

Wildfire Response Agreement | Pricing Model

Risk-Based Pricing Model

The Wildfire Management Branch enters into wildfire response agreements with:

- owners of forested private land;
- federal agencies; and
- public and private sector corporations operating under a Crown lease.



In these agreements, the Province agrees to provide wildfire response services on behalf of the landowner or leaseholder in exchange for an annual fee.

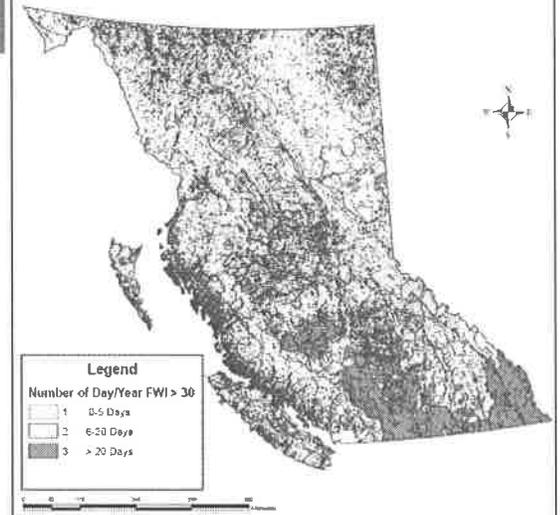
Annual fees are transparent, consistently calculated, and assessed based on varying degrees of risk.

Annual Fee Determination (a 6 step process)

Step 1: Total area in each Fire Weather Index (FWI) Zone is determined.

FWI Zone	Total Land Area (in Hectares) on which the Ministry Fights Fires	Percent of Total Area
1	56,230,488	68%
2	17,307,717	21%
3	9,297,834	11%
TOTAL	82,836,039	100%

British Columbia FWI Classes



Step 2: Average hectares burned annually in each FWI Zone are determined using 10 years of fire season data. Risk of burning (inherent risk) is also calculated for each FWI Zone.

FWI Zone 1				FWI Zone 2				FWI Zone 3			
# of fires (10 year avg)	Hectares burned (10 year avg)	Percent of hectares burned (hectares burned in zone / total hectares burned)	Inherent risk of burning (hectares burned in zone / total area in zone)	# of fires (10 year avg)	Hectares burned (10 year avg)	Percent of hectares burned (hectares burned in zone / total hectares burned)	Inherent risk of burning (hectares burned in zone / total area in zone)	# of fires (10 year avg)	Hectares burned (10 year avg)	Percent of hectares burned (hectares burned in zone / total hectares burned)	Inherent risk of burning (hectares burned in zone / total area in zone)
605	57,194	45%	0.10%	657	33,369	26%	0.19%	648	36,198	29%	0.39%

Step 3: Annual provincial fire suppression cost is averaged over 10 years.

Program Costs Averaged Over 10 Years = \$227.7M per year
(Breakdown of \$57.6M Preparedness + \$170.1M Direct Fire)

Land within FWI Zone 3 has a higher inherent risk than Zones 1 and 2 based on the ratio of hectares burned over the past 10 years in relation to total area within the zone.

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Step 4: Average costs are proportionally allocated to each FWI Zone.

Preparedness Costs
(costs for managing/preparing for wildfires)

Allocated based on the relative **size (percent of total area)** of each FWI Zone as determined in Step 1.

Direct Fire Costs
(costs for suppressing wildfires as they occur)

Allocated based on the **percent of hectares burned** in each FWI Zone as calculated in Step 2.

Costs allocated to...

Zone 1: [Preparedness = $\$57.6\text{M} * 68\% = \39.2M] + [Direct Fire = $\$170.1\text{M} * 45\% = \76.5M] = **$\$115.7\text{M}$**

Zone 2: [Preparedness = $\$57.6\text{M} * 21\% = \12.1M] + [Direct Fire = $\$170.1\text{M} * 26\% = \44.2M] = **$\$56.3\text{M}$**

Zone 3: [Preparedness = $\$57.6\text{M} * 11\% = \6.3M] + [Direct Fire = $\$170.1\text{M} * 29\% = \49.3M] = **$\$55.6\text{M}$**

Step 5: Wildfire Response Rate (i.e. a core per-hectare rate) for each FWI Zone is determined.

