



BC HYDRO RIGHTS OF WAY GUIDELINES

COMPATIBLE USES AND
DEVELOPMENT NEAR POWER LINES

BC hydro 

FOR GENERATIONS

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Contact our province—wide Properties helpdesk at:

BC Hydro and Power Authority
Properties Division
12th Floor, 333 Dunsmuir Street
Vancouver, BC V6B 5R3

Phone: **604 623 3637** or outside the Lower Mainland, call toll-free: **1 800 667 1517**

Fax: **604 623 3951**

Email: properties.helpdesk@bchydro.com

OVERVIEW

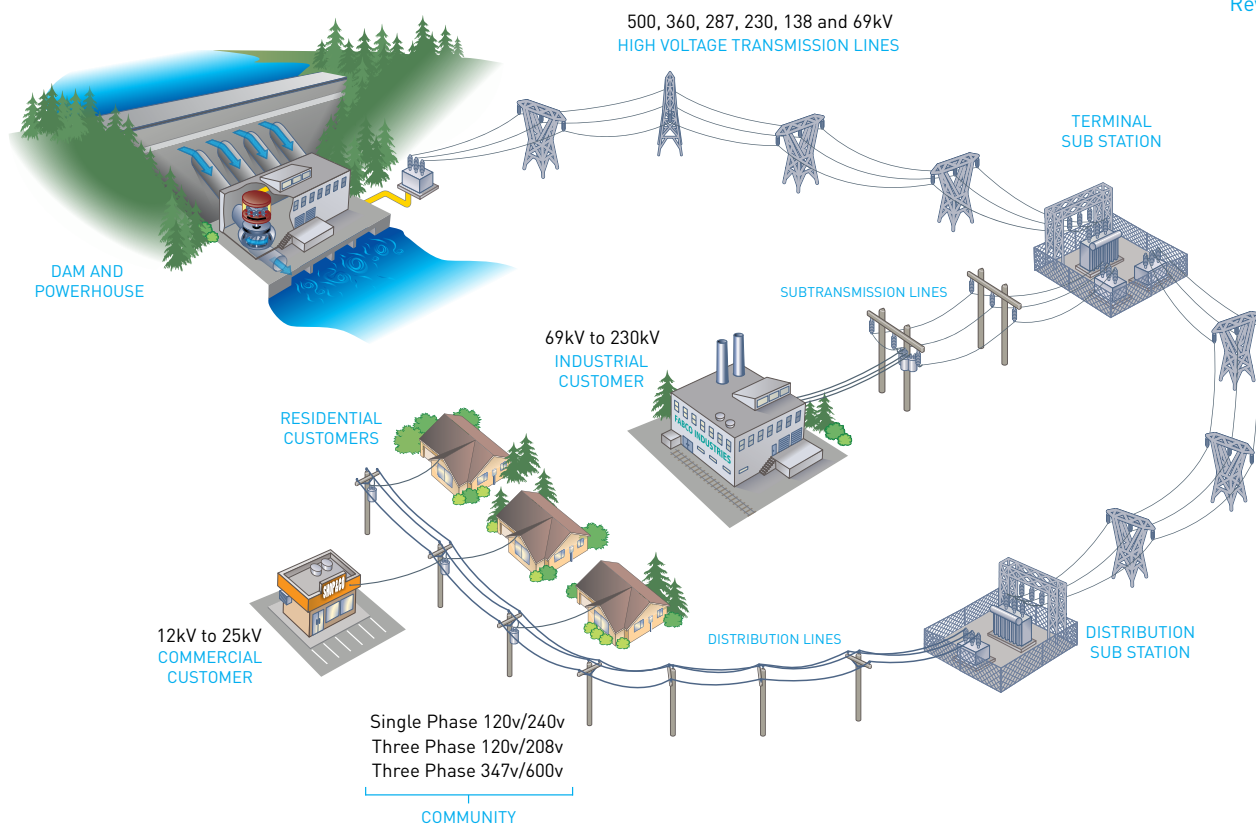
BC Hydro owns generation, transmission and distribution system assets such as dams, substations, towers, poles and underground cables.

The electricity we use is delivered through an interconnected system of more than 74,000 kilometres of power lines that traverse some of the most challenging terrain in the world.

The transmission system moves electricity from generating stations to substations, where it is transformed to lower voltages for distribution to customers.



Revelstoke Dam



Power lines are essential to distributing electricity to your home or office, but they are not designed for human contact. It is extremely dangerous to touch a power line, whether it is overhead, on or in the ground.

BC Hydro's power line corridors cross all types of property: residential, agricultural, industrial, commercial and recreational. BC Hydro negotiates with the land owner (private property owners, First Nations, municipalities and the provincial and federal Crown) to acquire Rights of Way (ROWs) to construct, operate and maintain a power line and the right to keep the ROW clear of all structures, fire hazards, vegetation and any other use that may interfere with the operation or maintenance of the power line. The ROW may also be reserved for the placement of future BC Hydro works. Land owners retain the right to use these ROW areas for activities that do not impact public safety, interfere with existing or future BC Hydro works, cause a hazard or interfere with the rights granted to BC Hydro.

