

FortisBC Inc.
2005 Revenue Requirements Application,
2005-2024 System Development Plan and 2005 Resource Plan

1.0 General Information.**Q1.1 Please list your political Donations (Federal and Provincial), made on behalf of Fortis in the years 2003 and 2004. Please itemize.**

A1.1 FortisBC's political donations in 2003 and 2004 were \$6,750 and \$1,900 respectively to the BC Liberal Party. Donations for prior years are not readily available. No political donations are included in the forecast for 2005.

Q1.2 Please list all Scholarships and Scholarship foundation provided by FortisBC in their service area. Please itemize.

A1.2 Please see the table below.

School	Area	2003 Scholarship Recipients				2004	
		First Recipient	Second Recipient	Scholarship Recipient			
Boundary Central Secondary School	Midway, BC	Dennis	Senft	Shawna	McNeil	Lincoln	Allen
J.L. Crowe Secondary School	Trail, BC	Michelle	Chave	Amanda	Broman	Aaron	Bressanutti
Mt. Sentinel High School	South Slokan, BC	Devin	Maltais	Lindsey	Niminiken	Luke	Kennedy
Stanley Humphries Secondary School	Castlegar, BC	Janice	Evdokimoff	Stephanie	Tassone	James	MacDermid
Rossland Secondary School	Rossland, BC	Katie	Van Der Ham	Steven	Shannon	Darrel	Ross
Crawford Bay Secondary School	Crawford Bay, BC	Bill	Hoyle	Levi	Sheppard	No student met criteria	
JV Humphries School	Kaslo, BC	Vicki	Hughes	Stephanie	Brisske	No student met criteria	
L.V. Rogers Secondary School	Nelson, BC	Lee	Wasilenko	Callum	Milne	Nils	Anderson
Prince Charles Secondary School	Creston, BC	Karissa	Grout	Jasmine	Venditti	No student met criteria	
Salmo Secondary School	Salmo, BC	Jennifer	Latham	Sara	Bueckert	No student met criteria	
Grand Forks Secondary School	Grand Forks, BC	Haley	Rezansoff	Joey	Kraftchick	Justin	Thompson
Similkameen Secondary School	Keremeos, BC	Corina	Schreifels	Matthew	Lougheed	Darcy	MacLeod
Osoyoos Secondary School	Osoyoos, BC	Leigh	Ferreira	Chantal	Russon	No student met criteria	
Kelowna Christian School	Kelowna, BC	Amanda	Vis	Ruth	Soames	No student met criteria	
Immaculata Regional High School	Kelowna, BC	Kyla	Jones	Michelle	Metheral	No student met criteria	
Princeton Secondary School	Princeton, BC	Christopher	Newman	Laura	Ayling	No student met criteria	
Okanagan Mission Secondary School	Kelowna, BC	Allison	Rasmussen	Erin	Chmiel	Aaron	Edis
Kelowna Secondary School	Kelowna, BC	Amaris	Poznikoff	Danielle	Robinson	Jim	Fisher
Summerland Secondary School	Summerland, BC	Sheena	Bell	Jennifer	Eden	David	Goddard
Rutland Senior Secondary School	Kelowna, BC	Serene	Yew	Sharleen	Saran	Daryl	Beaton
Southern Okanagan Secondary School	Oliver, BC	Ryan	Havisto	Jamie	Morin	Xavier	Veintimilla
Penticton Secondary School	Penticton, BC	Michelle	Royer	Brittany	Bucusu	Amber	Pearson
The Glenfir School	Summerland, BC	Spencer	Kelly	Joseph	Patton	Daniel	Mulgrew

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Q1.3 What is the extend of Community involvement or Sponsorship for Community related activities provided by FortisBC?

A1.3 FortisBC's community investment for 2003 included charitable donations (\$75,000) for various local community initiatives in the Company's service territory focused on education, the environment, safety and the community; as well as event sponsorship (\$22,500) for local events supporting the above four pillars, and \$16,000 to donate a tree to each of the victims of the Okanagan fires. In 2004, the Company continued to support the community, education, the environment and safety, through charitable donations (\$74,400) and event sponsorship (\$3,400). These amounts are summarized in the tables below.

