### BC HYDRO'S PRELIMINARY WORKER ACCOMMODATION PLAN

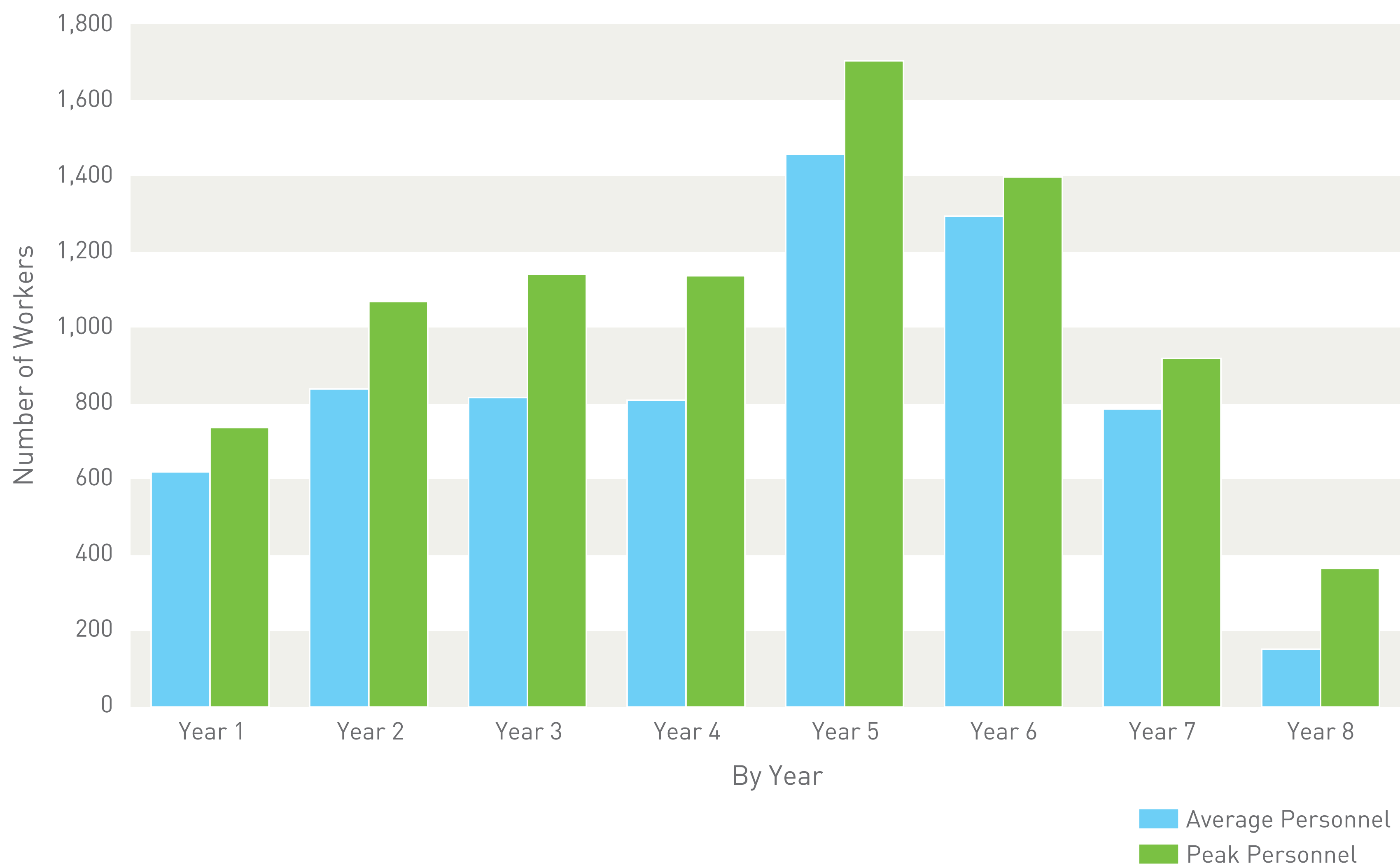
BC Hydro is developing a worker accommodation plan for Site C that will describe accommodation requirements for short-term and long-term workers, consider community interests, and be adjustable and flexible to meet construction needs.

The preliminary plan includes the following components:

- 1. Workers living locally
- 2. Workforce camp accommodation for core construction activities
- 3. Smaller regional workforce camps for other project activities
- 4. Accommodation support

### SITE C CONSTRUCTION WORKFORCE

BC Hydro estimates it will generate approximately 7,000 person-years of direct employment during Site C's seven-year construction period. The estimated average annual workforce would be approximately 800 workers per year for project construction, with seasonal peaks in Years 5 and 6 of up to 1,700 workers.



Site C has a seven-year construction period, followed by Year 8 final commissioning, site reclamation and demobilization. The workforce estimates shown are based on preliminary construction planning and assumptions for planning. The actual workforce numbers and timing will be based on final design and procurement, including contractor plans, methods and construction considerations. Adjustments will be made to the worker accommodation plan based on those factors.

# WORKER ACCOMMODATION

## CONSULTATION TOPIC

Refer to pages 4–9 in the discussion guide

### 1. WORKERS LIVING LOCALLY

BC Hydro anticipates that the direct construction workforce will include local residents, regional commuters and out-of-town workers interested in relocating to the area. BC Hydro is planning for approximately 15 per cent of workers to live in local communities and commute daily to the work site.

#### BUILDING NEW HOUSING

BC Hydro is currently working in cooperation with BC Housing towards building approximately 40 new housing units for use by BC Hydro's workforce and their families during construction, plus 10 new affordable housing units. Other projects may be considered.

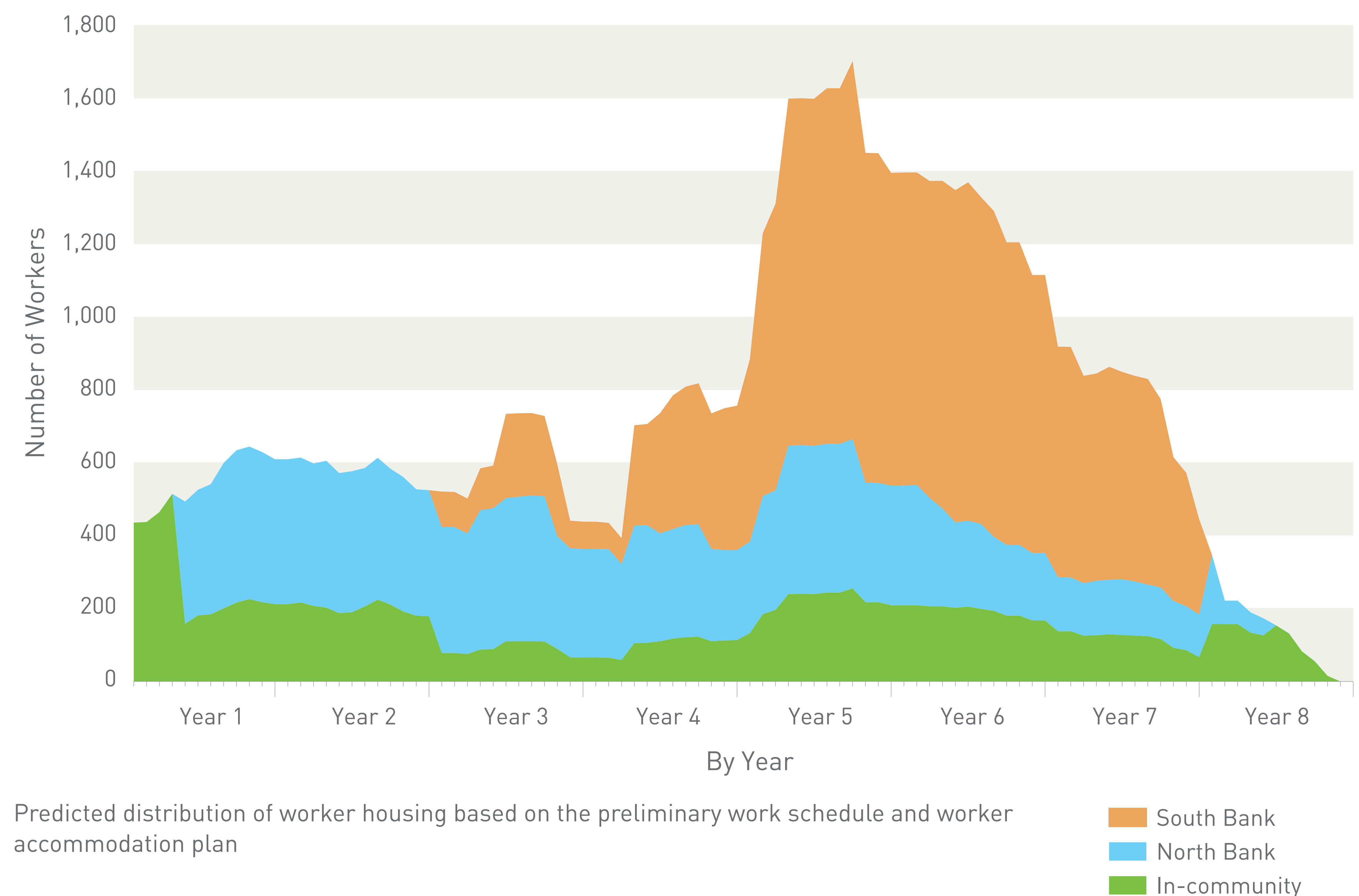
After construction of the Site C project, all of the housing units would be available as affordable housing in the community.

#### DEVELOPMENT PRIORITIES FOR NEW HOUSING

In committing to build new housing, several objectives are under consideration:

- Affordability
- Sustainability
- Location

### WORKER ACCOMMODATION BY YEAR





# WORKER ACCOMMODATION

## CONSULTATION TOPIC

### 2. WORKFORCE CAMP ACCOMMODATIONS FOR SITE C DAM SITE

Workforce camp facilities are proposed for both sides of the Peace River to provide the safest and most efficient work site access.

Infrastructure to support the workforce camps, such as water and sewer connections, would be built to be able to meet all workforce requirements. However, the actual number of units built would be scaled up or down based on the construction requirements and available labour.

#### NORTH BANK CAMP (Throughout construction period)

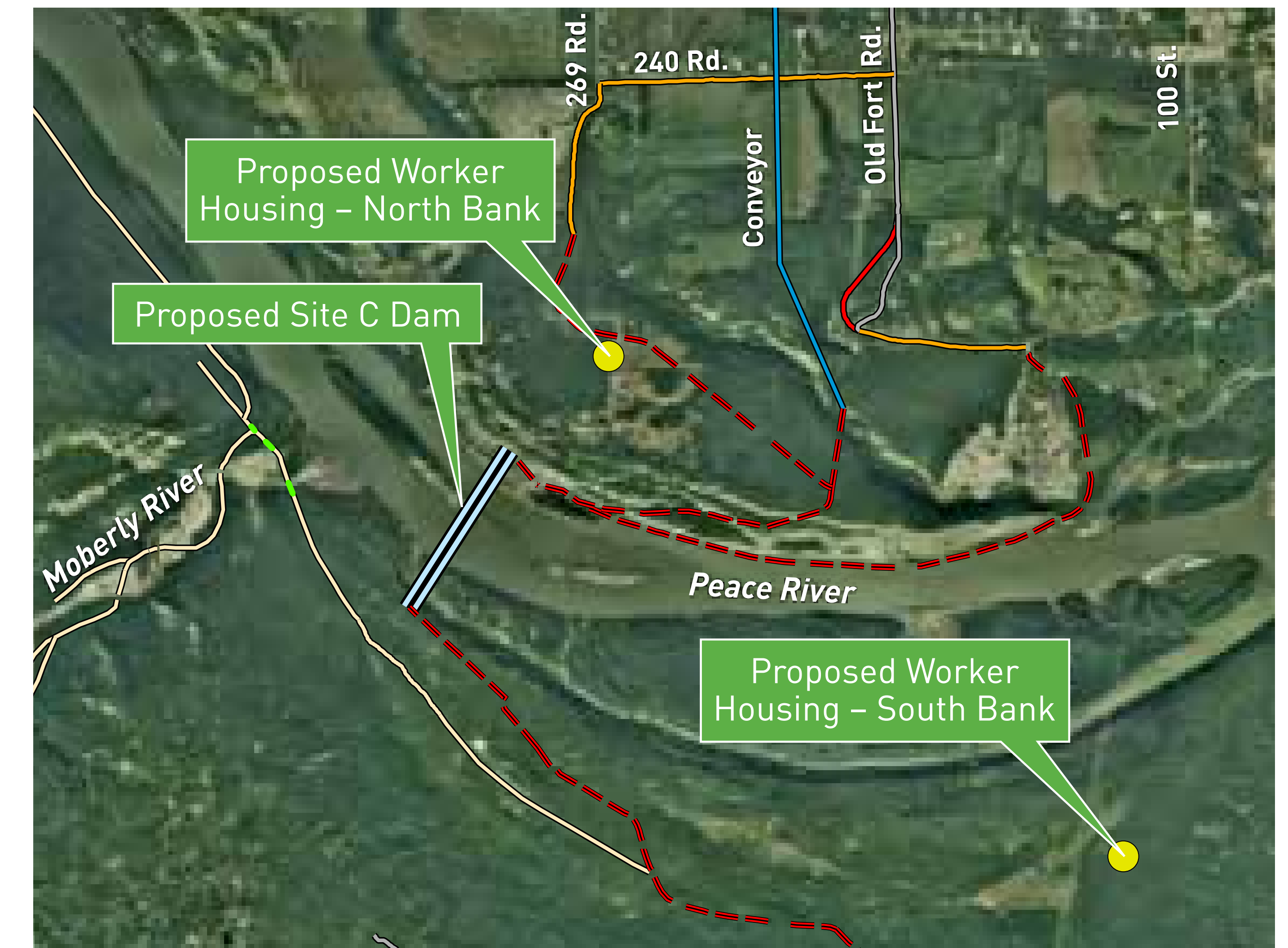
The north bank facility would be built first and would operate throughout the construction period, with room for approximately 500 workers. This site would be located on BC Hydro-owned land.