BC Hydro's ROWs can contribute to communities through the development of greenways, recreational corridors, agriculture, and other uses approved by BC Hydro. Our goal is to work with land owners, local governments, public agencies and interest groups to utilize ROWs for a variety of uses compatible with the safe operation of our electrical system. To achieve our goal of living and working safely around power lines and of supporting a variety of uses for our ROW corridors, BC Hydro has produced this Compatible Use and Development Guidelines booklet. Coordinating with BC Hydro early in your planning process can keep you safe and avoid wasting time and money.

These guidelines should be read in conjunction with the ROW agreement registered against the specific property. The ROW is registered on the title of the property in perpetuity and remains on the title when the ownership of the property changes. Even when the ROW is not registered (e.g. BC Hydro works within the road), certain Standards and Regulations must still be met and all proposals over, under and near power lines should be discussed with BC Hydro.

A copy of your Title and any registered right of way agreements can be obtained from the Land Title Office. More information can be found at <http://www.ltsa.ca/cms/general-public>

BC Hydro partners with land owners to manage ROWs to ensure the safety of the public and the security of the electrical supply. BC Hydro provides information on safe practices and evaluates proposals within (and sometimes adjacent to) ROWs because serious accidents involving power lines need not happen.

BC Hydro's pre-approval is required when proposing to utilize the BC Hydro ROW. When you wish to work within or cross a BC Hydro ROW, discuss development on or adjacent to a ROW, subdivide a property with a BC Hydro ROW registered on the Title or ask any general BC Hydro Properties questions, please consult with our office. This will reduce the likelihood that the proposal will be putting you or others at risk.

If you have a proposal regarding ROW use, please complete the ROW Use Application included in this booklet and send into your regional office or via email to the Properties Help Desk or you may apply online at <https://www.bchydro.com/energy-in-bc/our-system/right-of-way-management/application-form.html>. For further information call 1-800 667 1517 or 604 623 3637 or email to properties.helpdesk@bchydro.com



Inter River Park, North Vancouver
Approved parking lot under
230,000 Volt Circuit.

WHO ARE THESE GUIDELINES FOR?

PROPERTY OWNERS

To assist property owners seeking to maximize use of their land along BC Hydro's ROW by providing safety guidelines and a set of recommendations for appropriate land use.

LOCAL GOVERNMENTS

To promote awareness of the potential to develop and improve ROWs and to provide supplementary planning guidance on the development of ROWs. These guidelines will provide a basis for analyzing and approving land development located in close proximity to BC Hydro's works and help communities plan for growth, through successful development of land close to and within BC Hydro's ROWs.

DEVELOPERS AND DESIGNERS

To help provide awareness and clarity about the design constraints posed by ROWs and therefore the value of the development through good design.

THIRD PARTY USERS

To provide guidance and approval of proposed uses of ROWs to Third Parties including, but not limited to, Private and Crown land Lessees, Independent Power Producers, Loggers, Recreational Users, Other Ministries

PREPARING AND SUBMITTING A PROPOSAL

There are potential risks with working or carrying out activities in or near the ROW area and energized works. What you propose to do within a utility ROW determines the level of consultation necessary with BC Hydro. For general inquiries or further information contact **1 800 667 1517** or **604 623 3637** or email to **properties.helpdesk@bchydro.com**

NO TASK IS SO URGENT OR SO IMPORTANT THAT YOU CANNOT TAKE THE TIME TO DO IT SAFELY

Help us help you. The more detailed and complete your submission is, the faster our response is likely to be.

Proposals are submitted to your regional BC Hydro Properties Office for review or email to **properties.helpdesk@bchydro.com**. This guideline is provided as an aide to help you prepare your proposal and assist you in providing the information necessary for the prompt and effective evaluation of your proposal.

1. Provide the Legal Description

This is found on your tax assessment notice or certificate of Title. If you cannot locate it, your civic address may be sufficient.

2. Be Sure to Include:

- a. A detailed description of your proposal;
- b. A map or legal plan of the property;
- c. A drawing of an appropriate scale showing:
 - i. The location of the proposed installations or uses in relation to existing roads, BC Hydro's ROW and adjacent legal boundaries (including electrical drawings and landscaping plans);
 - ii. The horizontal and vertical clearances or distances from the proposed installation to adjacent BC Hydro works (e.g. tower legs, poles, anchors, cable);
 - iii. The dimensions of the proposed installations, changes in grade or elevation, uses and maximum heights (including load and reach) of any vehicles and equipment to be brought onto the ROW; and,
 - iv. Details of materials to be used (wood, metal, PVC, etc).