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2003 Charitable Donations

Recipient	Amount	Major Recipients
Employee Volunteerism	3,000.00	
Health & Safety	5,000.00	Crimestoppers (\$1000), Rossland Fire/Rescue (\$400), etc.
Economic Development	24,000.00	BC Chamber of Commerce (\$5200), Castlegar Chamber of Commerce (\$5000), Kelowna Chamber of Commerce (\$1000), etc.
Education	16,500.00	Central Okanagan Science Fair (\$5000), Early Literacy Project (\$10,000)
Environment	16,500.00	Lower Kootenay First Nation - Wetlands (\$5000), Return of the Peregrins (\$10,000)
Other Community Organizations	10,000.00	Rossland Historical Museum (\$5000), Summerland Rodeo (\$500), BC Disability Games (\$1500), etc.
TOTAL	<u>75,000.00</u>	

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 2003 Event Sponsorship

Recipient	Amount	Major Recipients
Employee Volunteerism	500.00	
Economic Development	20,700.00	Okanagan Mainliner Municipal Association (\$2000), Trail Chamber of Commerce (\$700), Union of BC (\$3500)
Other Community Organizations	1,300.00	BC Cancer Fundraiser (\$1000)
TOTAL	22,500.00	

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 2003 Donations

Recipient	Amount
Okanagan Fires - Tree donation to the victims	16,000.00
TOTAL	16,000.00

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2004 Charitable Donations

Recipient	Amount	Major Recipients
Employee Volunteerism	3,400.00	
Habitat	30,000.00	BC Wildlife Accident Prevention Program (\$7500), Selkirk College Festival of Trees (\$1000)
Safety	1,100.00	Crimestoppers (\$1000), STARs (\$300), etc.
Economic Development	16,500.00	Urban Development Institute (\$1500), Kootenay Lake Chamber of Commerce (\$500), Creston Chamber of Commerce (\$400), etc.
Aboriginal	10,000.00	Okanagan Nation Alliance (\$1500)
Education	11,000.00	Boundary Secondary School (\$500), Princeton Secondary School (\$500), Summerland Secondary School (\$500), etc.
Other Community Organizations	2,400.00	Generation Society Sanctuary (\$1900)
TOTAL	<u>74,400.00</u>	

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2004 Event Sponsorship

Recipient	Amount	Major Recipients
Employee Volunteerism	1,800.00	
Economic Development	1,000.00	Regional District of Central Okanagan (\$1000)
Environment	600.00	Wildest Festival for Youth - Environment (\$600)
TOTAL	<u>3,400.00</u>	

Q1.4 I fully realize the following is very difficult to predict, however, please give me a estimate of what you foresee in term of Rate increases of Residential Rates in the next 10 Years in addition the Cost of Living Index.

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A1.4 Rate increases to 2010 are provided in the response to BCUC IR1 Q92.3. While we do not have the information available to provide a forecast after that date, it is reasonable to expect increases somewhat in line with inflation. Inflation is expected to average 2 percent.

Q1.5 What is the estimated total cost for Fortis in order to bring this Application forward, including all legal expenses and costs related to Workshops, Pre-Hearings and Hearings.

A1.5 The estimated cost of this Application is \$350,000, as shown at Volume 1, Tab 6, page 13. This does not include the wages and salaries of employees who prepared the Application and are involved in the workshop, IR, technical committee and other hearing related activities.

2.0 Reference: Vol. 1 - Tab 9 - page 55
Three questions are in consideration of Environmental and Safety Concerns.

Q2.1 In reference to PCB's, please provide a Hazardous Material data sheet and circulate to all Intervenors.

A2.1 PCB does not represent an acute hazard to people but may be a persistent organic pollutant as established by United Nations. The sheet requested follows.