#### SOUTH BANK CAMP (Approximately Years 2–7)

The south bank facility would be built to be operational in Year 2. The camp would be connected by dam site construction roads to the north bank and Fort St. John, and to the south via the Jackfish Lake Road. This camp would start with a small number of beds, and then scale up to meet a peak of up to 1,200 workers in Years 5 and 6.



Artist's conceptual rendering of worker accommodation. This conceptual rendering shows modular units for approximately 500 workers, with a front lobby and common areas, transportation/shuttle loop, parking area, and rear dormitory wings accessible from a central interior corridor.



Proposed locations of the workforce camp facilities at the dam site, north bank and south bank



# WORKER ACCOMMODATION

## CONSULTATION TOPIC

Refer to pages 4–9 in  
the discussion guide

### 3. SMALLER REGIONAL WORKFORCE CAMPS – REGIONAL LOCATIONS AND RV PARKS

About 10 per cent of the construction workforce would be involved in construction at other regional locations such as the realignment of Highway 29 or the construction of the Hudson's Hope berm. These work sites would be active for shorter seasonal periods. The size and duration of a camp or other accommodation options will be determined by contractors and in consideration of local housing options.

BC Hydro is also interested in commissioning dedicated long-stay RV spaces, likely within the Fort St. John, Hudson's Hope and Taylor areas, to provide additional worker housing options. BC Hydro would plan for additional RV site capacity by working with the private sector or local government to develop or expand RV parks in compliance with local zoning.

### 4. ACCOMMODATION SUPPORT SERVICES

As part of the worker accommodation plan, BC Hydro will develop an accommodation support services program, which may comprise the following:

- Booking and planning for temporary in-community accommodations
- Supporting workers in becoming local residents
- Construction phase monitoring of project housing requirements
- Expanding and adapting camp space as required to meet real-time housing needs
- Maintaining an annual worker accommodation plan
- Communicating the worker plan to local governments, agencies and the public

*Please see page 36 in the feedback form to answer questions related to worker accommodation.*



# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 10–24 in  
the discussion guide

### UPGRADED AND NEW ROADS

As a component of the Site C Clean Energy Project, BC Hydro will upgrade existing roads and construct both temporary and permanent new roads.

#### HIGHWAY 29 REALIGNMENTS:

- The creation of the Site C reservoir would require the realignment of the following six segments of Highway 29 over a total distance of up to 30 kilometres:
  - Lynx Creek
  - Dry Creek
  - Farrell Creek
  - Farrell Creek East
  - Halfway River
  - Bear Flat/Cache Creek

#### PERMANENT UPGRADED ROADS:

- **D.A. Thomas Road (Ferry Landing Road)** would be upgraded to accommodate truck traffic accessing the Hudson's Hope berm site
- **Old Fort Road (south of 240 Road)** a segment would be upgraded
- **240 Road (between Old Fort Road and 269 Road)** would be paved
- **269 Road (south of 240 Road)** approximately 300 metres of 269 Road would be upgraded
- **Jackfish Lake Road** gravel segments would be strengthened and resurfaced

#### UPGRADED ROADS FOR TEMPORARY USE BY THE PROJECT:

- **Access roads to construction material sources** at Portage Mountain and Del Rio Pit would be upgraded
- **Access roads for clearing** (approximately 84 kilometres) along the reservoir and construction sites may need to be upgraded

#### PERMANENT NEW ROADS:

- **Project Access Road:** BC Hydro is proposing to construct a new 34-kilometre dedicated road from where Jackfish Lake Road passes under the existing 138 kilovolt (kV) transmission line, to the Site C dam site. This road would generally be contained within the planned transmission corridor. Project Access Road would also be used for the construction of two new 500 kV transmission lines and future dam site and transmission line maintenance.  
Access to this road would be restricted to project traffic at all times during construction.
- **269 Road (south of 240 Road)** would be extended by approximately 600 metres to provide construction access to the dam site

#### TEMPORARY NEW ROADS:

- **All-season clearing roads** (approximately 23 kilometres) would be constructed along the reservoir and construction sites
- **Winter clearing roads** (approximately 113 kilometres) would be constructed
- **Temporary spans** would be used to access islands for clearing activities

An overview map showing these upgraded and new roads can be found on the next board.



# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 10–24 in  
the discussion guide

### UPGRADED AND NEW ROADS – OVERVIEW





### SITE C PROJECT – CONSTRUCTION PHASE TRAFFIC

The following construction-related activities would be anticipated to generate traffic:

- **Worker Transportation:** Construction workers living in local communities and in temporary worker accommodation camps would travel by road to construction sites.
- **Materials and Equipment Movement:** Materials and equipment required for construction would be transported from the following locations:
  - Wuthrich Quarry, 271 Road, north of Fort St. John
  - West Pine Quarry, Highway 97, west of Chetwynd
  - 85th Avenue Industrial Lands, immediately outside Fort St. John, where a conveyor belt system is proposed to move materials to the dam site, reducing trucks on the road

- **Clearing:** Clearing of the reservoir and construction areas would require logging trucks travelling between clearing areas and mills in the region. Overall, it is anticipated that Site C clearing activities would not add to the number of logging trucks in the region, as material cleared for Site C would be used by local mills or managed on-site.
- **Transmission Line Construction:** Construction of the transmission line on the south bank would require movement of construction workers, equipment and materials.
- **Highway 29 Realignment Construction:** Materials for construction of Highway 29 realignments would come from adjacent sites, Portage Mountain, Fort St. John or beyond.
- **Hudson's Hope Berm Construction:** Materials for construction of the Hudson's Hope Berm would come from Portage Mountain and locally on-site or from the Lynx Creek area, east of Hudson's Hope.

### MAPS AND TRAFFIC FORECAST GRAPHS

The maps and graphs on the following boards show average traffic volumes and types of traffic that are anticipated during construction of Site C.

Traffic forecasts shown are averages over a 10-hour work day and are based on a six-day work week. These forecasts are provided to show the order of magnitude of the increase in traffic as a result of Site C construction activities. Actual hours may be different depending on construction requirements, project schedule and contractor plans. Traffic volumes will be higher during the morning and evening workforce commutes.



### MITIGATION: CONSTRUCTION TRAFFIC CONTROL PLANS AND SAFETY

BC Hydro would implement construction communications and community relations activities to minimize traffic disruption and maximize predictability and safety for the travelling public and workers on the project.

Methods of communication could include such things as:

- Advertisements and public service announcements (local newspapers, local radio and websites)
- Email alerts
- Social media alerts
- Text message alerts
- Messages on portable, changeable signs

Each construction site would require a Construction Traffic Control Plan, which would outline traffic control measures at that site.

Generally, these would account for:

- Site-specific details such as maximum hourly traffic volume
- Best management practices
- Regional or municipal standards
- Ministry of Transportation and Infrastructure standards

*Please see page 37 in the feedback form to answer questions related to traffic communications.*



Highway 97 towards Fort St. John



# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 13–14 in the discussion guide

### HUDSON'S HOPE

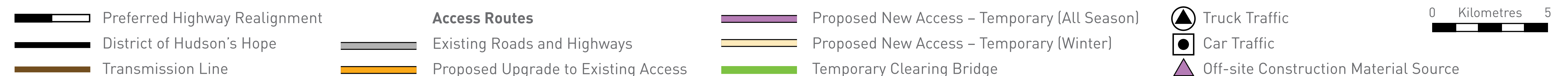
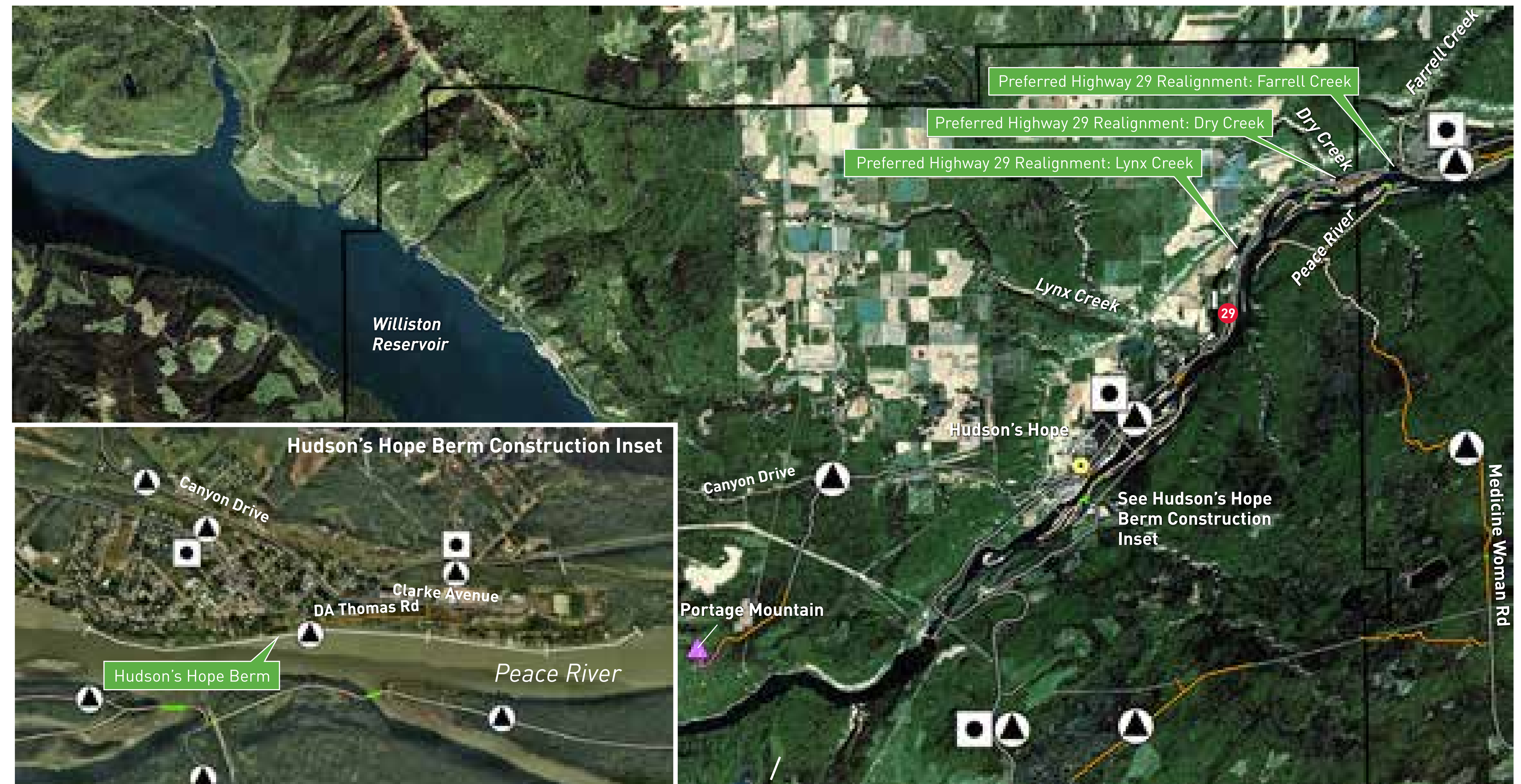
#### Project-related traffic activities within the District of Hudson's Hope:

- Construction of the Hudson's Hope Berm
- Construction of Highway 29 realignments
- Clearing of reservoir and Highway 29 realignment segments

#### Traffic Forecasts:

- In the peak year, the project would add an average of approximately 10 vehicles per hour – over the forecasted average regional traffic volume of about 70 vehicles per hour – along Canyon Drive
- Along Highway 29, the project would add approximately 10 vehicles per hour, over the forecast average regional traffic volume of 80 vehicles per hour

Average Traffic Volumes: Canyon Drive





# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 15–16 in the discussion guide

### HIGHWAY 29 NORTH (HUDSON’S HOPE TO FORT ST. JOHN)

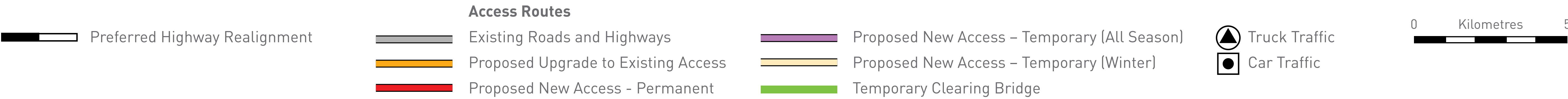
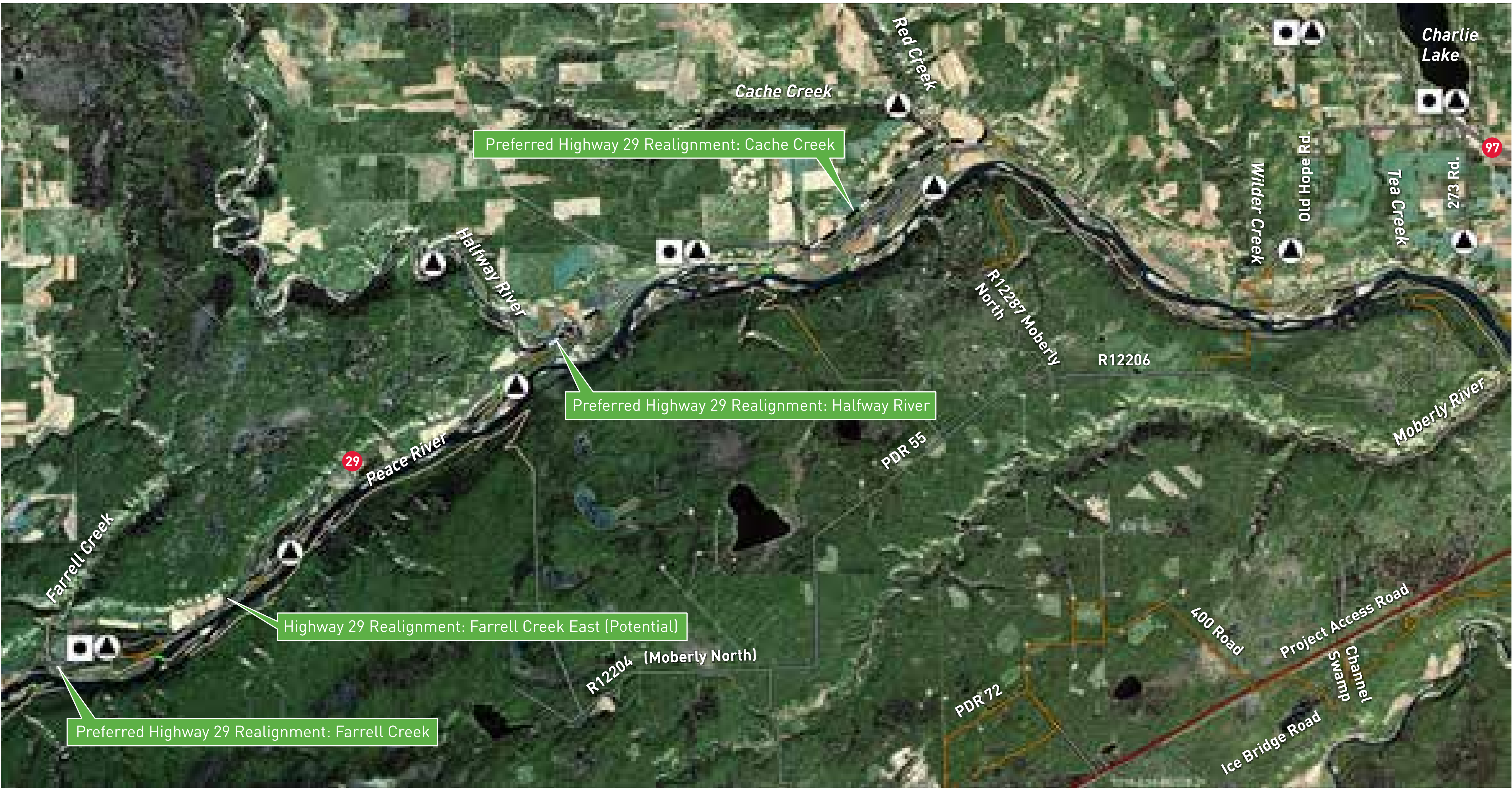
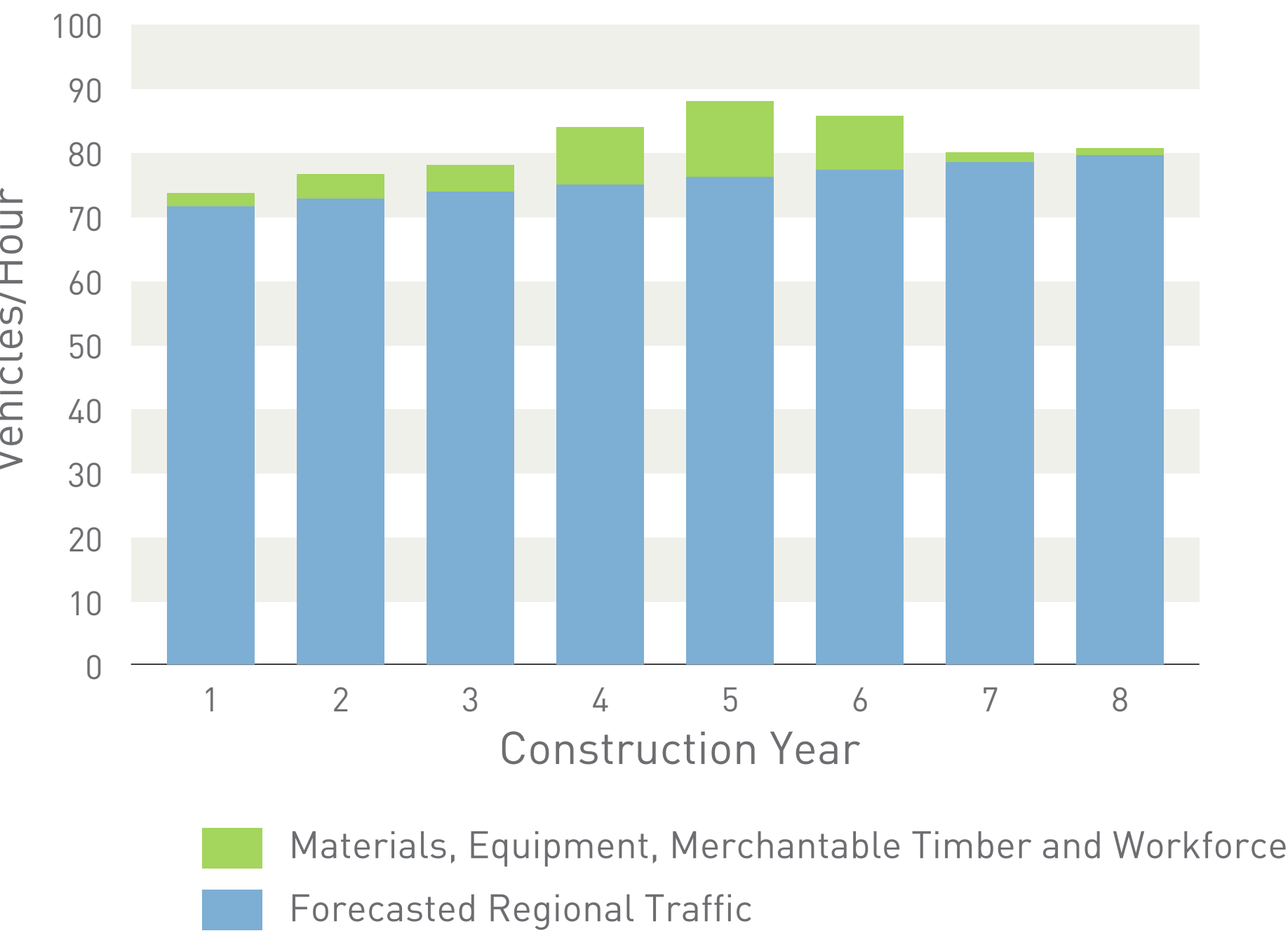
**Project-related traffic activities along Highway 29:**

- Construction of Highway 29 realignments
- Clearing of reservoir and Highway 29 realignment segments

**Traffic Forecasts:**

- In the peak year, the project would add an average of approximately 10 vehicles per hour – over the forecasted average regional traffic volume of about 80 vehicles per hour – along Highway 29

Average Traffic Volumes: Highway 29 North – Hudson’s Hope to Fort St. John





# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 17–18 in the discussion guide

### HIGHWAY 97 NORTH (FORT ST. JOHN TO TAYLOR AND DAWSON CREEK)

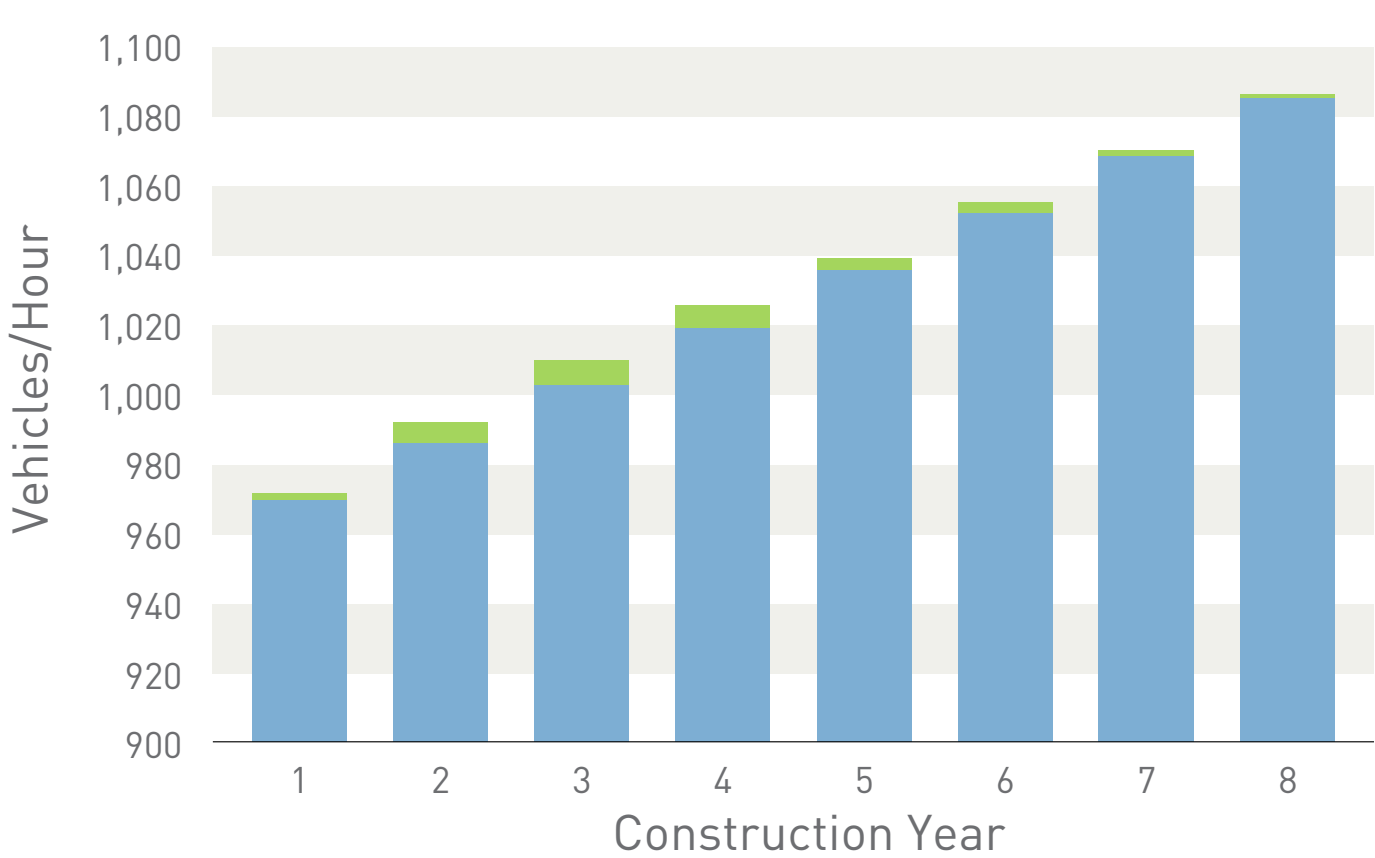
#### Project-related traffic activities along Highway 97 North:

- Local commuting workforce
- Movement of dam construction materials from Wuthrich Quarry
- Clearing of reservoir and dam site area
- Materials and equipment movement from southeast B.C. and Alberta

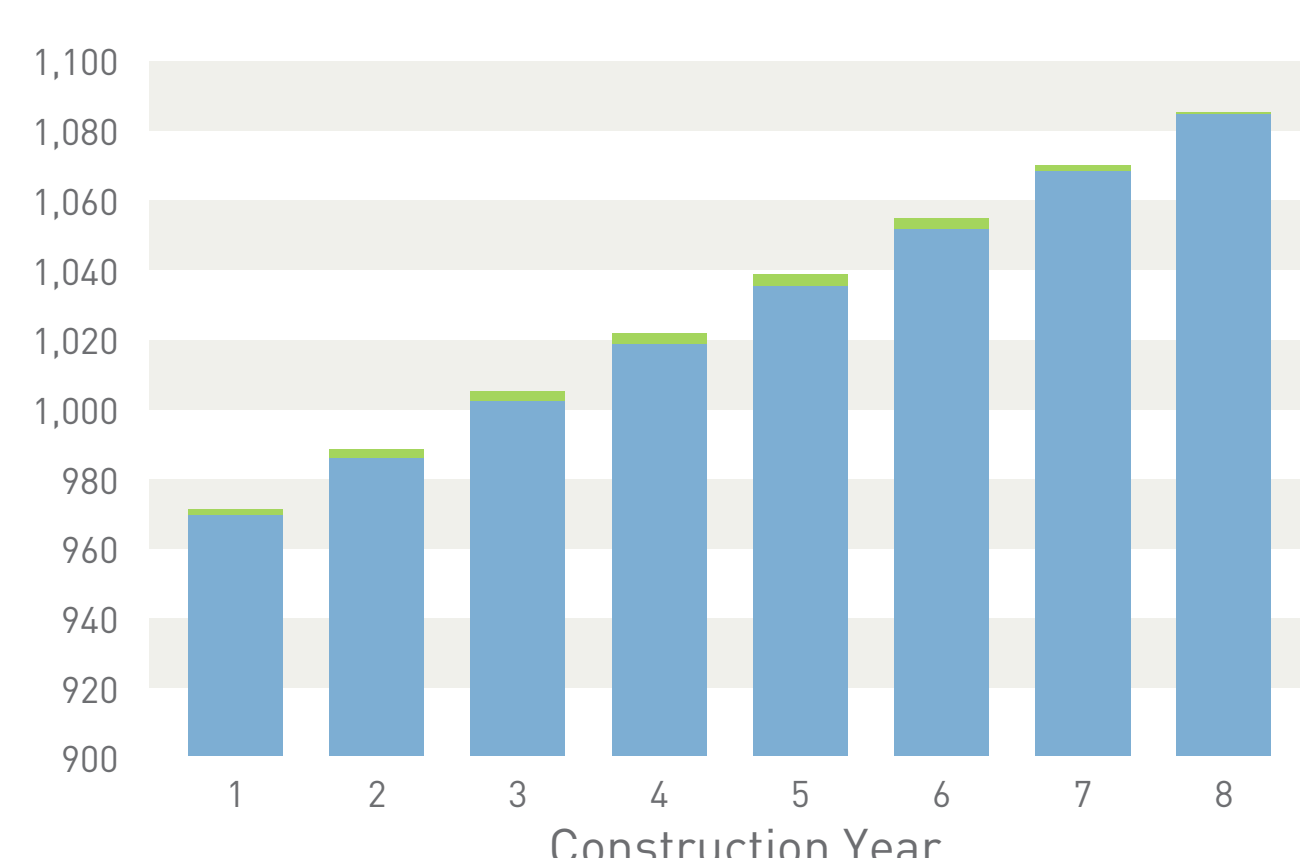
#### Traffic Forecasts:

- In the peak years, the project would add an average of approximately 10 vehicles per hour – over the forecasted average regional traffic volume of about 1,000 vehicles per hour – along Highway 97 between Charlie Lake and Old Fort Road

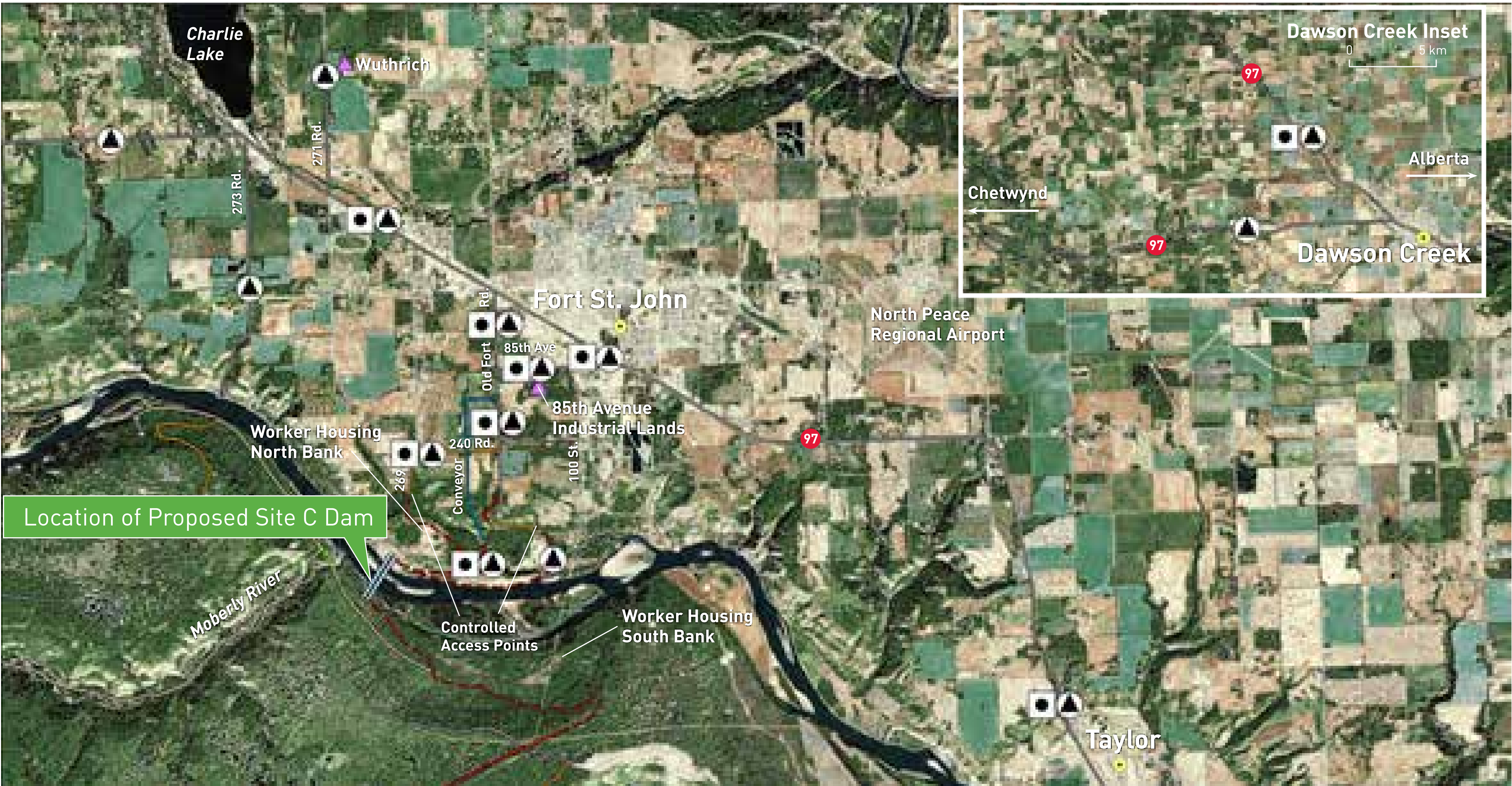
Average Traffic Volumes: Highway 97 North, Charlie Lake to Old Fort Road



Average Traffic Volumes: Highway 97 North, Fort St. John to Taylor and Dawson Creek



Materials, Equipment, Merchantable Timber and Workforce  
Forecasted Regional Traffic





# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 18–21 in the discussion guide

### FORT ST. JOHN TO DAM SITE (OLD FORT ROAD, 240 ROAD, 269 ROAD AND 85TH AVENUE)

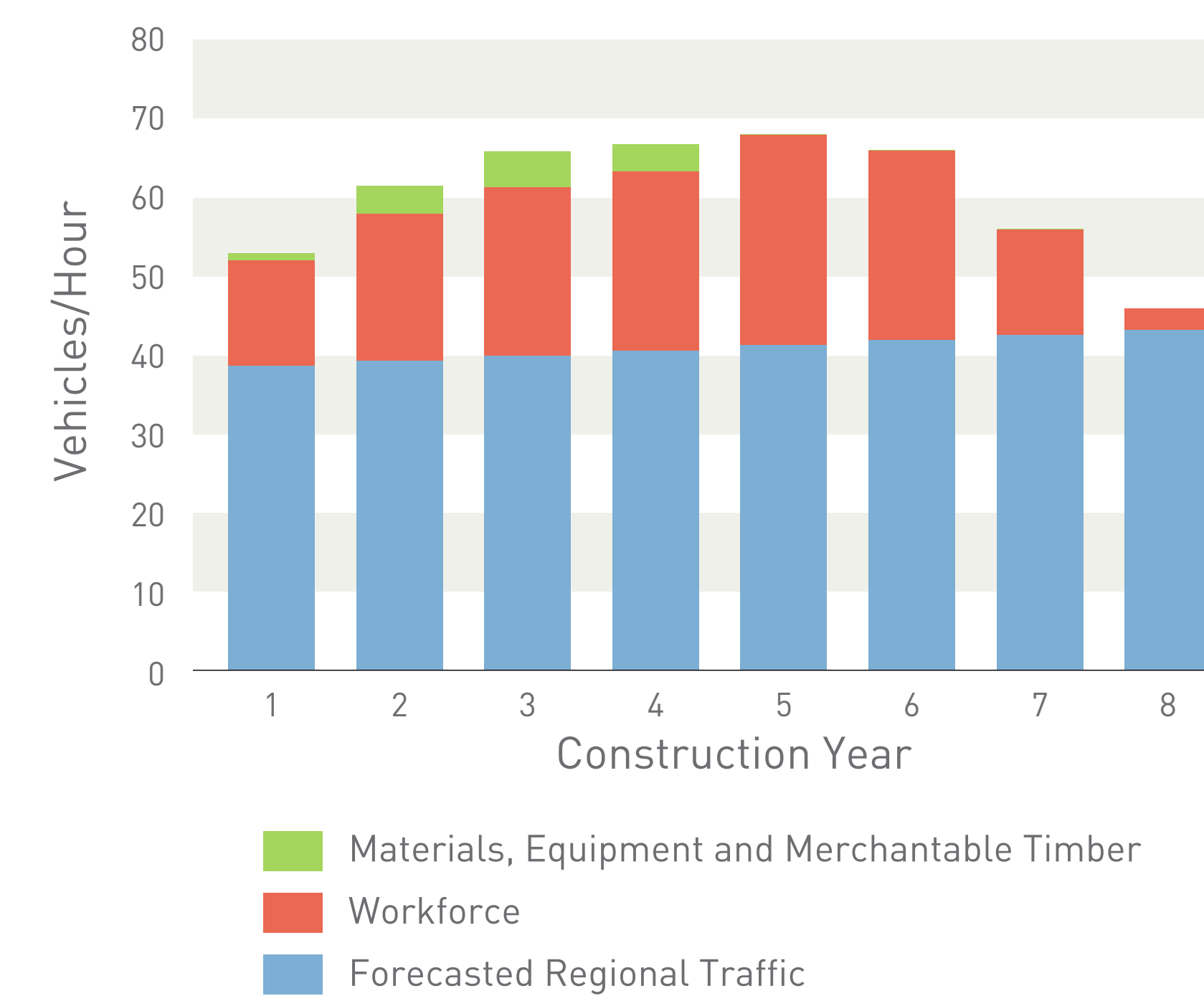
#### Project-related traffic activities in this area:

- Movement of dam construction materials from Wuthrich Quarry
- Movement of materials and equipment
- Clearing of reservoir, dam site and construction areas
- Local commuting workforce
- Workers living in workforce camps

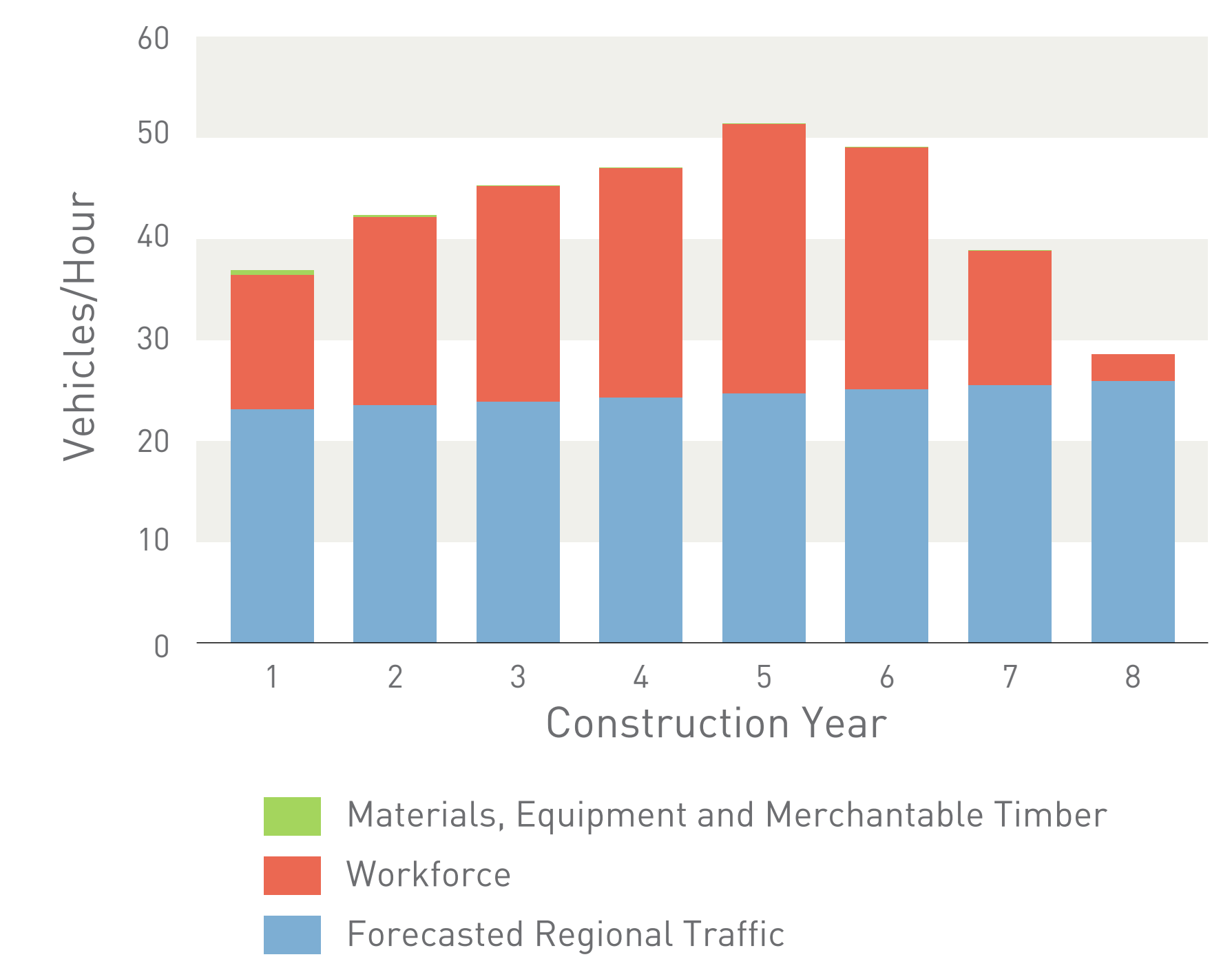
#### Traffic Forecasts

- In the peak year of construction in this area (Year 5), the project would add an average of approximately 30 vehicles per hour along Old Fort Road, 240 Road and 269 Road. This is an increase over the average forecasted regional traffic of about 40 vehicles per hour on Old Fort Road, 20 vehicles per hour on 240 Road and about 25 vehicles per hour on 269 Road.
- The project would increase truck traffic on roads that are currently predominantly used by commuters.
- During Year 5, the project would add an average of approximately 15 vehicles per hour over the forecast of about 85 vehicles per hour along 85th Avenue west of 100th Street.

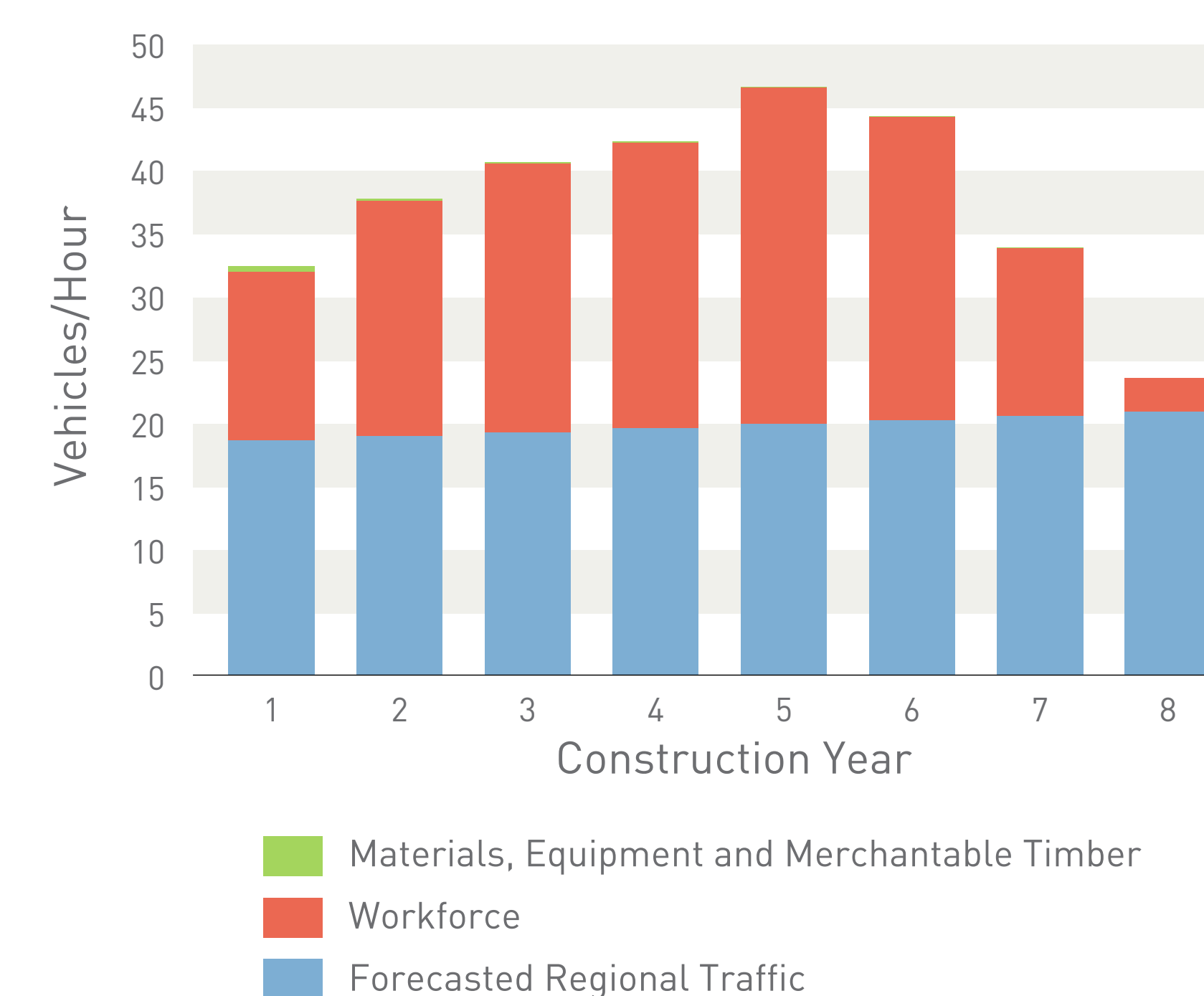
Average Traffic Volumes: Old Fort Road North of 240 Road



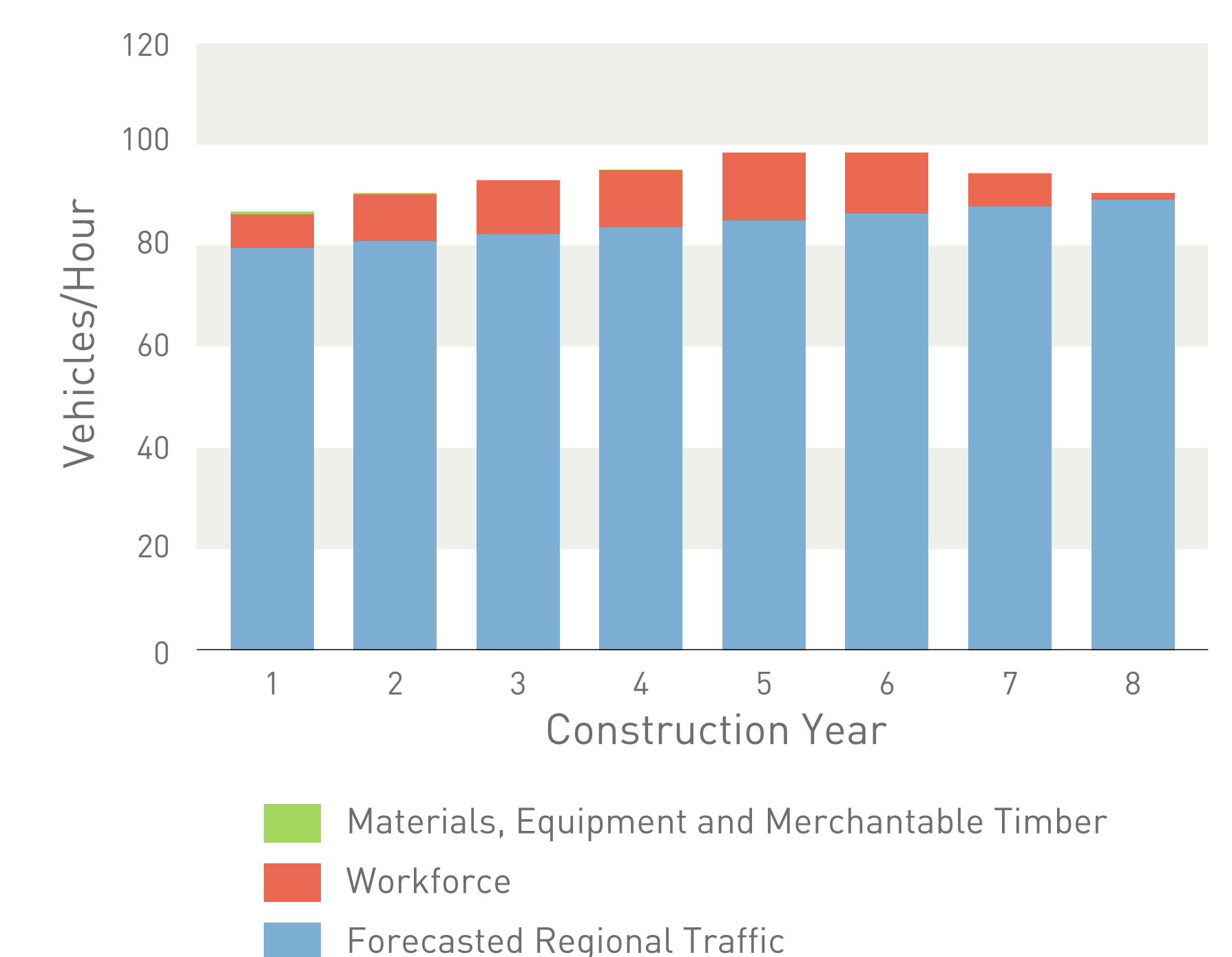
Average Traffic Volumes: 269 Road South of 240 Road



Average Traffic Volumes: 240 Road West of Old Fort Road



Average Traffic Volumes: 85th Avenue, between Old Fort Road and 100th Street





# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 18–21 in  
the discussion guide

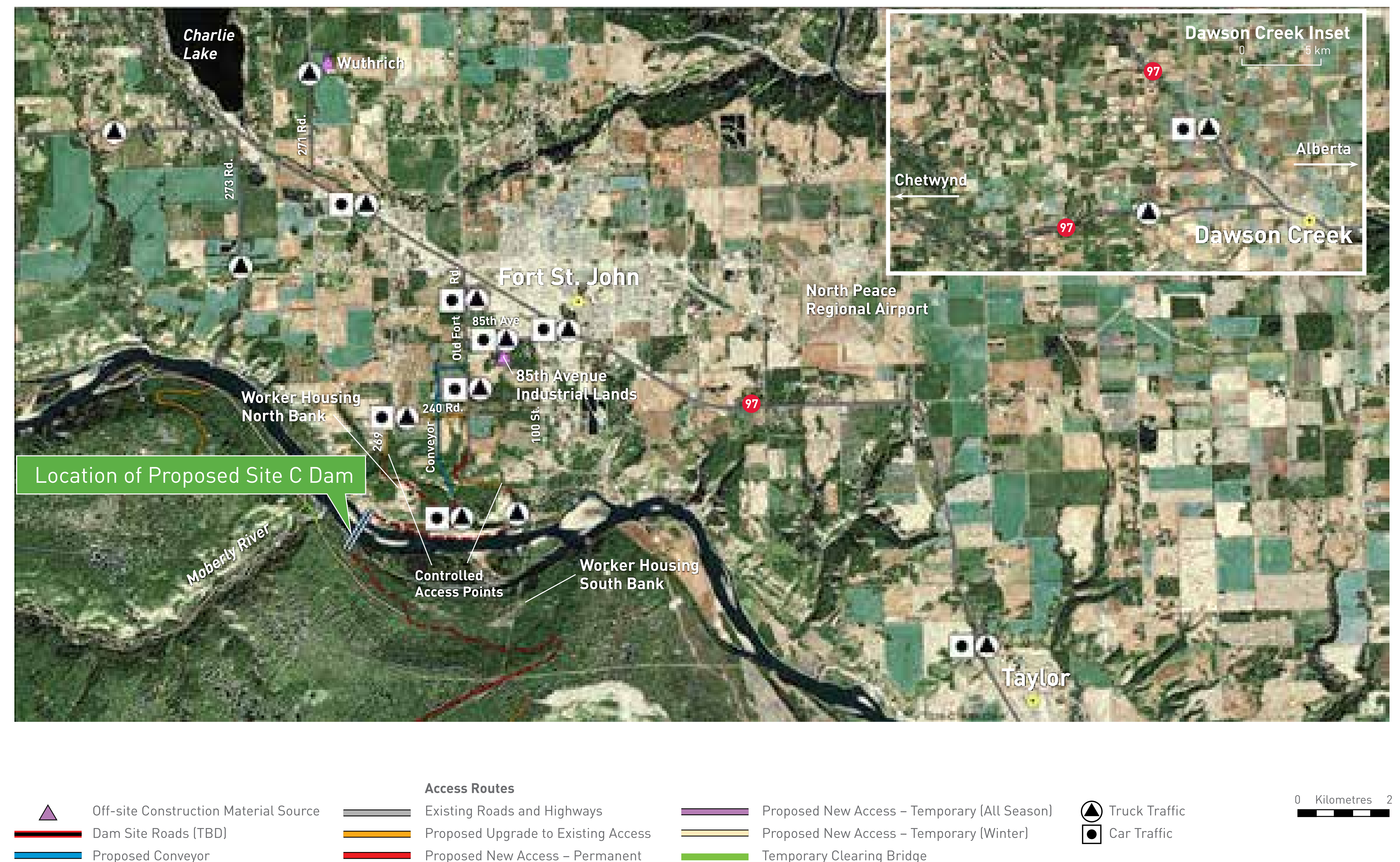
### FORT ST. JOHN TO DAM SITE (OLD FORT ROAD, 240 ROAD, 269 ROAD AND 85TH AVENUE)

#### Mitigation

In addition to Construction Traffic Control Plans, potential additional mitigation for managing traffic from Fort St. John to the Site C dam site would include the following:

- Upgrades to Old Fort Road, 240 Road and 269 Road (south of 240 Road) to improve safety and reduce dust.
- BC Hydro is currently studying the potential for commercial and recreational facilities for workers in the south bank camp, to reduce traffic volume effects while still allowing for workers to travel to regional communities to create local economic benefits.
- BC Hydro has initiated discussions with School District 60 regarding enhancements to school bus pickup locations to ensure safe pickup and drop-off.
- BC Hydro has initiated conversations with Canada Post regarding increasing the size of pullouts for community mailboxes. This would improve safety for residents picking up their mail as well as for Canada Post workers delivering mail.

Further mitigation options may also be developed as project planning continues and with feedback from the community.





# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 22–23 in the discussion guide

### HIGHWAY 97 SOUTH (CHETWYND)

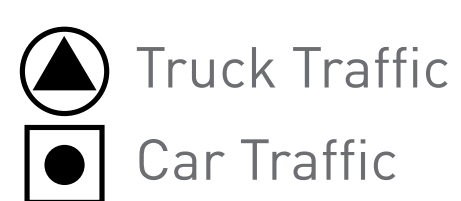
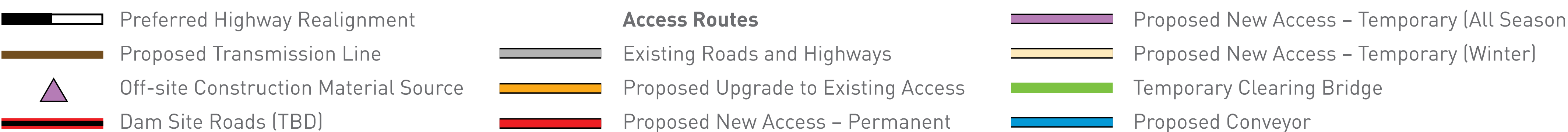
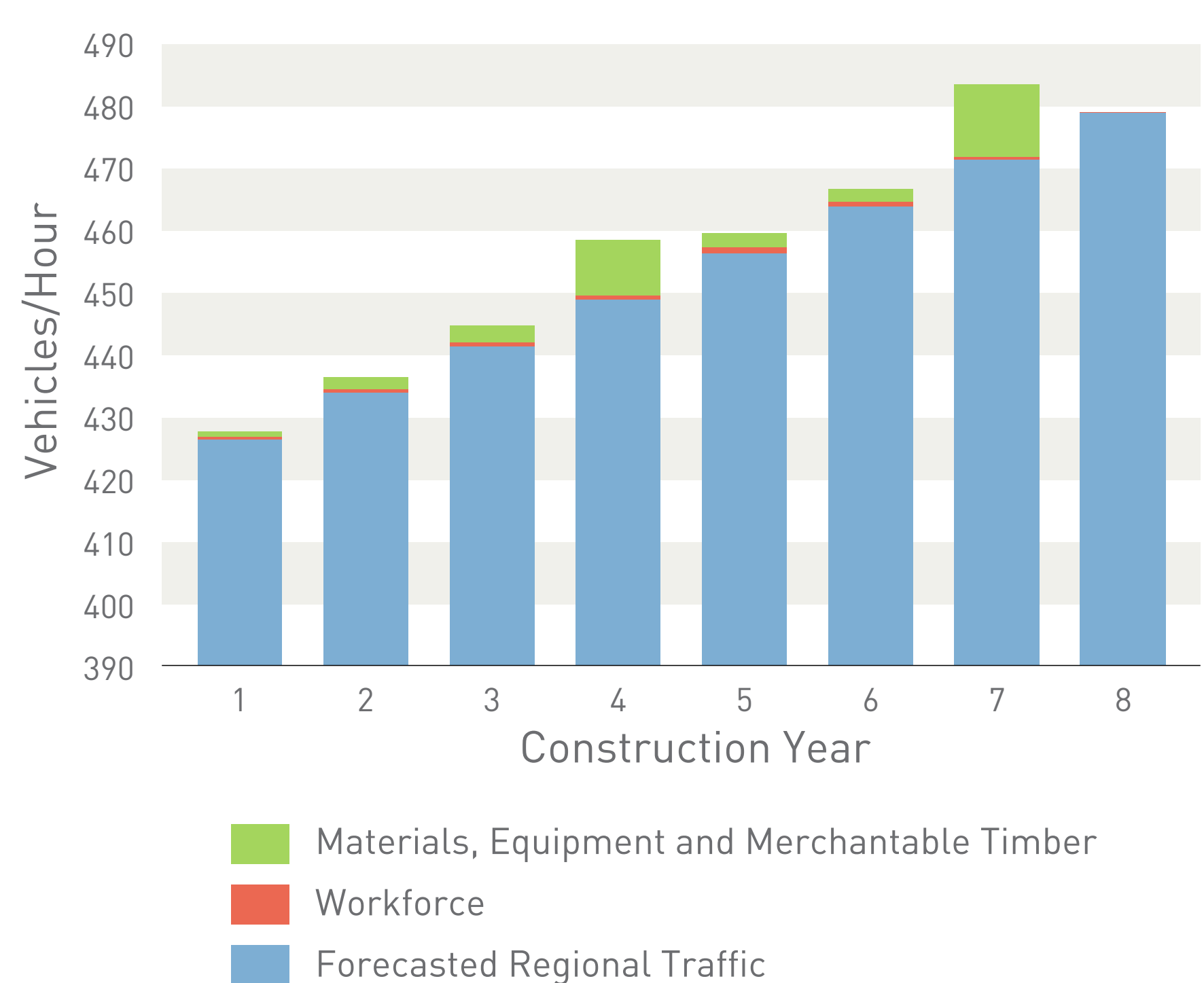
#### Project-related traffic activities along Highway 97 South:

- Local commuting workforce
- Movement of dam construction materials from West Pine Quarry
- Materials and equipment movement
- Materials and equipment movement from southeast B.C. and Alberta

#### Traffic Forecasts:

- In the peak year, the project would add an average of approximately 10 vehicles per hour – over the forecasted average regional traffic volume of about 460 vehicles per hour – along Highway 97 South to Chetwynd

Average Traffic Volumes: Highway 97 South to Chetwynd



0 Kilometres 10



# TRANSPORTATION

## CONSULTATION TOPIC

Refer to pages 23–24 in the discussion guide

### JACKFISH LAKE ROAD TO DAM SITE (JACKFISH LAKE ROAD AND PROJECT ACCESS ROAD)

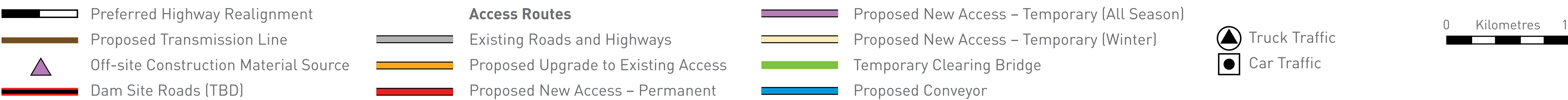
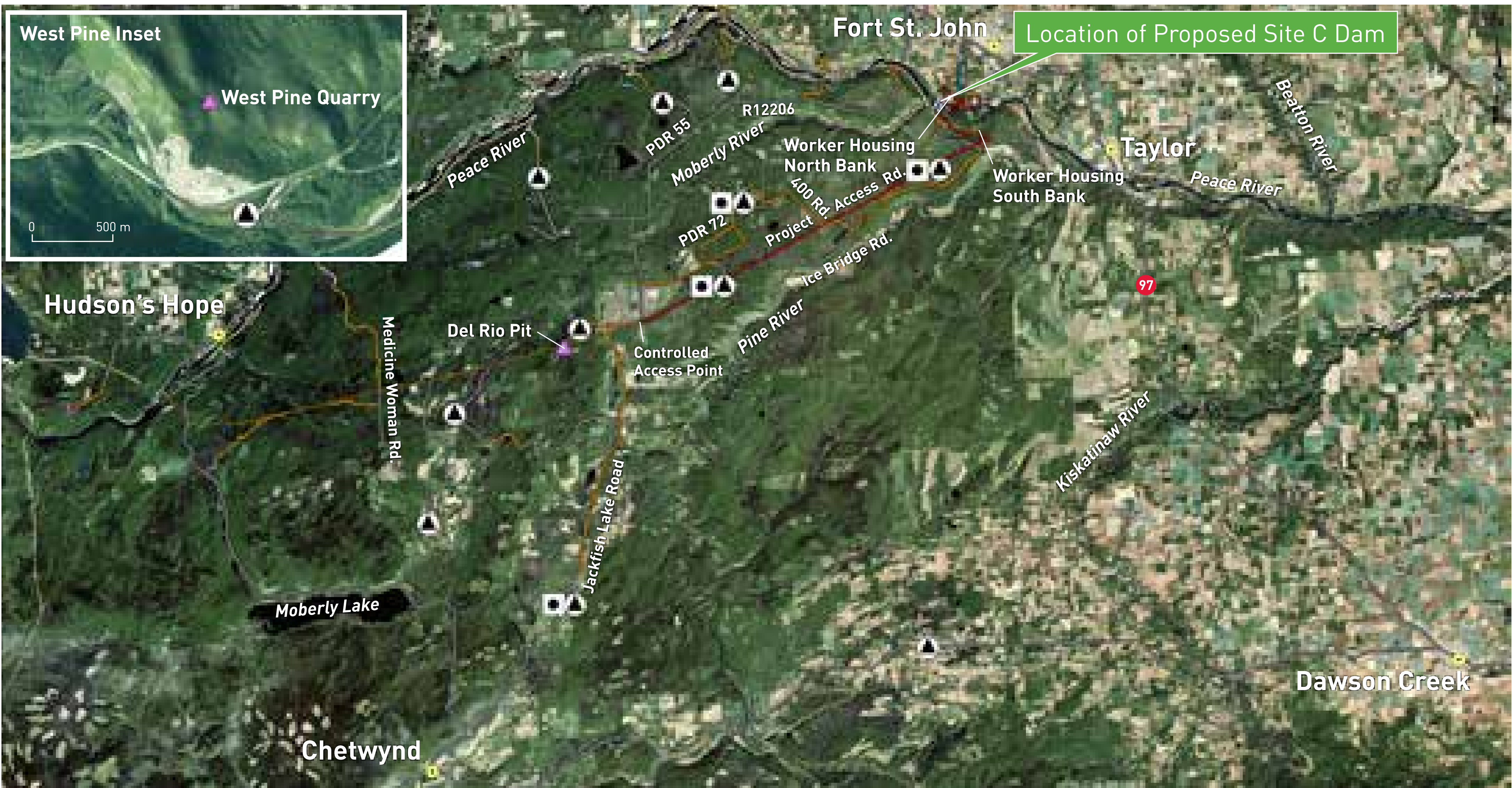
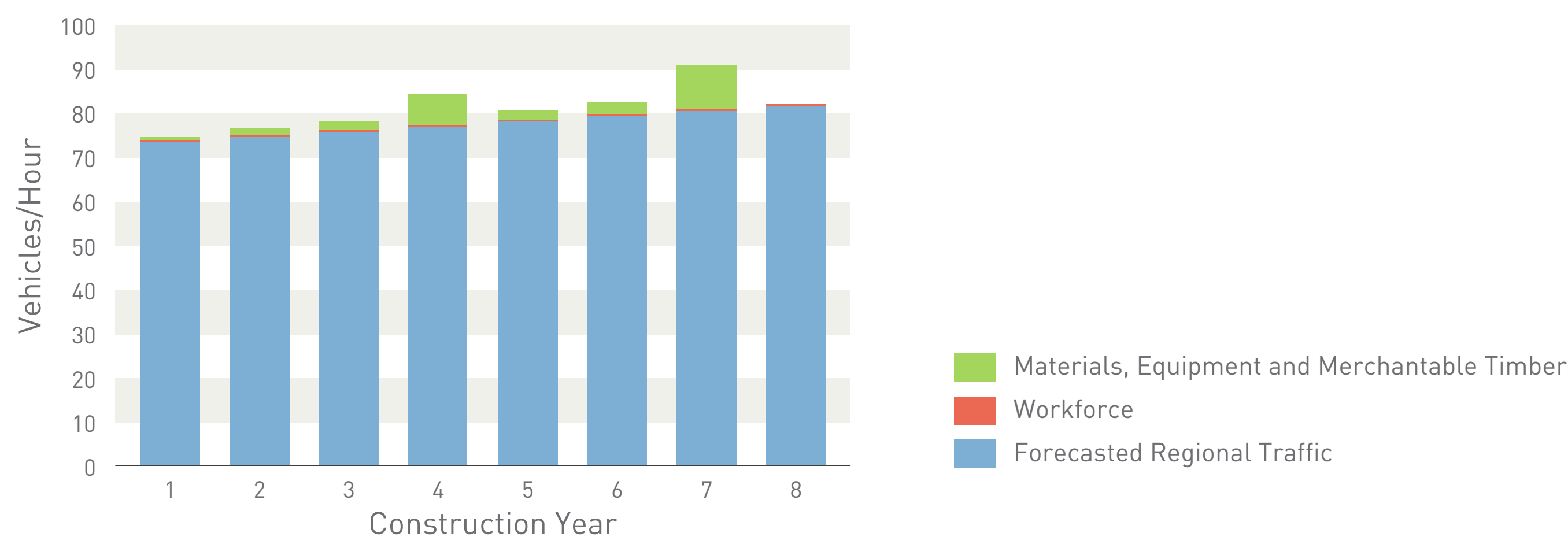
#### Project-related traffic activities in this area:

- Movement of dam construction materials from West Pine Quarry
- Transmission line construction
- Clearing of reservoir, dam site and transmission line areas
- Local commuting workforce
- Materials and equipment movement
- Workers living in workforce camp

#### Traffic Forecasts – Jackfish Lake Road:

- In the peak year, the project would add an average of approximately 10 vehicles per hour – over the forecasted average regional traffic volume of about 80 vehicles per hour – along Jackfish Lake Road

Average Traffic Volumes: Jackfish Lake Road



#### Mitigation

In addition to Construction Traffic Control Plans, potential additional mitigation for managing traffic along Jackfish Lake Road includes the following:

- Upgrades to Jackfish Lake Road, which would improve safety and reduce noise and dust.

- Constructing Project Access Road for Site C-related traffic would reduce potential conflicts with industrial vehicles and other traffic using the resource roads.
- Upgrades and maintenance to resource roads during the first year of construction until new access roads are complete.

- BC Hydro has initiated discussions with Canada Post and School District 59 regarding enhancements to mailbox and school bus pickup locations to ensure safe pickup and drop-off.
- Shuttle buses would be used to transport workers, to reduce the total number of vehicles travelling on Jackfish Lake Road and Project Access Road.



# CLEARING

## CONSULTATION TOPIC

Refer to pages 25–29 in the discussion guide

### PRELIMINARY CLEARING PLAN

BC Hydro is developing a Clearing Plan for the Site C project that will outline the proposed approach to clearing trees and vegetation and managing wood waste and debris.

#### Key considerations include:

- **Clearing vegetation**, including harvesting merchantable timber
- **Retain natural vegetation in select areas** where it would be beneficial to do so to prevent erosion, maintain water quality during construction and operation, and to protect wildlife habitat during construction
- **Minimize wood and vegetation waste**
- **Minimize effects on fish and water quality**
- **Support safe use of the reservoir following construction**, including debris management and creation of a clear boating navigation zone

### 1. CONSTRUCTION AREA CLEARING PLAN

Clearing is required in all construction areas early within the construction schedule. These areas include:

- The dam site
- Sources of construction materials
- Highway 29 realignments
- Access roads
- Transmission corridor



### 2. RESERVOIR CLEARING PLAN

BC Hydro is proposing to clear the reservoir prior to inundation. This would include:

- the removal of all merchantable timber within the reservoir area, except on very steep or unstable slopes
- the removal of all non-merchantable timber that extends above 455 metres elevation. This would create a clear boating navigation zone with a minimum clearance of 5 metres below the proposed minimum normal reservoir operating level.

The Clearing Plan also outlines benefits to retaining a limited amount of trees in the reservoir area, as outlined below.

- **Minimize erosion and sedimentation.** Retain trees on very steep or unstable slopes to minimize erosion and sedimentation.
- **Maintain riparian habitat.** Non-merchantable trees retained in riparian areas to support riparian habitat. This is consistent with the approved work practices that BC Hydro uses in other areas where vegetation maintenance is required.
- **Maintain fish and wildlife habitat.** Retaining non-merchantable trees to support habitat for birds and small mammals before inundation.
- **Maintain visual quality.** Retaining some non-merchantable trees to support visual quality in the valley during the construction period by maintaining low natural tree cover.



# CLEARING

## CONSULTATION TOPIC

Refer to pages 25–29 in the discussion guide

The graphics below shows a viewpoint of the Peace River, **west of Farrell Creek** as it is today and with the areas of proposed clearing indicated.

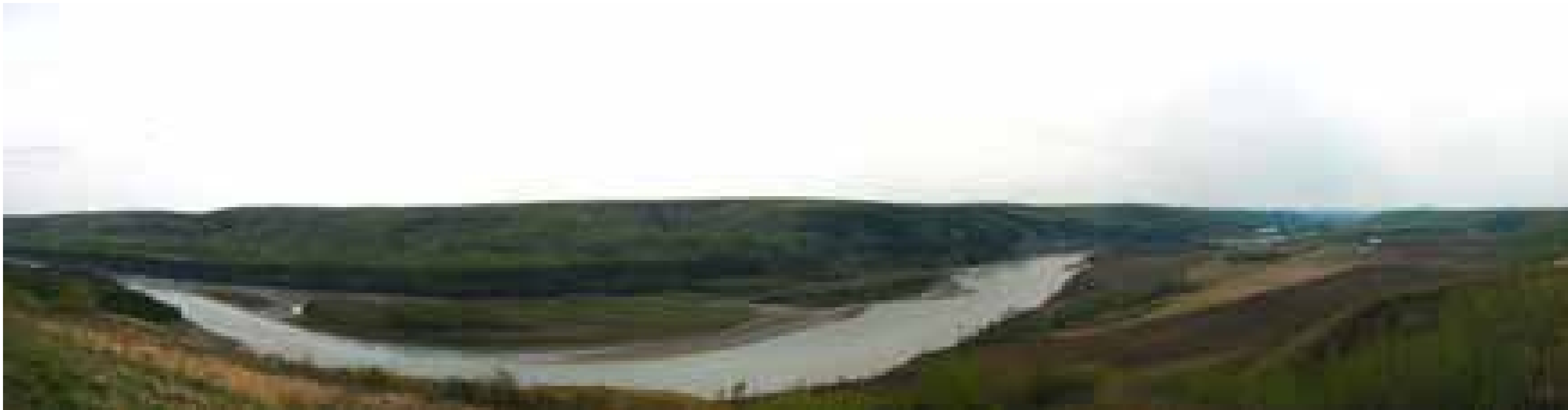


Existing – West of Farrell Creek



Proposed Clearing – Artist’s rendering of proposed clearing prior to reservoir filling

The graphics below shows a viewpoint of the Peace River, **east of Halfway River**, as it is today and with the areas of proposed clearing indicated.