3. Obtain All Necessary Consents

It is your responsibility to obtain the written consent of the land owner and other parties with an interest in or jurisdiction over the proposed use and/or the property (other charge holders and regulators)

Ample lead time must be allowed if you have deadlines to meet (four to six weeks is the suggested minimum). Once the review process has been completed a letter will be sent by BC Hydro

to the Owner and Applicant. If your proposal was approved the Compatible Use Letter will contain all of BC Hydro's terms and conditions of the approval. You will be required to sign and return the Compatible Use Letter to BC Hydro, by the deadline specified, in acceptance of the specific terms and conditions. Note that if any modification or relocation of BC Hydro's works is contemplated that the relocation could take up to one year.

Do not start construction activity on the BC Hydro ROW until you have received, signed and returned (if required), the Compatible Use Letter and, if applicable, have an on-site meeting with a BC Hydro representative(s) to review the safety procedures and sign off on the necessary forms (e.g. WSBC 30M33, Logging Near power lines).

A number of factors are taken into consideration during the review process including the safety of yourself and others, the security of BC Hydro's works, property rights and Hydro's ability to serve its customers, and BC Hydro's future requirements for additions, modifications and maintenance of the electrical system. As a user of the ROW you will be expected to (list not limited to):

- comply and ensure compliance with all applicable legislation, regulations, guidelines, orders and standards, including without limitation all environmental laws and Part 19 Electrical Safety of the Occupational Health and Safety Regulation (a copy of this regulation is available at www.WorkSafeBC.com);
- release BC Hydro from any liability arising from the proposed use of the ROW;
- be responsible for any damage to BC Hydro's works due to the proposed use of the ROW;
- assume the costs of any required modifications, protection or relocations of BC Hydro's works to accommodate the proposed use;
- ensuring where possible, non-metallic and/or non-conductive materials, non-flammable and non-toxic materials are used;
- not inhibit or interfere with BC Hydro's access to and maintenance of its works.

It is important to understand that each location and development has many different variables. For example, each BC Hydro structure can vary in both design of the structure and height of the wires, and buildings can vary in height, length and proximity to the power lines. As a result, each development is reviewed on a site specific basis.

POSSIBLE COMPATIBLE USES OF RIGHT OF WAY

Design efforts should be made to keep a 10 metre (33 feet) clear zone around BC Hydro's works. Proposals for reduced clearances will be reviewed on an individual basis by BC Hydro.

Below are some examples of activities that may be proposed for review:

- Multi Use trails, paths and walkways;
- Non-permanent, non-metallic small sheds less than 3.6 metres (11.8 feet) in height and a floor space of not more than 36 square metres (387.5 square feet) with no wiring or plumbing;
- Driveways and access roads;
- Fencing;
- Golf courses;
- Farming, Tree Farms;



Two 500kV steel structure circuits through Coyote Creek Golf Course, Surrey

The following are not permitted within the ROW **unless expressly authorized in writing by BC Hydro:**

- Burning, blasting or log decking;
- Stock piling of excavated, building or other material;
- Storage or handling of flammable or explosive material;
- Fueling of vehicles and equipment;
- Deposit of any fill material;
- Organized parking of vehicles; and,
- Buildings or portions of buildings, including foundations and eaves.



Photo courtesy of Janet Bradner

POLLINATOR CORRIDORS

While the management of vegetation along BC Hydro ROW requires a restrictive approach to trees, there are opportunities to introduce other ecological enhancements to these corridors - such as pollinator fields. Pollinators—especially bees—are an integral part of a healthy ecosystem and an invaluable asset to food production.

One of the options available to help support the work of these pollinators is to use the open and contiguous aspects of power line corridors to create pollinator-friendly habitat. As part of a re-vegetation plan or site development, BC Hydro encourages the establishment and use of pollinator fields along our ROW.

GENERAL SAFETY INFORMATION

Electricity is always trying to get to the ground. Like all good travelers, electricity takes short cuts whenever it can. If something that conducts electricity gives that electrical energy an easy path to the ground, it will take it! Contact or near contact with BC Hydro's works is extremely dangerous and must be avoided. The consequence to objects, including humans, approaching electricity conductors too closely can be fatal.

The clearance required will depend on the operating voltage of the line, construction and design of the line, topography of the location over which the line passes and the type of development proposed.

Nothing should ever be attached to BC Hydro's works, whether temporary or permanent, unless expressly authorized in writing by BC Hydro.

SITE SAFETY PLANS (INCLUDING RESTRICTED ACCESS AND DESIGNATED WORK AREAS DUMPING, STORING, ETC.) MAY NEED TO BE SUBMITTED FOR REVIEW AND APPROVAL. THE PLAN WILL NEED TO MEET BOTH BC HYDRO AND WORKSAFEBC REQUIREMENTS.

3 KEYS OF ELECTRICAL SAFETY



Electricity is a part of our everyday lives and must be treated with respect.

1. LOOK UP AND DOWN

- Plan your work to prevent electrical contact—call for assistance; and,
- Identify overhead and underground power lines.



2. KEEP BACK – KNOW YOUR LIMITS

- On foot, stay at least 10 metres (33 feet) away from equipment operating around power lines; and,
- Use a spotter to make sure you keep equipment back at least six metres (20 feet) from power lines.