Hazardous material Information From Environment Canada & Health Canada:

PCB (Chemical Abstract Service Number: 1336-36-3)

Polychlorinated biphenyls, commonly known as chlorobiphenyls or PCBs, are industrial chemicals that were synthesized and commercialized in North America in 1929. They were used in the manufacturing of electrical equipment, heat exchangers, hydraulic

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systems, and several other specialized applications up to the late 1970s. They were never manufactured in Canada but were widely used in this country.

PCBs are very persistent both in the environment and in living tissue. The most obvious signs of environmental harm caused by PCBs are in aquatic ecosystems and in species that eat primarily aquatic organisms. Because of concern for the environmental and health effects of PCBs, the Canadian government took action to eliminate PCBs from Canada. The import, manufacture, and sale (for re-use) of PCBs were made illegal in Canada in 1977 and release to the environment of PCBs was made illegal in 1985.

Physical and Chemical Properties.

PCBs are highly stable under most environmental conditions. However, individual PCBs differ widely in terms of their vapour pressures, water solubilities and susceptibility to degradation, which influence their environmental fate (Coulston and Kolbye, 1994).

These differences in physicochemical behaviours are determined by the number and pattern of chlorine substitutions in the individual congeners (Mackay et al., 1992). Some fundamental chemical properties of PCB congener groups are summarized in Table 1. Pure PCB congeners are colourless compounds. However, PCB mixtures are usually light-coloured liquids that feel like thick, oily molasses. Some PCB compounds form sticky, yellow liquids or a brittle gum ranging in colour from amber to black. Their density is higher than 1.0 due to chlorine atoms in the molecule and therefore they sink in water.

PCBs are soluble in most organic solvents but are almost insoluble in water as demonstrated by their relatively high log K_{OW} (octanol/water partition coefficient) values. Generally, the solubility in water decreases as the number of chlorine substitutions increases. Similarly, the vapour pressure of individual PCBs decreases as chlorine substitutions increase. The environmental fate and behaviour of PCBs is largely governed by the degree of chlorination.

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Health Risks of Exposure to PCBs

Scientists do not know much about the long-term impact of PCBs on human health. Most of what is known about the health risks of PCBs is based on observations of people who were exposed briefly to high levels as a result of accidents or job-related activities.

This kind of exposure is known to cause the following conditions:

- A severe form of acne called chloracne
- Swelling of the upper eyelids
- Numbness in the arms and/or legs
- Weakness
- Discolouring of the nails and skin
- Muscle spasms
- Chronic bronchitis
- Problems with the nervous system

There have also been suggestions that workplace exposure to high levels of PCBs over a long period of time may increase a worker's chance of getting cancer - especially cancer of the liver and kidney. However, there is no proof yet of a definite link between PCBs and cancer.

Fortunately, most Canadians are not exposed to high levels of PCBs. For most, exposure to PCBs is limited to the very low levels found in food and the environment. These levels are not likely to cause health problems.

There may be health risks for specific groups of people who eat large amounts of sport fish or game contaminated by PCBs. These higher risk groups include Aboriginal peoples and the families of people who hunt and fish for food.

More research is needed before scientists can say exactly how exposure to low levels of PCBs will affect human health over the long term.

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Government Action on PCBs

Health Canada and Environment Canada have taken strong and effective steps to control every aspect of PCBs, including how they are used, stored and destroyed.

Source Health Canada

link -> <http://www.hc-sc.gc.ca/english/iyh/environment/pcb.html>

Environment Canada

Link -> http://www.ecoinfo.ec.gc.ca/env_ind/region/cormorant/pcbs_e.cfm

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Q2.2 Fortis states that they have not inventoried all oil filled distribution apparatus in regard to PCB concentration. Fortis is in control (directly or indirectly) since 1987 (reference; Tab 5, page4 - Expert Evidence). Why does it take so many Years to do inventory and to correct such a volatile situation ?

A2.2 FortisBC does not order transformers or other equipment that are PCB oil filled. The Company has been dealing with the unwanted PCB issue since PCBs became a concern in the late 1970's. Past PCB programs addressed equipment with high volume mineral oil capacity situated in sensitive areas. The Company is proceeding to the next level of PCB management by completing an inventory of all remaining in-service oil filled electrical equipment for management purposes.

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3.0 Reference: Vol. 1 - Tab 9 - page 15

Q3.1 In reference to Oil Circuit Breakers, your Document indicates that these Breakers contain Oil, which is occasionally spilled. Of what composition are the said Oils periodically mentioned throughout all your Documentation ?

A3.1 The oil used in oil circuit breakers and transformers is an insulating mineral oil (eg Voltesso or Univolt) distilled from naturally occurring crude petroleum oils. Transformer oil is not a controlled product under the Workplace Hazardous Material Information System. The NFPA (risk) Ratings are: Health 0; Flammability 1; Reactivity 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme risk).

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4.0 Reference: Vol. 1 - Tab 9 - page 34

This in reference to Line 32 in general and it's Conductor specifically.

Q4.1 When was this Conductor Manufactured and at what time was it installed and energized ?

A4.1 The conductor on 32 Line was installed and energized in 1951.

Q4.2 What is the normal life expectancy of this conductor ?

A4.2 The life expectancy of an electrical conductor will be influenced by many factors including mechanical and electrical loading, weather, line design and so on. Utilities generally assume a life expectancy in excess of 50 years.

Q4.3 I would compare "sag" with stretch or elongation. In your professional opinion, has this impaired the capacity of the Transmission Line ?

A4.3 No, the capacity of the transmission line has not been impaired by conductor stretch. The change in sag in the conductor from installation to final sag is included in the design criteria for lines. The final sag (after aging) is used to determine the final design criteria for the line. The issues of the excessive sag in some locations would be due to deterioration of poles, cross arms and anchors creating movement of the support structures, not conductor stretch.

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5.0 Reference: Vol. 1 - Tab 9 - page 39

Bulk Oil Breaker Replacement Program

Q5.1 Your Document reads: “and some breakers are leaking oil that will require lengthy and costly outages to repair”. Please define these Oil leaks as to quantity and number and occurrences.

A5.1 The primary drivers for replacing the bulk oil breakers are deteriorating contacts, oil condition, and lack of replacement parts plus failing compressors.

Five of the 14 bulk oil breakers in the system have been identified with minimal leaks, commonly referred to in the industry as oil weeps. There is no significant volume of oil involved in any of the breakers. This is an indication of seals breaking down and need to be replaced before a loss of oil creates a failure of the breaker. While these small oil leaks are not a failure today they will lead to failure if not repaired before they become significant.

Crawford Bay 32 Line OCB	minimal leaks
Hedley 43AL OCB	leaking bushings and deteriorated bushings.
Huth 45 Line OCB	minimal leaks
Pine Street 44 Line OCB	minimal leaks
Westminster 45 Line OCB	leaking at the bushings

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6.0 Reference: Vol. 1 - Tab 8 - page 8

Line Maintenance

Q6.1 Your Document laments about facing the challenge of an aging workforce in the Utility Trades and that approx. 30 % of the Company's line forces will be eligible for retirement in the next five Years. When did Fortis become aware of this situation ?

A6.1 FortisBC has historically had a very stable, long term employee base. Our aging workforce aligns with what our competitors are also facing. We have a number of employees who are eligible for unreduced pension options in the next five years. We have recruited apprentices both as Power Line Technicians and Electricians two years ago. We are currently recruiting additional apprentices to ensure that our future workforce is also stable. We have expanded our search for these employees into neighbouring provinces and have been successful to date in ensuring we are attracting the right people into FortisBC. We are aware of the situation and feel that we are responding to our needs.

Q6.2 Why did Fortis not take appropriate steps in starting in Year 1987 to mitigate the attrition of the workforce ?

A6.2 Our organization has successfully been able to attract and retain trades people. As stated above, we have actively been involved in hiring apprentices to ensure that their completion dates align with our potential attrition.