Rate = (Allocated Cost / FWI Zone Area)

Zone 1's Wildfire Response Rate: $\$115.7\text{M} / 56,230,488$ hectares = **$\$2.06/\text{hectare}$**

Zone 2's Wildfire Response Rate: $\$56.3\text{M} / 17,307,707$ hectares = **$\$3.25/\text{hectare}$**

Zone 3's Wildfire Response Rate: $\$55.6\text{M} / 9,297,834$ hectares = **$\$5.98/\text{hectare}$**

Step 6: The Wildfire Response Rate is refined to account for 3 factors...

1) The Fire Cause Factor adjusts the Wildfire Response Rate based on the historic average proportion of human-caused fires in each zone: Zone 1 = 50% | Zone 2 = 30% | Zone 3 = 40%

Zone 1: $\$2.06/\text{hectare} * 50\% = \mathbf{\$1.03/\text{hectare}}$

Zone 2: $\$3.25/\text{hectare} * 30\% = \mathbf{\$0.98/\text{hectare}}$

Zone 3: $\$5.98/\text{hectare} * 40\% = \mathbf{\$2.39/\text{hectare}}$

2) The Risk Adjustment Factor categorizes clients as low, moderate, high or very high risk based on:

- Size of area under agreement
- Proximity of the land to urban areas
- Type of activity being conducted on the land, specifically industrial activities
- Number of incidents per year and the total area burned
- Location in the province with respect to FWI Zones

The Wildfire Management Branch works with each client to determine an appropriate Risk Adjustment Factor and Resource Discount Factor to be applied to their Wildfire Response Rate.

3) The Resource Discount Factor is applied based on:

- Wildfire suppression resources supplied by the landowner
- Number of fires or fire incidences on the land over the previous five years

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Sample Annual Fee Calculation:

ABC Forest and Timber is a hypothetical client with 5000 hectares of land area that is distributed across each of the FWI Zones. The company's risk adjustment factor was determined as being 90%, with a 40% resource discount factor.

	ABC Forest and Timber's # of hectares in each zone	Wildfire Response Rate	Fire Cause Factor	Risk Adjustment Factor	Resource Discount Factor	Annual Fee
FWI Zone 1	1550 ha	* \$2.06/ha	* 50%	* 90%	* 40%	= \$574.74
FWI Zone 2	1450 ha	* \$3.25/ha	* 30%	* 90%	* 40%	= \$508.95
FWI Zone 3	2000 ha	* \$5.98/ha	* 40%	* 90%	* 40%	= \$1722.24
Total	5000 ha					\$2805.93

Note: The minimum annual fee is \$700.



Wildfire Response Agreement

PROVINCE FILE NO: 950-20/82913	
AGREEMENT DESCRIPTION: Fire Response Services Provided in British Columbia by the Province	

WHEREAS:

- A. Canada is responsible for Emergency Management services, including wildfires, on Lands set apart by Her Majesty for the use and benefit of Indian bands;
- B. The Province, through the BC Wildfire Service has significant fire management expertise and fire suppression responsibilities on provincial Crown lands and other private lands, and has therefore developed significant infrastructure and response resources to prevent, detect, control and extinguish wildfires;
- C. Canada wishes the Province to provide fire response and fire prevention, in addition to those provided by local governments and other agencies, to protect its lands and assets as well as key public environmental values;
- D. The Parties wish to enter into this Wildfire Response Agreement that constitutes a cost sharing agreement for the purpose of Section 28 of the BC Wildfire Regulation; and
- E. Each Party acknowledges the contributions of the other in preventing and detecting wildfires and wishes to work co-operatively to meet common fire prevention goals.