3. STAY BACK AND CALL FOR HELP

- Stay back at least 10 metres (33 feet) from a fallen power line, exposed underground power line, or any objects in contact with the line;
- Stay put until help arrives if your equipment contacts a line; and,
- If it's a life threatening situation, jump clear of your vehicle, feet together, and shuffle away keeping both feet close together. Never contact the ground and your vehicle at the same time.



ELECTRIC AND MAGNETIC FIELDS (EMF)

Electric and magnetic fields are present everywhere that electricity flows. All electric wires and the electrical devices they supply are sources of electric and magnetic fields.

Together, electric and magnetic fields are known as EMF. EMF is found everywhere there is electricity, including household wiring, electric appliances and power lines. Both electric and magnetic fields are strongest at the electrical source and diminish quickly with distance. For more information on EMF see:

https://www.bchydro.com/content/dam/hydro/medialib/internet/documents/safety/bctc_pdf/understanding_electric_and_magnetic_fields.pdf

Radio and television interference can be the result of various electrical appliances or objects. BC Hydro can help identifying the sources of such interference. For more information contact powerquality@bchydro.com or 604 528 1579.

PLANTING AND LOGGING NEAR POWER LINES

PLANTING NEAR POWER LINES

Landscaping within the ROW is restricted to low-growing trees, shrubs and plants. The maximum height at maturity for the plantings depends on the voltage of the power line circuit. For vegetation immediately outside of the ROW, BC Hydro recommends not to plant any vegetation that grows tall at maturity or grows with weak root systems that have a high probability of falling on BC Hydro's electrical works ("hazard trees"). BC Hydro (including its agents and contractors) shall have the right to remove any tall-growing trees, shrubs and plants from underneath and hazard trees adjacent to BC Hydro's power lines for line security and safety purposes from time to time.

LOGGING AND TREE FELLING ACTIVITIES

Trees located outside the minimum distance from overhead electrical conductors must be felled using a positive directional control to ensure the tree falls away from or parallel to the conductors. If trees are located within the minimum distance to electrical conductors or the logging operator cannot prevent trees or parts of them from encroaching on the minimum distance then felling must be conducted under the direct supervision of a Certified Utility Arborist.

Helicopter logging around power lines is extremely hazardous. Prior to any helicopter logging in proximity to power lines, contact your regional BC Hydro Properties office. Helicopter logging is not allowed within the ROW area and helicopters must not fly over the power lines when carrying logs.

Highlead logging utilizing steel spars or cables creates significant electrical induction hazards in the vicinity of power lines.



Example of Fringe Trees incorrectly left standing adjacent to a BC Hydro ROW

NO edge tree strips are to be left adjacent to the ROW as they have the potential to fail onto the power lines. The storage of logs and debris and slash burning is not permitted within the ROW.

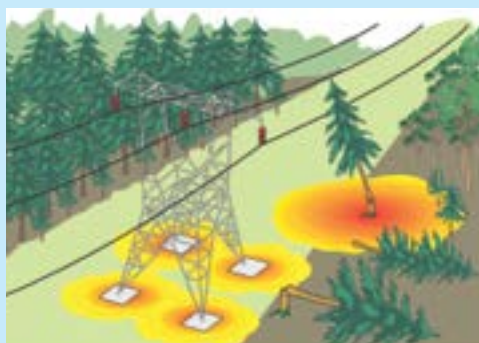
Please contact your regional BC Hydro Properties office well in advance (four to six weeks is suggested) so that your plans can be properly evaluated and, if approved, reviewed with you in the field by a BC Hydro Vegetation Management Representative prior to commencing any activities.

DID YOU KNOW?

- Trees are full of sap and moisture, which makes them conductive. That's why they conduct lightning and why they create a danger when electrical wires are nearby.
- That power line wires can move as much as four metres (over 13 feet) vertically on a high voltage line, depending on electrical load and weather conditions. They also swing in the wind.



- Trees falling near and onto power lines pose extreme safety hazards. They also cause power outages to large areas and many customers.



- Wooden ladders and tool handles offer no protection at all. Wood is not a safe electrical insulator for any voltage of electricity

UNDERGROUND INSTALLATIONS

To avoid the risk of a fault transfer, if electricity arcs from the overhead power line to the ground or, to BC Hydro's underground facilities, proper positioning of proposed underground utilities (e.g. sewer, water, irrigation, conduit) is required to prevent an accident.

Proposed underground works to be installed within a BC Hydro ROW must be designed with non-conductive material where possible and all underground works should be identified by either permanent above ground markers or nonconductive underground Electronic ID Markers.

Proposed underground works to be installed within the BC Hydro ROW need also be designed to withstand use by a BCL-625 Truck (as per specifications set out in the BC Ministry of Transportation and Infrastructure Supplement to the Canadian Highway Bridge Design Code S6-06). Where BC Hydro duct banks are already installed, further restrictions on weight and/or equipment over top of duct banks may be identified. No proposed underground works can be located between a Hydro guy anchor and pole/tower structure.

