

MONTHLY FIELD STUDIES SUMMARY

November 2011

The Site C Clean Energy Project (Site C) is now in Stage 3, the environmental and regulatory review phase, which will include an independent environmental assessment. Stage 3 work includes conducting environmental and engineering field studies on and around the Peace River between the Williston Reservoir and the Alberta border.

An overview of studies that will be taking place in November 2011 is below. Additional study activities may occur; notice of these studies will be posted at www.bchydro.com/sitec.

Overview
Socio-Economic Studies
◆ Socio-Economic Assessment
◆ Agricultural Assessment Study
◆ Heritage Study Program
◆ Reservoir Clearing Plan Investigations
Wildlife Studies
◆ Fisher Study Program
◆ Mule Deer, Moose and Elk Study Program
Physical Environment Studies
◆ Climate and Air Quality Monitoring
Engineering Investigations
◆ Construction Access Roads Investigations
◆ Dam Site Investigations

Some field studies may require access to public and private land. BC Hydro will obtain permission before accessing private property and will notify property owners who may be directly impacted by helicopters. Ongoing regular BC Hydro work, in addition to the Site C field study activities outlined here, may be taking place on the Peace River and tributaries. This work is related to BC Hydro's Peace River water license requirements program or other operations work.

Field study updates are available at www.bchydro.com/sitec and in the Community Consultation offices in Fort St. John and Hudson's Hope.

For further information, please contact:

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November 2011

Study Name	Description	Timing
<p>Socio-Economic Studies – Socio-Economic Assessment</p>	<p>BC Hydro has initiated a socio-economic assessment, which will include all components of the Site C project.</p> <p>Topic areas within the socio-economic assessment currently include: economic, land and resource use, socio-community, visual and aesthetic resources, health, and First Nations community assessments. The study components may be revised in scope or timing on the basis of input from the public, First Nations, government agencies or consultant expertise, as part of the Pre-Application stage of the Environmental Assessment process.</p> <p>A local and regional study area will be defined relevant to each topic, for example using local and regional government boundaries or land management zoning or planning areas. First Nation community assessment study areas will be based on similarly defined local community areas, as well as the regional area relevant to their members.</p> <p>The first phase of the study involves baseline data gathering. Starting in August and continuing through the year, the team will be contacting local government, government agencies, businesses, and local organizations to request baseline information within the potential effect topic areas.</p> <p>During the study members of the socio-economic team will be in the local area conducting informational interviews, gathering data and taking photographs.</p>	<p>August 2011 – March 2012</p> <p><i>Data gathering phase</i></p>
<p>Socio-Economic Studies – Agricultural Assessment Study</p>	<p>BC Hydro is conducting an agricultural assessment study for the Site C project.</p> <p>This field program will verify and refine agricultural resource mapping, and conduct interviews with local ranchers, farmers and resource agency specialists to update and gather additional data on agricultural resources in the study area.</p> <p>The study will involve visual inspections of the land for evidence of agricultural resources and soil testing. The study may also involve subsurface testing, consisting of periodic shovel tests supplemented in some cases by use of hand augers. Soil samples</p>	<p>May – December 2011</p>

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	<p>may be taken off-site for laboratory testing of agricultural capability parameters including texture, pH, salinity, etc. The lab analyses will not be carried out for contamination testing purposes.</p> <p>For larger agricultural operations, an interview with the owner/operator and tour of the operation will be carried out to identify agricultural land base and economic resources.</p>	
<p>Socio-Economic Studies – Heritage Study Program</p>	<p>BC Hydro will be continuing the Heritage Study Program of the Site C project area.</p> <p>The archaeological study has been designed in consultation with the B.C. Archaeology Branch and carried out under permits issued under the <i>Heritage Conservation Act</i>.</p> <p>The assessment will identify, record and evaluate heritage sites located within the development area; assess potential impacts by the project to these sites; and recommend mitigation options.</p> <p>The majority of the work will be completed with shovel tests, as well as visual inspections of areas with good soil exposures, such as freshly tilled fields. In the fall, mechanized equipment (e.g. backhoes or power augers) may also be used in limited areas to look for deeply-buried archaeological sites.</p> <p>Crews will be primarily on foot, with land access by road or boat, supported occasionally by helicopter or all-terrain vehicles.</p>	<p>May – November 2011</p>
<p>Socio-Economic Studies – Reservoir Clearing Plan Investigations</p>	<p>BC Hydro is developing an updated clearing plan as part of the reservoir preparation plan work underway. The clearing plan will include a forest inventory, evaluation of clearing access road options, and evaluation of waste wood disposal options.</p> <p>Forestry professionals will be looking at the terrain and forest cover to assess the feasibility of existing and planned access routes for clearing activities.</p>	<p>May – November 2011</p>

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	<p>This work involves either walking the previously proposed clearing access routes, or by using a helicopter to conduct an aerial assessment of the proposed route. Field crews will be using handheld devices such as GPS and a distance measuring device to measure terrain and vegetation attributes. Crews will take pictures of terrain and vegetation conditions, as well as measurements of vegetation.</p> <p>If previously proposed clearing access routes are confirmed as infeasible then modifications will be made based on field studies.</p>	
<p>Wildlife Studies – Fisher Study Program</p>	<p>BC Hydro is conducting a study to further the understanding of fisher habitat use and movement patterns in and adjacent to the Peace River Valley.</p> <p>The study area extends from the Peace Canyon Dam to the confluence of the Pine and Peace Rivers on both sides of the Peace River.</p> <p>Fishers are members of the weasel family. They are about 60 cm in length and weigh 3 to 5 kg (6 to 11 lbs).</p> <p>Animals that have been fitted with radio-transmitters will be located monthly, via fixed-wing aircraft flights. Weekly locations will be obtained during ground visits during the breeding season to identify den sites (April through June). Weekly locations will also be obtained all year in some areas.</p> <p>Habitat assessments will be conducted at key fisher locations (e.g., den sites, rest sites) to document characteristics associated with the site. Establishment of trap sites and pre-baiting will occur.</p>	<p>December 2010 – April 2013</p> <p><i>Tracking of instrumented animals will take place between January 2011 and April 2013</i></p>

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<p>Wildlife Studies – Mule Deer, Moose and Elk Study Program</p>	<p>BC Hydro is conducting a mule deer, moose and elk study in the Peace River area from Hudson’s Hope to the B.C. – Alberta border.</p> <p>The purpose of the study is to further the understanding of mule deer, moose and elk habitat use and movement patterns in the Peace River region.</p> <p>Monitoring and habitat data collection began in mid-February 2010 and will continue for up to 24 months. Animals will be located using a combination of ground based telemetry and fixed wing telemetry flights. Flights are scheduled for the first and last week of the month (weather dependent).</p> <p>Ground-based locating of animals occurs during both the first and last week of the month.</p>	<p>Phase 2 monitoring will occur from February 2010 to winter 2012.</p>
<p>Physical Environment Studies - Climate & Air Quality Monitoring in the Peace River Valley</p>	<p>BC Hydro is collecting climate and air quality data from eight monitoring stations on private and BC Hydro owned land between Hudson’s Hope and Old Fort, south of Fort St. John.</p> <p>Information on various climate parameters will be gathered, including: air temperature, humidity, wind speed and direction, fog frequency and density, and precipitation. Monitoring of particulate matter (mixture of solid particles and liquid droplets in the air) will be conducted at Old Fort and Halfway River.</p> <p>This data will be used to establish baseline conditions and to inform the effects assessment of the Site C project on in-valley climate and air quality in the area.</p> <p>Stations are visited regularly to retrieve data. Access to the monitoring stations is by vehicle and foot.</p>	<p>November 2011</p> <p><i>Ongoing monitoring from February 2009.</i></p>
<p>Engineering Investigations – Construction Access Roads Investigations</p>	<p>BC Hydro is conducting site reconnaissance, topographical survey, and geotechnical investigations to identify improvements to existing roads and/or construction of new access roads in the area of the proposed Site C dam site.</p> <p>The site reconnaissance and topographical survey will be happening on the north bank on 240 Road, 269 Road, and Old Fort Road. On the south bank, the</p>	<p>August – November 2011</p>

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	<p>work is in the Jackfish Lake Road area between Chetwynd and the proposed dam site; along the existing transmission corridor, between the proposed dam site and Peace Canyon Dam; at the Highway 29 and Jackfish Lake Road intersection; and at the access to West Pine Pit, 75 kilometres south-west of Chetwynd.</p> <p>The work will assess the condition of existing public, forest service roads, and petroleum development roads that may be used for access to the dam site. It will also assess the topography and drainage conditions for potential improvements and/or extensions to those existing roads or alternative new alignments.</p> <p>Engineers and geologists will be conducting site reconnaissance to assess existing road conditions, slopes, excavations, stream banks and areas of exposed rock and soil. Surveyors will complete topographical survey of the existing roads and potential access routes. Survey work will include establishing markers to ensure all work is referenced to a common coordinate system, confirming the accuracy of laser radar (LiDAR) data. Crews will primarily be on foot, but helicopters may be utilized to conduct aerial assessment of the proposed routes.</p>	
<p>Engineering Investigations – Dam Site Investigations</p>	<p>BC Hydro is conducting investigations to determine engineering site conditions as required to support the environmental assessment process.</p> <p>Investigations will include performing geotechnical drilling, sampling and testing. Geotechnical instruments (piezometers and/or inclinometers) constructed of PVC pipe will be installed at each of the geotechnical drill holes to facilitate monitoring of groundwater levels or slope movement.</p> <p>Investigations will also include the ongoing monitoring of instrumentation at both the proposed dam site and along the reservoir shoreline.</p>	<p>November 2011</p>

Note: Access to public and private land may be required in order to complete study work. BC Hydro will obtain permission from land owners and provide notification to BC Hydro leaseholders before entry onto private or leased lands.