NOW THEREFORE, the Parties agree as follows:

DEFINITIONS

In this document, the following words have the following meanings, unless the context dictates otherwise:

- a) **“Act”** means the [Wildfire Act](#) (British Columbia) as it may be amended or replaced from time to time;
- b) **“Agreement”** means the agreement between the Parties as set out herein;
- c) **“Amending Document”** means a written document signed by both Parties amending the terms of this Agreement;
- d) **“Annual Fee”** means the fee paid by Canada to the Province at the beginning of each Year for the Services;
- e) **“Business Day”** means a day, other than a Saturday, Sunday or statutory holiday, on which Provincial government offices are open for normal business in British Columbia;
- f) **“Emergency Management”** means the prevention and mitigation of, preparedness for, response to and recovery from emergencies;
- g) **“Fire”** means:
 - i. an unplanned fire occurring on forest or grass lands, burning forest vegetation, trees, grass, brush, heath, scrub, peat lands (wildfire); or

- ii. an open fire set in accordance with Part 4 of the Wildfire Regulation which spreads beyond the area authorized for burning (wildfire); or
 - iii. a fire which does not spread to forest or range lands, or beyond the area authorized for burning if set under Regulation, but is now not in compliance with the Regulation (nuisance fire);
- h) **"Fire Prevention"** means the activities directed at reducing fire occurrence; including public education, law enforcement, personal contact and reduction of Fire;
 - i) **"Fire Response"** means all activities associated with responding to a Fire with appropriate Resources following the discovery or receipt of a report of a Fire;
 - j) **"Indian Act"** means the *Indian Act*, R.S.C. 1985, c.1-5;
 - k) **"Lands"** means those lands within a "reserve", as that term is defined in the *Indian Act*, located within the Province of British Columbia;
 - l) **"Ministry Representative"** means the Ministry of Forests, Lands and Natural Resource Operations staff person appointed, or such other person as the Province may substitute at any time and immediately notify Canada in writing, to serve as the primary contact between the Province and Canada in connection with this Agreement;
 - m) **"Regulation"** means the [Wildfire Regulation](#) (British Columbia) as it may be amended or replaced from time to time;
 - n) **"Resources"** means the personnel and equipment available, or potentially available, for assignment to incidents or Fires;
 - o) **"Services"** means the Fire Response services provided by the Province on or related to the Lands pursuant to this Agreement;
 - p) **"Year"** means the twelve-month period from April 1st to March 31st.

SERVICES

- 1.01 When a Fire is discovered by or made known to the Province and threatens or has the potential to threaten the Lands, or is burning on the Lands, the Province will use its best efforts in accordance with Sections 8 and 9 of the Act to provide the Services to protect the Lands to the same extent and priority as on provincial Crown lands or other lands within the jurisdiction of the Province, subject to the purposes of this Agreement, standard priority procedures and availability of Resources within British Columbia.
- 1.02 At its own expense, the Province will recruit Resources within or outside British Columbia as deemed necessary by it to provide the Services.
- 1.03 During periods of highly vigorous or extreme fire behaviour, or when there is high current or forecasted demand on provincial Resources, the Province will prioritize the allocation, positioning and dispatch of Resources in order to protect public safety and critical infrastructure.
- 1.04 On request of Canada, the Province will provide supporting information regarding Fires affecting or threatening the Lands and the actions taken by the Province.
- 1.05 Once a Fire referred to in Section 2.01 above is extinguished, the Province, in agreement with Canada, will rehabilitate land damaged by fire control in accordance with Sections 15 and 17 of the Regulation. Additional rehabilitation services can be agreed to by the Parties as referred to in Section 2.08 and 4.04 of this Agreement, on any of the Lands damaged by the Services provided by the Province under this Agreement.
- 1.06 During periods when the risk of a Fire starting and spreading is minimal (typically November to February inclusive) it is understood by the Parties that the Province has limited Resources available to respond to Fires.

- 1.07 The Province is not mandated nor does it have the skills, equipment or training to respond to non-wildfires such as those involving structures, vehicles, landfills, hazardous materials and coal or coal seams. The Province may respond at a safe distance from non-wildfires to protect the forest and range resources.
- 1.08 The Province may provide Canada with additional services at Canada's request.
- 1.09 The Province and Canada will meet at least once per Year to review the Year's activity.

OBLIGATIONS OF CANADA

- 1.10 Canada will assist and co-operate with the Province in any investigations including fire origin and cause investigations, settlements and claims related to this Agreement.
- 1.11 Canada will use **all reasonable** efforts to encourage its officers, directors, employees, sub-contractors and agents to provide the assistance described in Section 3.01 of this Agreement.
- 1.12 Canada or its agent will, upon execution of this Agreement, provide the Province with access to maps of the Lands in digital form (or other such format as agreed upon by the Parties).
- 1.13 Before April 1st of any subsequent Year, Canada or its agent will provide the Province with access to any revised maps of the Lands in digital form (or other such format as agreed upon by the Parties.) The Province will, using the revised maps of the Lands, determine the extent of any changes to the Lands whereby the Province may prepare an Amending Document.