All proposed underground works must be designed to be a minimum 10 metres (32.8 feet) from BC Hydro's works, both overhead and underground, with the exception that metal/ductile iron (DI) pipe or gas installations require a 30 metre separation. Written approval is required from BC Hydro for all proposed installations within a BC Hydro ROW or within the outlined minimum separation distances and an Inspector may be required to be onsite.

If BC Hydro is to reduce (or enlarge) the separation for any project it will be by specific review and may require an induction and/or soil resistivity study. If this study is required, consent for your proposal will not be given until the study is complete and has been reviewed and approved by BC Hydro.

Knowing what underground facilities are buried in or near your dig jobsite is essential if deadly, dangerous, or destructive accidents are to be avoided. One phone call to BC One Call is the best way to find out what is buried before you dig. Call **1 800 474 6886** or on your cell ***6886**. Once BC One Call has provided the information, and before digging, it is your responsibility to determine the precise location of the Underground facilities. If needed please contact an independent Underground Utility Location company in your area.

The information gained through BC One Call can be used to prepare your proposal to BC Hydro.

BC One call drawings designate underground Transmission plant (69kV to 230kV) in Orange colour and Distribution plant (34kV and below) is designated in Pink & Blue colours.

Ample lead time must be allowed for BC Hydro to review (four to six weeks is the suggested minimum). If approved, you will be provided with a Letter containing BC Hydro's terms and conditions with regard to the proposed installation.

For general inquiries or further information contact **1 800 667 1517** or **604 623 3637** or email to properties.helpdesk@bchydro.com.

INTERNATIONAL COLOUR CODE FOR MARKING BURIED FACILITIES

When your site is marked out showing the location of buried facilities, the markers will be coded in accordance with these colours to indicate the type of buried facilities. Where there is a yellow marker, you must hand dig a five metre zone both sides of the marker to expose the underground line. In the case of other markings you must hand dig within a one metre zone.



	Electric
	Gas-Oil-Steam
	Communication CATV
	Water
	Sewer
	Temporary Survey Markings
	Proposed Excavation

PIPELINES

BC Hydro must receive a detailed proposal (to be reviewed and accepted) for any pipeline works proposed within 30m of BC Hydro works or ROW. Installation and operation of the pipeline must be in accordance with CAN/CSA-22.3 No. 6—Principles and Practices of Electrical Coordination between Pipelines and Electrical Supply Lines. Pipelines must not negatively impact BC Hydro's ability to access, maintain and operate its ROW and works. Permanent crossings within/across access roads and tracks may need to be provided.

It is best if non-metallic piping can be used for the installation within the ROW. A ground fault between a metal/ductile iron (DI) pipe and any BC Hydro works could present unsafe levels of fault transfer to the DI pipe.

In order to locate a buried pipeline sometimes Regulations call for a tracer wire to be installed (e.g. Gas/Oil pipelines). From an Electrical perspective a tracer wire is no different than a metallic pipeline in the ground. A viable alternative to a tracer wire, which poses safety and reliability issues when in proximity to a power line, is an Electronic ID Marker. There are recommended clearances (distance depends on power line voltage) needed to BC Hydro's works for maintenance and to prevent arcing to the pipeline (or tracer wire) due to a power line fault.

BC Hydro has found that for a 30kA median lightning current and an average soil resistivity in B.C. of 1000 ohm-m, the minimum separation distance to prevent arcing is 30metres. If BC Hydro is to reduce the minimum separation, a soil resistivity test will need to be performed at the specific location for which the calculations are being done. BC Hydro will consider a reduced separation if a technical analysis shows that it is feasible. This test analysis must be reviewed and signed by a Professional Engineer registered in the province of British Columbia and reviewed and accepted by BC Hydro.

BC Hydro understands that placing limitations such as a 30 metres separation in built-up areas is quite difficult, however, when performing a study the shielding effect of the buildings, trees, etc., can be considered, which can work in favour of reducing the separation. Also, soil conditions may be more favourable than the stated average soil resistivity. Unless a study is completed for the specific location BC Hydro requires a minimum of 30 metres separation. Non-compliance with this requirement may result in damage to pipelines and/or injury or death, for which BC Hydro cannot accept responsibility. For more information please contact the Properties help desk at properties.helpdesk@bchydro.com or 1 800 667 1517 or 604 623 3637.



DESIGNING AROUND BC HYDRO RIGHTS OF WAY

With effective planning and design, power line corridors can benefit land owners and create better, more aesthetically pleasing communities.

A ROW on private property creates opportunities for individual property owners to enjoy larger lot sizes with the potential for large gardens and outdoor spaces. The use of public ROW corridors for public amenities such as walking trails, playing fields and bicycle paths contributes to attractive communities.

It is important to conduct a thorough survey of the site and the surrounding area with a detailed analysis of the power line structures within view of the site before beginning design. In addition, it is useful to review the ROW agreement to clarify rights, responsibilities and restrictions.



