## Welcome

### **Revelstoke 6 Project**

We're here to share information about the project so you can see how it might affect you, your community, and the environment.

### Is there anything else that needs to be considered?

Did we miss anything?

Is there something else you think we should do to enhance project benefits or reduce project impacts?

# Overview of the project



- Revelstoke Dam was designed to hold six generating units, but only  $\bigcirc$ four were installed when the dam was built.
- BC Hydro recently added a fifth generating unit that began  $\bigcirc$ operating in 2010.
- $\bigcirc$  While Revelstoke 6 probably won't be needed until about 2026, BC Hydro is pursuing regulatory approvals now in case the unit's capacity is needed sooner.
- The project involves work at Revelstoke Dam to install the sixth unit  $\bigcirc$ and construction of a new capacitor station near Summerland to deliver the additional power to the grid.

- The project also involves an additional water licence for 3,000  $\bigcirc$ cubic feet per second to allow the facility to be operated at peak generation when needed. Although Revelstoke dam was licenced for six units when it was constructed, the newer units are slightly larger and can use more water.
- BC Hydro has applied for a water licence under the Water  $\bigcirc$ Sustainability Act which will be reviewed concurrently with the Application for an EA Certificate.

# Revelstoke 6 project location





# Reve stoke 6 project benefits

### **Jobs and Economic Benefits**

Revelstoke Unit 6 would create over 400 person years of temporary employment and generate local spending of about \$45 million for goods, materials and services.

## Meeting the needs of BC Hydro customers

Revelstoke Unit 6 would provide significant additional generating capacity to BC Hydro's system, approximately 500 megawatts to help meet peak demand periods.

### **Cost effective**

Most of the investment was already made when Revelstoke Generating Station was built.

### Low impact

Revelstoke Unit 6 would not involve any significant change to the

facility and construction activities would be within the existing facility footprint.

## Maximizing the value of BC Hydro assets

The addition of a sixth unit provides more operating flexibility.

## **Revelstoke 6 consultation and engagement**



- BC Hydro recognizes the importance of an open and meaningful consultation process through all Project phases.
- BC Hydro met with a committee from November 2013 until December 2016 to discuss the project with representatives from First Nations, federal, provincial and local governments, not-forprofit groups, businesses, property owners, and interested parties.
- The Ktunaxa Nation, Okanagan Nation and Secwepemc Nation jointly prepared Part C part of the Environmental Assessment Application with BC Hydro.
- BC Hydro continues to consult with Ktunaxa Nation, Okanagan Nation and Secwepemc Nation through Tribal Councils and individual Bands.
- BC Hydro continues to share information about the project. Join the project mailing list to receive updates.
- Contact Jen Walker-Larsen

250 814 6645

Jennifer.walker-larsen@bchydro.com

## Revelstoke 6 application seeks to answer questions

### What are the construction activities?

### Will Project construction or operation affect the

environment or communities? How and how much? How will BC Hydro's Revelstoke Dam operations change with the sixth unit? **Can impacts be mitigated?** 

## The application assesses potential effects of **Revelstoke 6 and the new capacitor station on:**

- **Ecological Communities**
- Fish and fish habitat
- Plants

- Economy
- Socio-community
- Traffic



- Amphibians and  $\bigcirc$ reptiles (Herptiles)
- Birds
- Mammals ()

- Land and resource use
- Human health

Historical and ()archaeological heritage

## Revelstoke 6 construction activities



### Revelstoke 6 will install

- An approximately 500 megawatt (MW) generating unit into an existing empty turbine bay.
- A sixth steel penstock on the face of the Dam.
- A generator transformer, switchgear, and ancillary mechanical and electrical equipment in the existing powerhouse.
- Construction is expected to take just over three years.
- Project work is expected to take place within the fenced property boundary of Revelstoke Generating Station and use the same construction and laydown areas used for the Revelstoke Unit 5 Project.
- Project traffic will use existing Westside Road for site access.

# Revelstoke 6 temporary labour



## Revelstoke Unit 6 would create about 436 person years of temporary employment and is expected to follow a similar pattern to Revelstoke 5.

### Number of workers each week during Revelstoke 5 project construction

160	 	 	 	 
140	 		 	 



# Revelstoke 6 local and equity hire

- Like Revelstoke 5, the Columbia Hydro Constructors (CHC)
   Agreement will be used for Revelstoke 6.
- This union agreement has local hire provisions that gives first preference to local workers living within 100 kilometres of

the project site and second preference to workers living in the Columbia basin.

 The CHC Agreement also has equity hire provisions for workers who are First Nations, women in non-traditional roles, visible minorities, and disabled workers.

Local and equity hire percentages for Revelstoke 5 project construction

Local hire32%First Nations4.2%



Women in non<br/>traditional roles3.4%Visible minority1.9%Disabled1.3%

# Reve stoke 6 construction key ways it could affect you and your community

**Potential effect** 

**Proposed mitigation and benefits enhancement** 

O Develop a Construction Accommodation Plan that includes monitoring to identify

Housing

Increased demand for rental housing and temporary accommodation during 2-year peak construction period

### **Road transportation**

Increased project traffic on Westside Road Change in access to hunting, trapping, guide outfitting, recreation and tourism areas due to temporary road closure, traffic interruptions and increased Project traffic

### **Employment**

- Estimated 436 person years of work and 1/3 local labour force
- Tight local labour will be temporarily exacerbated by Project labour demand

- unanticipated constraints placed on rental housing and accommodation availability
- Contribution to the City of Revelstoke to support affordable housing
- O Develop a Traffic Safety Management Plan
- O Develop a Public Communications Plan
- O Monitor Westside Road condition
- Contribution toward any necessary road repairs
- Engage in collaborative planning with major employers, educational institutions and economic development agencies to support alignment of recruitment and training initiatives
- Financial contribution to support trades training
- C Enhance training and hiring of local and Aboriginal workers and monitor results

### **Business suppliers**

Estimated local spending of about \$45 million and estimated B.C. spending of about \$113 million for goods, materials and services by project and project workers

**Unanticipated impacts** 

Enhance procurement of materials, goods and services from local and Aboriginal-owned businesses and monitor results

Stablish a Community impact monitoring committee during project construction

# **Revelstoke 6 construction key ways it could affect the environment**



impact wildlife	<ul> <li>Restrict vehicle use and equipment storage to designated areas</li> </ul>
	O Restore sites after project work complete
<b>Disruption to</b>	O Clear vegetation prior to nesting season where possible
nesting birds	O Conduct surveys before any land clearing during nesting and avoid active nests
<b>Disruption to</b>	O Review potential for bat roosting at Revelstoke dam the year before construction starts and review timing of construction activities should bats be present
nesting bats	<ul> <li>Demolish temporary buildings between October and March or ensure no bats are present before demolition between April and September</li> </ul>
Contaminant spills-	O Follow Environmental Management Plans
silt, fuel, lubricant,	O Maintain construction machinery and vehicles
concrete or other substances introduced	O Spill kits in all machines and workers educated on their use
to the environment	O Designated areas for maintenance and refueling
	O Noxious weed survey and treatment, if required, prior to start of construction
Introduction of	<ul> <li>Utilize best management practices and standards</li> </ul>
noxious weeds	O Construction vehicles entering and leaving work sites will be washed thoroughly to

remove weeds and seeds

Wildlife mortality due to project traffic (primarily mammals and amphibians/ reptiles)

• Require workers to adhere to strict speed limits

 Maintain logbook of wildlife sightings, including roadkills, and post warning signs at locations with frequent wildlife crossings

## Revelstoke 6 operation key ways it could affect you, your community and environment



### Impact/benefit

No measurable effect on ecological communities, birds, amphibians and reptiles (herptiles), fish and fish habitat,

Increase in access and risk of erosion to archaeological sites

### **Proposed mitigation and benefits enhancement**

- None proposed
- Avoid disturbance of heritage sites through project design
- Employ systematic data recovery techniques
- Develop heritage resources chance find  $\bigcirc$ management procedures
- O Monitoring

○ Site protection

• Public education and outreach

# **Revelstoke Reservoir Potential effects of Revelstoke 6 operation**

Revelstoke Reservoir would continue to be operated within its normal range and show only minor changes with a sixth generating unit and the additional water licence.





#### 1970

Average water year (Revelstoke Reservoir inflows 100% of normal)

#### 1975

Wet year (Revelstoke Reservoir inflows 130% of normal)

#### 1992

Dry year (Revelstoke Reservoir inflows 80% of normal)

## Columbia River downstream of Revelstoke Dam Potential effects of Revelstoke 6 operation

Although the average flows downstream from Revelstoke Dam will remain the same with Revelstoke 6, the pattern of discharge will differ slightly from the current operation with five generating units.

![](_page_13_Picture_2.jpeg)

- Low flows below 12,000 cubic feet per second (cfs) will occur about the same amount of time.
- Medium flows (between 12,000 and 60,000 cfs) will occur less often.
- Higher flows over 60,000 cfs will occur more often.
- High flows over 75,000 cfs when the facility is running close to its maximum generating capacity will occur less than one per cent of the time.
- O During high flows from Revelstoke dam with six generating units and the additional water licence, the water level would be up to 0.5 metres higher immediately downstream of the dam.
- O The increased water levels with six generating units and an additional water licence would diminish with distance downstream from Revelstoke dam depending on the Arrow Lakes Reservoir water level. At a typical high July reservoir level, the increased water levels from the operation with Revelstoke 6 and the additional water licence would not be measurable by about 8 kilometres downstream. At a typical low January reservoir level, the increased water levels would not be measurable by about 15 kilometres downstream.

### **REVELSTOKE DAM DISCHARGE FLOWS**

![](_page_13_Figure_10.jpeg)