ANNUAL FEE FOR PROVINCIAL WILDFIRE SERVICES

- 1.14 In consideration of the Province providing the Services for the Lands, Canada will pay to the Province an Annual Fee equal to \$2,030,000 for the Lands as specified in this Agreement.
- 1.15 Canada will pay the Annual Fee to the Province in advance of the Services rendered as follows:
 - a) for the first Year of this Agreement, on execution of this Agreement or April 1st whichever is the later; and,
 - b) for each subsequent Year, within 30 days of transmission of the invoice.
- 1.16 The Annual Fee under Section 4.01 of this Agreement represents the total and final amount owing from Canada to the Province for the Services provided in each Year, regardless of the number, cause or origin of Fires that occur on the Lands, provided Canada or its officers, directors, employees, agents or subcontractors did not wilfully cause or contribute to the start or spread of a Fire through its own acts or omissions. In the event that Canada or its officers, directors, employees, agents or subcontractors, through their acts or omissions did wilfully cause or contribute to the start or spread of a Fire, the Province shall be entitled to seek administrative penalties and/or damages to Crown resources from Canada in accordance with Section 27 of the *Act*.
- 1.17 Where any additional services are provided by the Province at Canada's request under Section 2.08 of this Agreement, the Province and Canada will agree on the services and fees for the additional works and Canada will compensate the Province for each individual project at the completion of the project.

MISCELLANEOUS

- 1.18 No change to this Agreement is effective unless the change is made in the form of an Amending Document.
- 1.19 Each Schedule attached to this Agreement forms an integral part of this Agreement as if set out in length in the body of this Agreement.
- 1.20 **This Agreement shall be binding upon and shall enure to the benefit of the Province and Canada and their respective successors and assigns.**
- 1.21 **Any notice or document contemplated by this Agreement, to be effective, must be in writing and delivered as follows:**

- a) hand delivered to the Party or the specified Party representative, in which case it will be deemed to be received on the day of its delivery; or
 - b) by prepaid post to the Party's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing; or
 - c) delivered by courier service to the Party's address specified on the first page of this Agreement, in which case it will be deemed received on the fifth Business Day after collection by the courier service; or
 - d) by facsimile or electronic transmission to the specified facsimile number or email address on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day.
- 1.22 Nothing in this Agreement is to be construed as interfering with or fettering the exercise of discretion of any government decision maker.
- 1.23 Time is of the essence in this Agreement.
- 1.24 This Agreement will be governed by and construed in accordance with the laws of British Columbia.



Schedule A Annual Fee

1. The Annual Fee includes those costs associated with the entire spread of Fires both on and off the Lands.
2. The Annual Fee is calculated using the following parameters:

	Area in Each Zone (ha)		Wildfire Response Rate		Fire Cause Factor		Risk Adjustment Factor		Resource Discount Factor		Annual Fee
Zone 1	118,043	*	\$4.45/ha	*	100%	*	110%	*	100%	=	\$580,000
Zone 2	65,127	*	\$3.83/ha	*	85%	*	110%	*	100%	=	\$230,000
Zone 3	178,449	*	\$6.56/ha	*	95%	*	110%	*	100%	=	\$1,220,000
Total											\$2,030,000



Ministry of
Forests, Lands and
Natural Resource Operations

Schedule B

Digital Data Limited Use Agreement

Subject to the *Freedom of Information and Protection of Privacy Act*, Canada or its agent agrees to share the digital data identified in this Agreement with the Province for the ongoing purpose of implementing the Wildfire Response Agreement between Canada and the Province.

The provision of the digital data is subject to the following conditions:

1. Supplied data not in the public domain is provided without warranty and is the sole and exclusive property of Canada or its agent. The Province and contractors operating on behalf of the Province do not acquire any right, title or interest in or to the data or any portion of it or to any intellectual property or other proprietary rights related to it.
2. The data obtained from Canada or its agent will be used only for projects undertaken by the Province unless Canada gives permission otherwise.