It is important to create a harmony between density, alignment, orientation and landscaping in order to create an aesthetically appealing development.

The density of development can play a key role in screening views of the BC Hydro works. By placing non-residential buildings nearest to the works, views are screened from most public and residential areas.

When developing new subdivisions and communities, varying the alignment of streets and paths can reduce the number of views of BC Hydro's works, minimizing their impact and reducing the impression of a linear corridor.



Aligning homes between towers (as shown in photo on left) as opposed to right in front of a tower (as shown in photo on right) helps to reduce the visual impact of power lines.

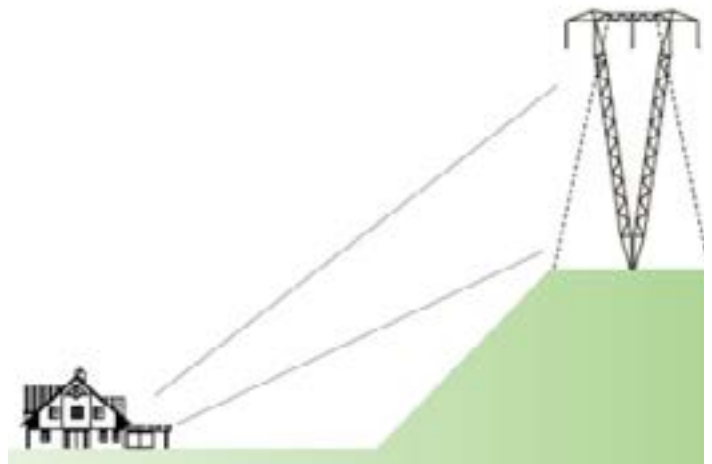
DID YOU KNOW?

Overhead power lines do not have an insulating coating on them. Some have weatherproofing, but this is not insulation.

Electricity travels at 300,000km per second (186,000 miles per second) and can flow through water.

Where towers are set in an elevated position and are viewed from lower ground, the scale and visual impact of the towers is emphasized. Conversely, where towers are viewed from an elevated position the visual impact is reduced

Towers set across the brow of a hill will be silhouetted against the sky and will appear more prominent than towers set in a similarly elevated position but with rising land or development behind them. Even subtle level changes across a development site can make a significant difference. If planning changes in elevation within the ROW, BC Hydro must be contacted as any reduction in the clearance between the conductor and ground can create a potential safety risk.



Towers are more prominent when placed against the skyline



Towers are less prominent when positioned with rising land or development in behind

Landscaping is one of the most effective methods to diffuse the views of BC Hydro's works while transforming the space within and adjacent to the ROW into an aesthetically pleasing amenity to homeowners. Layers of planting create a series of silhouettes into the distance, creating depth in the field of vision that helps to reduce the visual impact of the works.

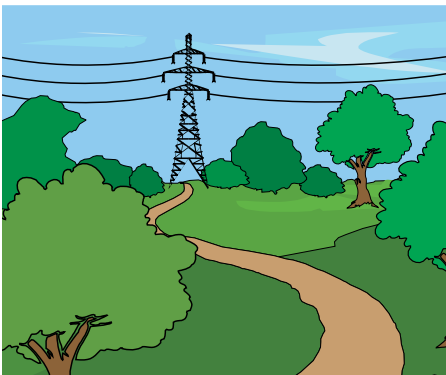


In this image, the visual impact of power lines is very strong, as little attention has been paid to varied orientation or the use of landscaping to 'hide' the towers.

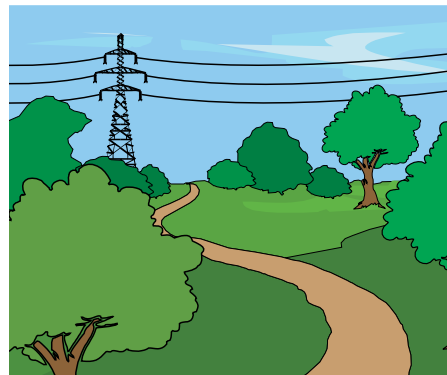


This image illustrates how screening and landscaping can diminish the visual impact of power lines in residential neighbourhoods.

Active recreation paths, roads, cycle paths and walkways may be successfully accommodated beneath high voltage overhead lines subject to BC Hydro's review and acceptance of the proposed plans. Design efforts should seek to orient the path or trail alignment at least six metres (20 feet) away from BC Hydro's works.



A path with an end point towards a transmission tower gives prominence to the tower.



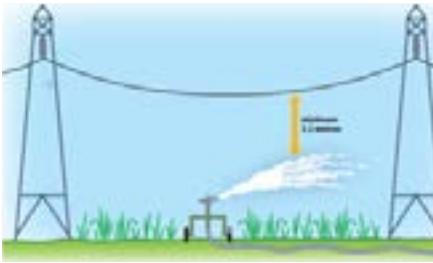
By altering the path, the visual effect of the tower is minimized.