Existing – East of Halfway River



Proposed Clearing – Artist’s rendering of proposed clearing prior to reservoir filling



# CLEARING

## CONSULTATION TOPIC

Refer to pages 25–29 in the discussion guide

### DEBRIS MANAGEMENT

During construction, natural woody debris and debris from clearing activities would move downstream in the Peace River as a result of natural spring runoff and ongoing hydroelectric operations. A debris trap and catchment booms are planned to catch the debris above the dam site construction areas.

Following construction, BC Hydro would continue to manage floating debris on the reservoir upstream of the dam site.

Plans to minimize wood and vegetation waste include:

- Encourage maximum utilization by the forest industry
- Minimize reservoir floating woody debris by removing trees within areas predicted to erode in the first 5–10 years after reservoir creation
- Grind non-merchantable trees to create material for biofuels
- Use a Smoke Management Plan to burn remaining waste material within Open Burning Regulations



Fraser River debris trap and fin boom



Wilder Creek: Proposed location of debris trap and fin boom

### CLEARING ACCESS ROADS AND BRIDGES

An estimated 95 per cent of clearing in the construction areas and reservoir would be undertaken by conventional ground-based harvesting, with the remaining to be undertaken by helicopter. A variety of roads and bridges would be required to support this clearing work.

New roads and upgraded roads will be required as follows:

- Upgrading existing roads (84 kilometres)
- Constructing new all-season roads (23 kilometres)
- Proposed new winter roads, which are reclaimed relatively quickly (113 kilometres)

Temporary bridge spans would be used to access islands; these would be in place from between a few weeks to one season.



Example of a clearing road



# CLEARING

## Forest Industry – Using Merchantable Wood

The forest industry in the Peace region is well established, producing mainly lumber, oriented strand board (OSB) and market pulp. There are two major companies that process coniferous logs and three that process deciduous logs in the Peace region. Tree clearing could result in the sale of merchantable wood to the forest industry over a three- to four-year period.

The regional forest industry has the capacity to use all of the merchantable wood harvested for the Site C project, based on average annual consumption of merchantable deciduous and coniferous wood (2006 to 2010). On an annual basis, the Site C clearing would provide less than one-third of the regional deciduous demand and less than one-seventh of the annual coniferous demand. The current demand in the region for wood for bioenergy is 38,000 m<sup>3</sup> per year.

## CONSULTATION TOPIC

Refer to pages 25–29 in  
the discussion guide

## CLEARING VOLUMES AND SCHEDULE

### Construction Areas and Reservoir – Volumes

- In total, 1.4 million cubic metres (m<sup>3</sup>) of merchantable timber would be harvested from the reservoir and construction areas during the clearing process. This represents less than half of the current annual consumption by the forest industry in the Peace region.
- In addition, 1.2 million m<sup>3</sup> of non-merchantable timber would be removed from these areas.

### Clearing Schedule

The majority of clearing activities would take place in the first two years of the construction phase, and are predominantly focused on preparing the construction area sites.

BC Hydro is considering timing options for the clearing of the upper reservoir area and tributaries, from approximately the upstream end of Bear Flat to upstream of the community of Hudson's Hope.

Clearing activities in these areas are required prior to reservoir filling and could be planned either earlier in the construction period (Years 3 and 4) or later (Years 5 and 6).

### Considerations for Timing Options:

#### Earlier in Construction Period (e.g., Years 3 and 4)

- Clearing completed in a shorter period
- Some visual impacts would be seen earlier and for a longer period
- Continuity with Year 1 and 2 clearing could create contractor and local mill efficiencies

#### Later in Construction Period (e.g., Years 5 and 6)

- Some visual impacts of clearing along Highway 29 and near Hudson's Hope would be seen later in the construction period, with a shorter time before reservoir filling
- Recreational use of the shorelines in the upper Peace River would be disturbed for a shorter period of time

*Please see page 41 in the feedback form to answer questions related to clearing.*



### OVERVIEW: 2012 AGRICULTURAL ASSESSMENT

BC Hydro's agricultural assessment will inventory the agricultural baseline, or current conditions, and describe the potential effects of the Site C project on agriculture. The assessment looks not only at current use of agricultural land, but also the capability or potential of the lands for agricultural use.

The agricultural assessment will include:

- Agricultural land capability ratings, including agricultural climatic capability
- Agricultural crop suitability
- Likely current and future agricultural land use, shown as agricultural utility ratings
- Current agricultural land use (e.g., cultivated or grazing land)
- Agricultural tenure on Crown lands, including grazing licences and leases
- Current and expected future agricultural operations and practices
- Local and regional agricultural economic activity
- Local and regional food production and consumption estimates (a measure of food self-reliance)
- Effects on agricultural land base (loss of agricultural land)
- Effects on individual farm operations, including changes to land, farm infrastructure and farm activities

### MITIGATION MEASURES

The agricultural assessment will also propose mitigation measures. At the farm level, mitigation will include avoiding impacts and direct compensation for effects that cannot be avoided. Regionally, mitigation will focus on increasing agricultural productivity on lands not affected by the project.

### STUDY UPDATE - AGRICULTURAL LAND

BC Hydro is presenting preliminary results from the agricultural assessment for the proposed Site C project, focusing on land affected by the project.

### SUMMARY OF KEY FINDINGS

The following results are available at this stage:

- The updated agricultural study estimates that 3,816 hectares of Class 1–5 lands in the Peace River valley will be affected by the creation of the reservoir or other project components. This represents less than one per cent of the agricultural lands in the Peace River Agricultural Region.
- Of these lands, an estimated 1,666 hectares are rated as moderate or high utility, which means that they could be used for agriculture in the future.
- Approximately 590 hectares of these lands are currently cultivated.
- A total of 34 farm operations could be partially affected by the project. One farm operation would lose the majority of its agricultural land base.



### 1. LAND CAPABILITY FOR AGRICULTURE

Previous land capability for agriculture ratings for the Peace region and Site C components were based on small-scale Canada Land Inventory (CLI) and BC Land Inventory (BCLI) mapping from the early 1970s. BC Hydro updated the agricultural capability mapping with field studies as part of earlier Site C agricultural studies carried out in the late 1970s and early 1980s.

The current study updates the previous agricultural capability mapping using the following:

- Field investigations, including soil sampling to assess soil capability
- Lidar digital mapping, to provide more accurate slope, aspect and topographic information
- Slope mapping
- Orthophotographs, providing recent aerial photography and base mapping
- Up-to-date climate records and climatic capability analysis

### KEY FINDINGS – AGRICULTURAL CAPABILITY

The key findings of the current study for the proposed reservoir area and other project components include the following:

- **Updated agricultural capability ratings:** The agricultural assessment identifies 3,816 ha of Class 1 – 5 lands that would be permanently used by the project and no longer available for agricultural use. This includes 3,225 ha within the proposed Site C reservoir area and 591 ha within other project component areas. (See Tables 1 and 2).
- **Climatic capability:** The valley climate data indicates that the crop growing season has a natural climatic moisture deficit. This climatic moisture deficit can be overcome with irrigation.
- **Soil capability:** The valley soils are predominantly fine-textured, with a high moisture-holding capacity. This means that, with irrigation, much of the natural Class 2 lands would improve to Class 1 and would be capable of supporting a wider range of crops.



## 2. AGRICULTURAL UTILITY AND EXPECTED FUTURE USE

The agricultural assessment estimates future agricultural use by assigning a utility rating to agricultural lands within the Site C project area to reflect the likelihood of future use for cultivated agriculture.

Agricultural utility ratings are defined as:

- **High utility:** Class 1 to 3 lands with a high likelihood of being used for cultivated agriculture in the future
- **Moderate utility:** Class 4 and 5 lands with a high likelihood of being used for cultivated agriculture in the future
- **Low to nil utility:** Class 6 and 7 lands and lands with a low to nil likelihood of being used for cultivated agriculture in the future

### Agricultural Utility – Key Findings

- Within the Site C reservoir and project component areas, an estimated 1,666 ha are rated as being of moderate and high utility, most of which are on the north bank of the Peace River. Low utility lands are primarily in the upper tributary, island and south bank areas.

## 3. CURRENT AGRICULTURAL LAND USE

The agricultural assessment includes farm operator interviews and land use inventories to understand and characterize current farm and ranching operations, and crop production in the study area. These interviews contribute to understanding current agricultural land use, potential project effects on individual farm operations, and options to reduce the effects on agricultural lands and operations.

Agricultural interviews are being conducted with farm operators whose land or operations may be affected by the proposed Site C reservoir, dam site and Highway 29 realignment areas. To date, interviews have been conducted with 21 of the 34 farm operators that have been identified (three operators have declined to be interviewed), and interviews with operators will continue through fall 2012.

### Current Agricultural Land Use – Key Findings

- A total of 34 farm operations could be partially affected by the Site C reservoir and project component areas.
- One farm operation would lose the majority of its agricultural land base
- Of the total Class 1 – 5 lands within the Site C project component areas, approximately 590 ha are currently used for crop production and would no longer be available for agriculture use
- Existing crops are predominantly forage, grain and canola
- Seasonal market produce has occasionally been produced over the years, including in 2012
- Livestock production is predominantly cattle and horses



### MITIGATION OPTIONS

As part of the EIS submitted to the BCEAO and CEA Agency, the agricultural assessment will include options for mitigation of effects on agriculture.

Generally mitigation will focus on maintaining or increasing agricultural productivity on lands not directly affected by the project. Agricultural mitigation measures can be categorized as follows:

- **Construction Good Management Practices.** BC Hydro would implement good management practices for all aspects of construction, including those that would affect agricultural land. Examples of construction good management practices include dust, noxious weed, erosion and sediment control.
- **Direct On-Farm Mitigation.** Direct mitigation at the farm level would be focused on avoiding, reducing or compensating for direct adverse effects on agricultural land and operations, including management of on-farm impacts, such as changes to farm access, buildings, wells or fencing.
- **Agricultural Compensation Program.** BC Hydro is proposing a regional agricultural compensation fund as a significant component of agricultural mitigation. Potential projects funded through this program may include agricultural research and development, infrastructure, and management programs.

### AGRICULTURAL COMPENSATION PROGRAM

BC Hydro is proposing to establish an agricultural compensation fund to support in-valley and regional agricultural projects.

These projects would focus on enhancements that would improve agricultural production on a local and regional scale.

The agricultural compensation fund, administration and governance will be proposed in the Environmental Impact Statement and are expected to evolve through the review and consultation process. For example, regional agricultural projects may be nominated by community or agricultural organizations for evaluation by the agricultural fund administrators.

### POTENTIAL AGRICULTURAL MITIGATION PROJECTS

Examples of potential projects that could be developed under the fund are presented below:

- Crop irrigation research and development and infrastructure to enhance agricultural capability in the Peace River valley
- Vegetable sector projects, such as vegetable storage and processing facilities near transportation routes, to support development of higher-value agricultural production
- Forage sector projects to increase current forage (food for horses and cattle) and grain crop production levels
- Range and pasture sector improvements, such as clearing, seeding, fertilizing and fencing, to increase capacity and local production
- Regional agricultural programs, such as invasive plant management, agricultural climate adaptation research or local food production programs

*Please see page 41 in the feedback form to answer questions related to agriculture.*