A proposed park (within a development) within a ROW must not be dedicated but must remain land with a registered title in the Land Title Office. The area will be subject to BC Hydro's ROW, registered rights and conditions imposed by BC Hydro to protect those rights.

BC Hydro will review potential trails with respect to future access for maintenance. Design efforts should consider where there is a requirement for future access with maintenance equipment (such as large trucks or tracked machinery). BC Hydro reserves all rights for future rebuilding of access roads overtop of installed trails.

DID YOU KNOW?

A hose spraying a power line can have the same effect as grabbing the line with your hands. The following figures show the safe and unsafe methods of operating irrigation equipment near power lines.



A safe, low-angle irrigation equipment that maintains safe clearance between the water jet and the live wires.



An unsafe high-angle irrigation equipment that sprays water on or near the live wires.

BC HYDRO WORKS WITHIN ROAD ALLOWANCE

Many of BC Hydro's works are installed within road allowance. Proposed buildings should not encroach into the safety clearance zones required around existing utility conductors. The Canadian Electrical Code (CEC) (and local adoptions of the CEC), Canadian Standards Association (CSA) and WorksafeBC (WSBC) stipulate minimum clearances of power lines and equipment from buildings for safety and safe working clearances (Limits of Approach). Although the onus rests with the building architect and building Electrical Engineer of Record (EEOR) to ensure compliance with the various Codes, new building design and construction, BC Hydro would like to remind developers and property owners to ensure that the requirements of the CEC, CSA and WSBC are complied with through review by their project EEOR and, if appropriate, request the involvement of BC Hydro.

Public safety plays an important role when designing around BC Hydro's infrastructure. It affects not only the general public but the BC Hydro's maintenance staff as well.

UNDERGROUND(ING) BC HYDRO WORKS

Electric power can also be transmitted by underground power cables instead of overhead power lines. Underground cables take up less right-of-way than overhead lines, have lower visibility, and are less affected by bad weather. However, costs of insulated cable and excavation are much higher than overhead construction and faults in buried cables take longer to locate and repair. Underground lines are strictly limited by their thermal capacity, which permits less overload or re-rating than overhead lines.

RELOCATION BC HYDRO WORKS

If the Project Initiator, Developer or Property Owner wishes to relocate the existing power line or equipment or should the Proposed Use require alteration, modification or relocation and/or protection of BC Hydro's works the applicant will be required to enter into one or more relocation agreements with BC Hydro.

A request for alteration, modification, relocation and/or protection of BC Hydro's works is often a two-step process: firstly, a definition agreement determining the scope of the required work and secondly, an implementation agreement for the detailed design and construction of the work. Both of these agreements require the Applicant's signature and return to BC Hydro, together with the applicable prepayment. Neither the scope determination nor the detailed design and construction will be scheduled until BC Hydro receives the applicable signed agreement and prepayment. Upon completion of the required alteration, modification, relocation and/or protection work, the Applicant will be billed for the actual cost of such work (less the amount of any prepayment made by the Applicant). Please note that this process can take up to one year and, if applicable, outages are subject to availability.

In summary when you wish to work or place items within and/or cross a BC Hydro ROW (e.g. roads, parking, storage, fences, structures, operate machinery); discuss development on or adjacent to a ROW; subdivide a property with a Hydro ROW registered on Title or ask any general BC Hydro Properties questions you may have, please contact BC Hydro Property Rights Services at properties.helpdesk@bchydro.com or 1 800 667 1517 or 604 623 3637.

CONSTRUCTION ADJACENT TO 500kV TRANSMISSION LINES

Proposed construction of buildings at the ROW edge triggers the need for further study (and potential redesign) to manage electric field impacts, including the risk of induction shocks. Electrical and safety issues may arise from the proposed development and it is essential that the land owner or developer retain a professional consultant with expertise in calculating electric fields and recommending mitigation strategies during construction and after occupancy. It is the developer's responsibility to ensure that no part of the building is exposed to electric fields in excess of 5 kV/m (IEEE Standard C95.6-2002) including outer walls, balconies and roof. Buildings are not permitted in the ROW.

In an effort to aid developers, BC Hydro has produced a technical guideline (Engineering Standard ES 41-K 3.3.1) which outlines the minimum setback requirements for developments adjacent to 500 kV ROWs. If followed, the developer may not need to engage a professional consultant as previously described.

For further information or to obtain a copy of ES 41-K 3.3.1 please contact BC Hydro Property Rights Services at properties.helpdesk@bchydro.com.

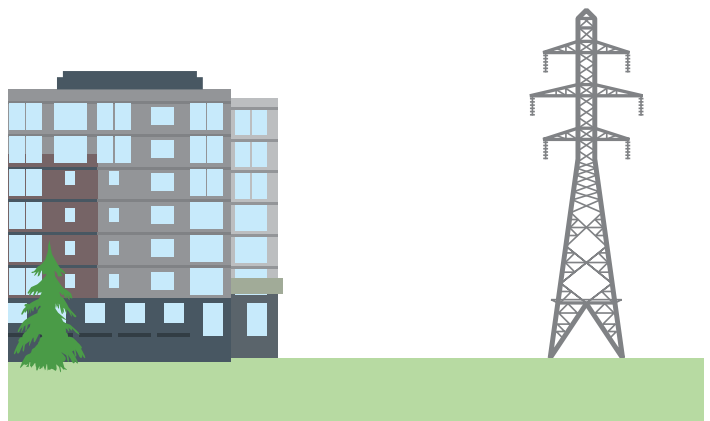
All proposed electrical services within a ROW should be designed, where possible, perpendicular to the power line conductors.

BC Hydro's above comments are not with respect to the overall project design. Safety requirements of the overall project remain the developer's responsibility to assess and address. All proposed uses within a power line corridor shall be submitted to BC Hydro's Property Rights Services group for review and comment.

Developers need to be aware of the current electrical standards that need to be complied with when new construction is planned in proximity to BC Hydro ROWs and/or electrical works.



Mixed Use Development, Surrey



A tall building located at the edge of the ROW poses a high risk of induction as the upper levels of the building are closer to the power line



An alternative approach to high rise development that allows for increased density but mitigates induced currents

REGIONAL BC HYDRO PROPERTIES' OFFICES

PROVINCIAL HELP DESK

BC Hydro Properties Division
Property Rights Services
12th Floor, 333 Dunsmuir Street
Vancouver, B.C. V6B 5R3
Toll Free: 1.800.667.1517
Fax: 604-543-1540
Email: properties.helpdesk@bchydro.com

PROPERTIES—LOWER MAINLAND

(including Sunshine Coast, north to Bridge River and east to Boston Bar)

2nd Floor, 8475 128th Street
Surrey, B.C. V3W 0G1
Toll Free: 1.800.667.1517 Ext 1
Fax: 604.543.1540
Email: properties.helpdesk@bchydro.com

PROPERTIES—NORTH

Including 100 Mile House North to the Yukon border

PO Box 6500, 3333 22nd Avenue
Prince George, B.C. V2N 2K4
Toll Free: 1.800.667.1517 Ext 3
Fax: 250-561-4965
Email: properties.helpdesk@bchydro.com

PROPERTIES—RESERVOIRS (GENERATION)

12th Floor, 6911 Southpoint Drive
Burnaby, B.C. V3N 4X8
Toll Free: 1.800.667.1517 Ext 5
Fax: 604.528.2529
Email: properties.helpdesk@bchydro.com

PROPERTIES—SOUTHERN INTERIOR

(South of 100 Mile House to USA border)

1401 Kalamalka Lake Road
Vernon, B.C. V1T 8S4
Toll Free: 1.800.667.1517 Ext 2
Fax: 250-541-2602
Email: properties.helpdesk@bchydro.com

PROPERTIES—VANCOUVER ISLAND AND GULF ISLANDS

PO Box 1500, 400 Madsen Road
Nanaimo, B.C. V9R 5M3
Toll Free: 1.800.667.1517 Ext 4
Fax: 250-755-7190
Email: properties.helpdesk@bchydro.com

PROPERTIES—ABORIGINAL LANDS SERVICES

12th Floor, 333 Dunsmuir Street
Vancouver, B.C. V6B 5R3
Toll Free: 1.800.667.1517
Fax: 604.623.3951
Email: properties.helpdesk@bchydro.com

PROPOSAL FOR COMPATIBLE USE OF A BC HYDRO RIGHT OF WAY

For more information contact 1 800 667 1517 or properties.helpdesk@bchydro.com or you may apply online at <https://www.bchydro.com/energy-in-bc/our-system/right-of-way-management/application-form.html>

No application fee	\$250 + GST application fee	Other fees
For individual landowner requesting personal use of a BC Hydro right-of-way	For BC Hydro's review of and signature on a subdivision plan to be registered in the Land Title Office	Other fees may apply depending on your proposal (examples: granting of a right of way or easement, relocation of Hydro's works, documentation/rental fees, any technical reviews that may be required).

Applicant	Owner (complete only if you are not the owner)
Company/Contact Name	Company/Contact Name
Address, City, Province, Postal Code	Address, City, Province, Postal Code
Phone:	Phone:
Email:	Email:
Fax:	Fax:
If you are not the owner, do you have the owner's consent for the proposed right-of-way activity?	

Proposal for compatible use within the BC Hydro right-of-way (examples: driveway, road crossing, parking lot, storage, etc. with specifics)
Provide full details including a map or drawing of your proposal in relation to the BC Hydro right-of-boundaries. Please plot the location of any BC Hydro access roads, poles, towers or overhead lines in the immediate vicinity (include pole and tower numbers if available). Attach any supporting materials to this proposal.

Address/location of proposal area
Street Address:
City:
Area:

Legal description of property(ies) affected (include a current title search if available)
Parcel identifier:
Legal Description:

Include transmission line details (if available)	
Circuit Number(s):	Structure Numbers: