CLIMATE ACTION ADVISORY COMMITTEE

THURSDAY, MAY 27, 2021

VIA ZOOM – 4:00 P.M.

R E V I S E D

A G E N D A

1. ADOPTION OF AGENDA

2. ADOPTION OF MINUTES

April 28, 2021 (attached)

3. CO-CHAIRS REPORT

4. UNFINISHED BUSINESS:

a) 2022 Budget Priorities

5. NEW BUSINESS:

a) FireSmart Canada – White Paper

ADD UBCO Letter

b) Climate Action Rebate Incentive Program – Canceled by the Province

c) Workshop – Part 1 Context and SWOT Analysis

6. INFORMATION ITEMS:

7. NEXT MEETING:

The next meeting of the Climate Action Advisory Committee is scheduled for Wednesday, June 23, 2021.

8. ADJOURNMENT

THE CORPORATION OF THE CITY OF VERNON

MINUTES OF THE CLIMATE ACTION ADVISORY COMMITTEE MEETING VIA ZOOM HELD WEDNESDAY, APRIL 28, 2021

PRESENT: VOTING
Mary Stockdale (Co-Chair), Educators and Educational Institution
Brian Guy (Co-Chair), Business & Commercial Services
Bill Darnell, Community Stewardship
Jeremy Fyke, Science and Technology
Ed Wilson, Community at Large
Stan Eaman, Health and Social Services
Colleen Marchand, OKIB
Quinn Soon, Youth
Mayor Victor Cumming (Alternate Member)

NON-VOTING
Barry Dorval, Youth Supporting Member

ABSENT: Councilor Brian Quiring, Councillor (Appointed Member)
Dione Chambers, Community at Large
Jenn Comazzetto, School District #22

STAFF: Laurie Cordell, Manager, Long Range Planning & Sustainability
Jade Adams-Longworth, Records/Committee Clerk

ORDER The meeting was called to order at 4:03 p.m.

ADOPTION OF AGENDA

Moved by Stan Eaman, seconded by Jeremy Fyke:

THAT the agenda of the Climate Action Advisory Committee meeting for Wednesday, April 28, 2021 be adopted as amended:

- **ADD** BC Step Code Acceleration Memorandum

CARRIED.

ADOPTION OF MINUTES

Moved by Bill Darnell, seconded by Stan Eaman:

THAT the minutes for the Climate Action Advisory Committee meeting of March 24, 2021 be adopted.

AND FURTHER that the minutes for the Special Climate Action Advisory Committee meeting of March 29, 2021 be adopted.

CARRIED.

CO-CHAIR REPORT

Co-Chair Brian Guy updated the Climate Action Advisory Committee. The following comments were provided.

- A Thank-you email went out to all of the previous Committee Members from the first term thanking them for their contribution.
- Both Chairs attended (by Zoom) the Council Meeting held on April 12, 2021, where the Manager of Long Range Planning presented the draft Climate Action Plan that is now adopted.
- A Memo is being worked on to assist the City staff in finding and narrowing down on a carbon calculator.

UNFINISHED BUSINESS:

CLIMATE ACTION PLAN UPDATE

The Manager of Long Range Planning presented the Committee with an update on the Climate Action Plan The following was discussed:

- The Climate Action Plan was endorsed unanimously at the Council Meeting held on April 12, 2021.

The Mayor entered the meeting at 4:10 p.m.

- This is a big step that has been reached, and now it is time to enter into the action phase.
- The Climate Action Plan is in good company with other Cities having very similar plans in place (i.e. Montreal)
- This accomplishment deserves to be celebrated in all kinds of ways, this is very significant, and is now being welded into permanence.
- When restrictions allow, we should put together a way to celebrate this along with the resilience of our community; even if it is six months down the line.
- Mary mentioned a CBC documentary suggesting that commujitites organize celebrations as they come out of Covid-lockdown, celebrations of community, culture and resilience, inspired by the festivals of medieval times: https://www.cbc.ca/radio/tapestry/turning-to-the-past-for-comfort-in-the-present-1.5999447/party-like-it-s-1656-the-end-of-the-pandemic-should-be-a-moment-to-celebrate-says-historian-1.5999451. The two things could be related, with

themes of resilience, community, green recovery, in common to both.
- Bill asked whether the City could declare a Climate Action Day?

STEP CODE

The Manager, Long Range Planning presented the Committee with a Memorandum on Energy Step Code Acceleration . The following feedback was given:

- Reasoning for the proposal for an accelerated timeline for the BC Energy Step Code is that new developments and buildings are going to be built to the old standard within the next 5-10 years.
- The Building Bylaw is what is going forward for amendment, which will include the Step Code.
- The COV Chief Building Officials believe the City is ready to move forward with Step Code but they are suggesting that time is taken when implementing Step Code and slowly enforcing it. To get developers and builders on board, and to assist, train and educate them throughout the process.
- COV looking to find ways to incentivize builders and developers to get on board with the Step Code.
- COV looking at a dual-purpose approach when bringing this to Council with both the amended Building Bylaw and the Step Code Memo supporting each other and cohesively working together.
- The Province will be mandating the use of Step 3 of the five steps in the BC Energy Step Code by December 2022.
- Other communities' in the area (Lake Country, Penticton, Kelowna) have or will have implemented Step 3 by June 2021, but to datw Verenon has not mandated Step 3.
- A member noted that the Committee appreciates that the City of Vernon can't operate out of the legislative framework, but was wondering if there are ways to explore and enact inducements and incentives to build and retrofit existing structures?
- Clarification was given that Step Code would only impact new builds, and focuses on Residential and Small-Multi-family units. The Province is looking at developing retrofit code in the future.
- Would like to see Vernon keeping up with its neighbours (Lake Country, Kelowna, Penticton), because Step Code will be mandated to be at Step 3 by December 2022.
- It needs to be considered that people don't know how to do this – it will take time to learn how to do this, and develop a process. Builders, homeowners and developers will need to

be educated and incentivized to increases the uptake of the BC Energy Step Code.

- The Committee would like to be more aggressive in introducing and implementing the BC Energy Step Code.

Moved by Ed Wilson, seconded by Stan Eaman.

THAT the Climate Action Advisory Committee recommends that Council adopt the BC Energy Step Code.

AND FURTHER aim to accelerate the implementation of the upper-level steps of the BC Energy Step Code at a rate faster than initially proposed by The Province.

CARRIED.

NEW BUSINESS:

BUDGET PRIORITIZATION

The Committee discussed the budgetary aspects of implementing the Climate Action Plan, the following points were noted from the discussion on Budget Prioritization:

- Need to look at what should be implemented in the next two years. Want to try for as much funding as possible.
- Deadline for asking for budget is the first week of June. This will support the request being considered in the June Council budget prioiritzation workshop.
- Should look to request funding for communications and an implementation strategy. Would like to see a focus on engaging and communicating with the public.
- A request could be made for budget to fund a celebraton and launch of the implementation of the Climate Action Plan. The Mayor mentioned the unexpended uncommitted fund as a potential source for this.
- Clarification was given on the Strategic Plan Budgeting process, and how it affects how additional funding will be dispersed (among the departments).
- The Committee all agreed that asking to implement an annual Climate Action Budget would be smart. That way Climate Action would not have to be sustained on the Planning budget alone, and shows that Council is prioritizing the Climate Action Initiative.
- With the Climate Emergency here it is time to make Climate Action part of the City's base operations, it is the future for the City of Vernon. Built it into the new 'business as usual.'
  For the June 2021 Council strategy session, the committee recommended that staff request a new permanent full-time staff position dedicated to CAP implementation (including

fundraising); and also request a portion of the 2020 unexpended funds for one-time CAP implementation support (potentially focused on community engagement and communication). Staff will suggest a resolution to that effect at the next Committee meeting.

ENGAGING WITH INDIGENOUS KNOWLEDGE KEEPERS

The Committee considered how to engage with the Indigenous Knowledge Keepers. The following points were noted:

- Good timing since we are looking to engagement when launching the Climate Action Plan to the public.
- The Committee appreciates that this is currently being worked on and recognizes that it has to be reflected through the whole of all the Council Committees.

YOUTH REPReSENTATION ON COMMITTEE

Brian Guy, Co-Chair indicated thay another Youth Member is interested in joining the the Committee. The following was discussed:

- Brian Guy approached by former youth support Mr. Alan Gee with a Grade 9 Student who has expressed interest in joining – the student in question is currently filling out the volunteer application form.
- With this being a Grade 9 student there is excellent potential for a smooth transition and succession as Youth Members move onward.
- The Committee Terms of Reference allows up to three youth members. As is, the youth members represent one vote, but the committee discussed the possibility for reconfiguring this so each youth member has their own vote.
- The Committee was open and eager for the possibility of bringing in an indigenous youth as well, to fill up all three Youth Member spots.
- When keeping a vibrant contact with the younger generation – the schools can be a key locus for engagement in Climate Action.
- C. Marchand suggested she could look for a youth from OKIB to attend – this idea was supported.

PLANNING AHEAD – WORKSHOP GOALS AND PROCESS DISCUSSION

Mary Stockdale, Co-Chair brought forward the idea of a workshop to identify the community's strengths and weaknesses with respect to implementing the Climate Action Plan; and the opportunities and threats to successful implementation; as well as to develop and document a role for the Committeein implementing the Climate Action Plan. Mary asked for input on the workshop goals and process.. The following points were noted:

- The possibility of more time and some intensive workshops should be included. It is important to have these separated from regular meetings, in person and outdoors if possible.
    - Smaller break out groups may give everyone a chance to talk, equal speaking space for all members.
    - It has to be virtual or in person – a hybrid environment doesn't create a cohesive unit with equal parties all engaging in conversation.
- Clarification was given on the difference between a workshop and a meeting. A workshop being more targeted to a specific idea or subject with active participation.
- The Committee would like to see the Manager, Long Range Planning and Sustainability take part in the workshops and would like there to be a separate facilitator if possible.
- Ultimately talking about two separate workshops
    1. The Role of the Committee in implementation of the Climate Action Plan
        - How best to support Staff
        - How to make recommendations
        - How to involve the Committee Members
        - How to engage the Community

    2. Prioritization of Implementation
        - Where to start implementation
        - What is the timeline for the implementation schedule

Barry Dorval left the meeting at 5:27 p.m.

- Flexibility needs to be considered for a time to thoroughly immerse the Committee into the workshops to create and develop the strategies. June, July or August might be better than May.

Stan Eaman left the meeting at 5:58 p.m.

- The workshops should be separated and reversed in the order of:
    1. Prioritization of Implementation
    2. The Role of the Committee – introspective look into the Climate Action Advisory Committee

UPCOMING AMBASSADOR TRAINING

The Committee discussed upcoming Ambassador Training and what opportunities should be offered: The following feedback was noted:

- Moved to the next meeting, due to time restrictions.

INFORMATION ITEMS:

EARTH DAY ADVERTISING

The Manager, Long Range Planning and Sustainability provided some information on Earth Day Advertising. The following point was noted:

- Promoting the new Climate Action Plan through the use of social media and the radio, we encouraged all to celebrate by planting a tree.

NEXT MEETING

The next meeting for the Climate Action Advisory Committee is set for May 27, 2021 at 4:00 PM.

ADJOURNMENT

The meeting of the Climate Action Advisory Committee adjourned at 6:03 p.m.

CERTIFIED CORRECT:

_____ Co-**Chair**

_____ Co-**Chair**

THE UNIVERSITY OF BRITISH COLUMBIA

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To: XXX

Dear XXX

With hope for an end to the COVID-19 pandemic, government must now pivot attention to the looming climate change crisis and threats posed by highly destructive wildfires. The scientific community predicts the consequences of increased area burned at high severity will include the following staggering annual statistics for western Canada:

- Hundreds to thousands of premature deaths due to smoke impacts on human health,
- Tens to hundreds of million tonnes of greenhouse gas emissions further complicating efforts to mitigate climate change,
- Billions of dollars in increased suppression and indirect fire costs negatively impacting the social, cultural, and political fabric of the provinces.

By 2050, years like 2017/2018 in BC and 2016/2019 in Alberta will be commonplace. The annual highly damaging fire seasons will be punctuated by increasingly extreme events as seen recently in eastern Australia, Siberia, and the west coast of the United States. Climate change and fire science experts insist on a limited window - the next decade - in which society can positively alter the crisis.

Solving a crisis requires matching our actions proportional to the scale of the crisis. Actions driven by a climate change emergency, guided by social justice, informed by holistic and inclusive policies, and supported by long-term sustainability. New collaborations are critical to solving a crisis impacting every segment of society; no one government agency or special interest has the ability or perspective to act in isolation. The solution requires an unprecedented level of international cooperation and collaboration; wildfires and their effects do not recognize administrative boundaries. These considerations and partnerships are not new or revolutionary because they mirror recent government efforts in response to the COVID-19 pandemic. With the pandemic, the government demonstrated an ability to suspend the status quo economic paradigm to solve an existential crisis. We saw how informative and respectful communication with the public has been key to managing the COVID-19 turmoil and will be equally crucial in gaining the social license needed to implement climate change plans and strategies.

A team of scientists and practitioners developed this white paper by applying decades of experience in wildland fire, climate change research, and on-the-ground operations. It describes the crisis we face in detail and suggests a course of action to reduce future wildfires' adverse consequences. Use the following as a starting point for the necessary holistic, inclusive, and transparent debate resulting in policies to bring us together through this crisis.

Sincerely,

Mathieu Bourbonnais
PhD, University of British Columbia- Okanagan
Kelowna, BC

Robert W. Gray
R.W. Gray Consulting Ltd.,
Chilliwack, BC

Scott Green, PhD,
University of Northern British Columbia
Prince George, BC

Robin Gregory, PhD,
University of British Columbia (Vancouver, BC) and Decision Research (Eugene, OR)

Crystal Kolden, PhD,
University of California – Merced, Merced, CA

Susan Prichard, PhD,
University of Washington, Seattle, WA

Francisco Seijo, PhD,
Instituto de Empresa School of Global and Public Affairs, Madrid, Spain

+ invited signatories

CLIMATE CHANGE, WILDFIRES AND THE COSTS OF LIMITED ACTION

1.0 The Problem

The shockingly high costs of recent fire events will be unsustainable by mid-century if allowed to occur unabated. Examples of regionally significant catastrophic wildfires include the 2016 Fort McMurray Fire, the 2017 and 2018 British Columbia fires, and the 2019 Alberta fires. These fires accounted for over $10 billion in direct losses and tens of billions more in indirect economic losses. We cannot quantify the adverse social, cultural, physical, and mental health impacts due to relocations resulting from fires and widespread smoke. Our western Canada fire season will continue to experience extreme events, as seen in eastern Australia, Siberia, and the United States' west coast.

Fires of the immediate future threaten all Canadians, even if they are not directly in the path of the flames.

- Chronic smoke increases hospital visits, degrades physical and mental health, and leads to hundreds to thousands of premature deaths annually.
- Wages are interrupted or jobs are lost as forest and agricultural commodities burn.
- Transportation of consumer and industrial goods halts.
- Tourism revenues decline.
- Housing prices and tax bases fluctuate as communities repair and rebuild on reduced revenues.
- Communities struggle to surmount the combined burdens of trauma, economic losses, and detrimental health impacts.

Without action now, this is the future faced by western Canadians.

1.1 What needs to be done

It is not difficult to devise an ambitious plan for protecting the forests and citizens of western Canada. The challenge lies in creating a realistic plan we can readily implement while acknowledging existing interests and resources in the face of ever-changing financial and political realities. COVID-19 provides a helpful lens.

Can we imagine an effective wildfire reduction strategy surviving both the political and market-based changes witnessed in North America during the past four years, along with the financial realities of burgeoning government debt? Yes, by integrating adaptability and defining milestones to serve as indicators for both progress and course correction, we have a chance of meaningful change.

How can this be done? The answer is not yet another Royal Commission or eighteen-month task force. We know enough about the actions that should be taken, especially in recognizing the climate change emergency facing western North America. Over the next two to three years, critical gains can and should be made – both on the ground and in terms of increased public support - while parallel efforts provide answers to additional pressing research questions. A realistic plan should supply both short-term gains (significant for reasons of support and credibility) and medium- or long-term research answers to understand outcomes of mitigation strategies and how wildfire risk and behaviour are responding. Knowledge gaps and uncertainty are real but should not impede action. This includes, but is not limited to: forest thinning, prescribed burning, tree planting (deciduous and conifer), rehabilitation and restoration work, as well as developing strategies to deal with the immense quantities of fuel that need to be removed from our forests in ecologically sustainable ways.

Although many nations face the spectre of the wildfire crisis, none have yet solved this complex problem. Canada has an opportunity to make substantial progress but must quickly enact changes through large-scale efforts. Work must dovetail with neighboring provinces and states and federal governments in both Canada and the United States. Specific actions will vary across scales, jurisdictions, and disciplines.

Top-down edicts alone will be insufficient. Broadscale change can't be achieved without community-level collaboration and buy-in. Government has the role and responsibility of investing in solutions, realigning management strategies on Crown lands, aiding private forest owners to reduce their risks, and facilitating wood product and energy market changes to achieve the desired outcomes. Government also has the responsibility of elevating the voices of key actors who must play a bigger role in leading change, including both stakeholders in the forest industry and the more holistic, intergenerational perspective of the Indigenous peoples of BC.

2.0 The solution

The five guiding principles to successfully reduce wildfire risks and costs while strengthening foundational forest ecological systems are: scaling our solutions, the climate emergency driving actions, social justice considerations, smart policy, and committing to sustained, long-term actions.

Actions must be to scale.

Scale refers to the size of the area treated and the volume of fuel (biomass). The scale of the problem is daunting. In BC, the scale of the hazard posed by excess fuel accumulations is measured in the millions of hectares and billions of tonnes of biomass. Timber harvest (over 190,000 ha/year in BC), insect epidemics, drought, and minimal post-fire salvage contribute to the problem. Wildfire risk-reduction treatments must be conducted at large spatial scales involving large quantities of fuel to significantly mitigate wildfire emissions, stabilize carbon storage, and reduce fire effects on the economy and society.

That scale of actions needs to match the scale of wildfires we are currently experiencing as well as future events. The landscape needs to contain a high proportion of patches of low flammability fuels, while maintaining ecological integrity. To slow the spread of a 100,000 ha wildfire, fire scientists recommend >50% of a landscape treated to conditions that slow or impede the spread of a wildfire of that scale. This means higher biomass utilization on harvest units, more harvest units prescribe burned, more salvage of damaged forests, more areas of non-forest fuels, more areas of deciduous forest, etc. These thresholds to effectiveness are critical; if our investments in fuel treatments fall short of treating a high enough percentage of fire-prone landscapes, we are not likely to have enough of an impact given the scale and severity of wildfires to reduce negative consequences. We will continue to experience large, high severity fires with staggering levels of emissions as well as social, environmental, and economic costs. At the same time, research shows local solutions to wildfire risk reduction are often the most likely to be accepted and supported. So, the big challenge is thinking on a large enough scale to make meaningful landscape-level changes to fuel composition and configuration, in ways that are created and acceptable to local communities and enhance ecosystem function and resilience.

The realities of the climate emergency must drive actions.

The gradual "fueling" of the landscape was overlooked until the late 1990s and early 2000s when several significant wildfires adversely impacted communities, local and provincial budgets, and human health and safety. The consensus from climate and fire scientists is highly damaging wildfires will become more common in the decades to come. Many scientists suggest that we have a limited window to effectively slow down climate change and its negative effects, with some suggesting that the next decade is the critical period. Without addressing emissions within a decade, the likelihood of staying below 4-5 °C of warming is low (western Canada is already experiencing a 2°C increase over the global base line). As a result, the negative economic and environmental impacts of wildfire will only worsen. This message is similar to what public officials are now saying with respect to COVID-19: stronger actions taken earlier

would have saved large numbers of lives and large amounts of money. With COVID-19, the early inaction is partially excusable because so much was not yet known about the virus, but the evidence in the case of climate change and wildfires is clear and consistent: far higher costs are and will be imposed on society by continuing the current partial and crisis-oriented response to the threat of wildfires.

Actions are grounded in social justice.

According to the *Canadian Human Rights Act*, every person in Canada has the right to safety, security, dignity, respect, opportunity, and well being, regardless of their social or economic status. Therefore, the rights of everyone, regardless of economic status, to live in a risk-free and healthy environment needs to be a requirement of wildfire hazard mitigation going forward. We must identify areas at risk and target our actions accordingly, with financial consequences less of a deciding factor. Commonly used wildfire threat and treatment prioritization systems are weighted heavily to economic values at risk, which are generally physical structures like houses, businesses, or infrastructure. Instead, provinces need to move to a system that gives equal weighting and importance to cultural, social and ecological values when evaluating mitigation priorities. They must recognize the protection of Indigenous cultures and their relationship to the land, as well as the fundamental relationship of all Canadian citizens to the land and nature-based rights (e.g., the importance of old-growth forests and the health of species-at-risk) including spiritual, mental-health, and place-based values.

Actions are informed by holistic and inclusive policies

Policies to address the risks of wildfires need to take account of more than the narrow set of concerns of a single stakeholder**.** New research on engaging citizens for informing public policy points to the need to establish two-way communication that can simultaneously lead to a more informed citizenry, who better understand the technical options and their implications, and (equally important) a more informed set of managers and government officials, who gain a deep understanding of public values and concerns. Special attention will need to be given to communities that are likely to be disproportionately affected: Indigenous communities, rural populations, and current workers in the forestry sector. And it must be realized that traditional sources of scientific expertise alone cannot supply all the answers. Science can provide essential insights regarding new forest management options, but science is mute when it comes to understanding the value-based trade-offs required for developing broad-based acceptance of new forest sector initiatives.

Many specific on-the-ground activities are not new: thinning, species conversion, prescribed fire, restoration projects, and modified suppression tactics. The forest industry is currently the only one

agent at the table in these efforts. They are not the overarching driver of change but an important facilitator of change none-the-less. Studies in the US on successful fire resilience and adaptation efforts have shown that complex solutions are best accepted and initiated when originating locally from trusted sources, not solely industry or government agencies. Governments play a powerful role in enabling change when they align local sources with knowledge and funding and ensure that policies and players at regional and national scales represent the complexity of the problem.

Efforts must account for the human dimension as a critical element inherent in the complexity of changing policy. Studies by behavioral scientists emphasize a wide range of biases typically influencing how people (both scientists and members of the public) view policy actions addressing the long-term effects of climate change. Biases include anchoring on recent or highly salient events, over emphasizing past investments (so-called "sunk costs") and potential uncertainty regarding future conditions, and relying on convention (we've always done it this way) which can encourage the continued reliance on ineffective policies. These factors influence stakeholders' ability to make effective and informed decisions.

Dealing with this crisis will require near-term costs and effort, yet it is clear people have a difficult time imagining what a fire-smart and resilient future will look like. The solution is for both scientists and public officials to do a better job of communicating the costs associated with the current path (as a default strategy) and articulating the substantial gains associated with making changes to current management policies. Addressing these behavioral insights is essential to begin gaining long-term public support so that forest management changes can be made thoughtfully, with a coherent inter-agency strategy recognizing cumulative effects and ecological and social values, unrolled over decades (as needed) rather than as a short-term fix.

Actions must be supported by long-term sustainability. Any approach to solving this crisis must be maintained for decades. There is no good-news story where we can miraculously and significantly reduce the risks over the next 5 or 10 years. Solutions will require patience and a long-term commitment that is not easy to mobilize or sustain. Both political will and wildfire fuels are dynamic, yet any solution with a chance of success must incorporate the behavioural and ecological realities of making long-term, sustainable changes. This includes the creation of both an enduring political will and a long-term capital investment in the infrastructure needed to turn raw wildfire fuels into marketable/usable commodities. We must end the practise of spending millions of dollars on short-term funding programs and initiatives originating in the wake of a bad fire season (i.e., Union of BC

Municipalities Strategic Wildfire Protection Initiative and Community Resiliency programs, Forest Enhancement BC, Wildfire Risk Reduction, etc.). These post-fire initiatives make for catchy news headlines, but they are reactive rather than proactive, and their ability to implement the required behavioural, political, and environmental changes at landscape scales is unclear.

Long-term, stable investment is needed for two reasons. First, for the on-the-ground treatment of broad landscapes, to make them more resilient in the face of threats from fires. Second, for creating the manufacturing and workforce infrastructure necessary to process billions of tonnes of wildfire fuels. Government funded programs, monetizing ecosystem services, NGO and private foundation investments have all advanced strategies to accomplish portions of this work. However, the scale of investment has failed to match the scale of the wildfire problem and the need to address the problem in a timely, consistent, sustained manner.

Ironically, these issues of long-term funding and advanced planning for wildfire have not been as serious with mitigation efforts of potential negative effects of other natural disturbances such as earthquakes, floods and now a pandemic. Estimates of damage from a significant earthquake in BC exceed $30 billion, and governments have invested similar capital in seismic upgrades and other measures intended to mitigate negative social and economic impacts. Governments have demonstrated an ability to invest large sums of money in risk management when faced with an existential threat. However, the same cannot be said for wildfire risk mitigation. Investment in wildfire mitigation in BC over the last decade has been a tiny fraction of the total cost of fires over that same period, with most of the investment in response and recovery as opposed to prevention and mitigation. Wildfire mitigation efforts that have occurred over the last 16 years have focused primarily on the Wildland-Urban Interface and yet no community in the province would be considered “safe” from wildfire.

Investment must also come in the form of timber harvests, but this is fraught with many caveats. Timber harvest is not the same as a fuel treatment, which re-arranges fuels as opposed to removing them. If the goal is to reduce burned area by impeding fire movement across the landscape and reducing fire severity, cut blocks do neither, unless they are followed by a prescribed burn. With BC’s annual timber harvest footprint of 190,000 ha’s, landscape resilience to wildfire could be improved if harvests were strategic and combined with wildfire hazard mitigation. Timber harvest in BC has been offered as a market-based solution, suggesting that existing and future markets for wood biomass products (dimension lumber, pulp and paper, engineered wood products, bioenergy), or carbon offset markets, will solve the wildfire fuel problem by making it economical to treat the hazard as a by-product

of traditional forest harvest activities. However, harvesting practices are aligned with current economics and policies that do not account for wildfire fuels, risk and how the combination of these will influence ecosystem function.

3.0 Recommendations

To solve this crisis, we need a new kind of Strategic Plan - one that spans multiple decades, is national and international in scope yet meaningfully involves local and provincial/state governments, receives broad-based and bi-partisan political support, is founded on principles of ecosystem function and resilience, and is inclusive and adaptable. It also needs to be responsive to the needs of big business and big government (i.e, long-term funding commitments, government aid and market interventions) while creating a social license to operate that includes input from the general public, Canada's Indigenous communities, and a wide range of NGOs.

Core Elements

The Provinces of BC and Alberta, in conjunction with Ottawa and neighboring US States, must tackle the wildfire crisis in its entirety. This will require that we address the following interrelated elements with a plan that recognizes they can no longer be addressed in isolation:

- **Communities**. The Provinces must commit to fireproofing communities at risk from wildfire, recognizing that the risk never disappears, and anticipating how the number and location of communities at risk will increase over time due to climate change.
- **Watersheds**. The Provinces must commit to improving the wildfire resilience of watersheds providing ecosystem services, critical wildlife habitat, and water to downstream individuals, communities, and businesses.
- **Greenhouse gas emissions**. The Provinces, in partnership with the Federal Government, have committed to reducing the emissions of greenhouse gases. They need to specifically commit to the large-scale reduction in greenhouse gas emissions from wildfires.
- **Smoke emissions**. The Provinces must commit to large-scale reductions of harmful particulate emissions from wildfires. The science is clear that chronic exposure to elevated particulate matter levels, especially for children, is a major public health issue. It is also emerging as a major

economic issue as well, with many businesses in western Canada being negatively affected by protracted periods of smoke.

- **Economic burden**. The Provinces must commit to reducing the direct (suppression) and indirect (wage and business losses, infrastructure damage, acute and chronic psychological and physical health impacts, etc.) costs of wildfires on the Provincial budgets, the business community and the citizens of BC and AB.

National and International in Scope

Ottawa, in partnership with western province premiers, and Washington, DC, in partnership with western states governors, need to work together to contribute solutions to cross-border wildfire effects including physical damage from wildfires that spread across national and international borders, as well as negative impacts of wildfire smoke on businesses, incomes and livelihoods, and human health. This means working cooperatively to reduce the conditions leading to high severity, costly wildfires across western North America. Solutions will need to focus on internal policies, external trade agreements, and market forces that prevent the treatment of millions of hectares of forests containing billions of tonnes of forest fuels. Governments across the region need to guide the creation of markets that can absorb this volume of material and provide the financial incentives necessary to coax the private sector into investing in the workforce and manufacture of commodities from that material. This is not dissimilar from the approach both national governments have taken in response to the COVID-19 pandemic and the need to mitigate the spread of the virus, support businesses and individual finances, and rapidly develop a vaccine.

Bi-Partisan

The Strategic Plan needs to be bi-partisan because there is no simple solution that will fit within a 4-year election cycle. Solving this crisis will require a long-term, stable approach and will involve social and economic hardships along the way that can be exploited for political gain, setting back progress on solving the crisis. To solve this crisis, all political parties must be involved in the solution so that they all share ownership.

Wholistic and Inclusive

The Strategic Plan needs to be wholistic including multiple levels of government and portfolios. This crisis is affecting most municipal departments, provincial ministries and federal departments and all should have a say in how the crisis is resolved. In the past, whenever a post-wildfire review was

commissioned and delivered it went to the forest ministry alone to resolve; this crisis is too large and too complex for one portfolio to solve. The plan also needs to be inclusive of the interests, concerns and knowledge of the majority affected by wildfires outside of government and the forest industry.

Adaptive and Flexible

The Strategic Plan needs to be informed by emerging science. To do so, governments and industry need to make a long-term, stable funding commitment to targeted research that is a cross-border effort. We need to harness the best minds to solve a shared crisis in what is basically a shared set of ecosystems – the Cordillera running north-south from Alaska to Mexico. These ecosystems/fire regimes in BC, western AB, and the Yukon have more in common with Alaska, Idaho, Montana, Oregon, and Washington than they do with the rest of Canada.

Coordinated between Business and Government

A Herculean effort will be needed to do the necessary forest thinning, prescribed burning, tree planting, rehabilitation and restoration work necessary to solve this crisis. A similar effort is needed to process the billions of tonnes of fuel that need to be removed from the forest today and in the future. Capacity is one aspect of this requirement: a large, well trained workforce that can do the necessary restoration work. The second aspect is markets for the material. Industry can solve some of this on its own, provided they can turn a profit. To treat larger scales, poorer quality stands, difficult locations, etc., government needs to intervene and reduce the risk to business. This means strategies such as: providing direct subsidies to ensure projects are revenue neutral; creating new markets for wood and bioenergy products; creating incentives for the use of wood products based on carbon accounting; and creating disincentives for the use of building (cement, vinyl, aluminum) and energy products (fossil fuel-based products) based on carbon accounting.

If government can reduce the investment and operating risk to business it can realize significant social, environmental, and financial benefits. A sizable, stable investment of taxpayer's money will be required, however, that investment would yield immeasurable results. The large-scale effort to tackle this crisis would result in significant job creation in rural BC, AB, and the Yukon. The wages associated with these jobs are decent, middle-class wages. The multiplication factor (employment, goods, and services) for wood products, manufacturing and bioenergy extraction is also high. Corporate, personal, and goods and services taxes would provide a significant source of revenue to the Crown as would stumpage revenue associated with adaptive harvest and treatment measures developed to mitigate wildfires.

4.0 Conclusions

Although images of recent wildfires in California and Australia remind us of their potentially devastating effects on people and infrastructure, we forget that wildfires burning at the wildland-urban interface have been documented for centuries. Even though governments are better equipped to fight and respond to wildfires, society has never been more vulnerable to their negative effects. More people are living in fire-prone areas while a changing climate is increasing the length of the fire season and creating more extreme weather conditions. Both forest and grassland animal and plant communities have never been more exposed to wildfires' negative impacts. In the past, much of the "wildfire problem" was pegged on either fire protection agencies or the forest sector. This has led to a decades-long discussion on how to maximize fire protection by integrating fire and forest management activities. This paradigm is simplistic and insufficient, because wildfires affect so many facets of our society including health, biodiversity, water security, the economy, and more. Wildfire management must engage additional proponents to help people to learn to live with the realities of landscapes and ecological systems that include wildfires but, over time, works to reduce their more catastrophic effects.

To this end, we propose an approach to meeting wildfire management objectives that: (i) frames the appropriate scale (i.e., spatial extent) of action, (ii) explicitly considers the current climate emergency, (iii) is guided by principles of social and environmental justice, (iv) is informed by holistic and inclusive policies, and (v) promotes long-term sustainability. Such a framework is in no way meant to be rigid or prescriptive. At best, it provides a gold standard to strive for and, at worse, lays the foundation for a constructive - and urgent - discussion. While the wildfire seasons of 2017 and 2018 in British Columbia, and 2015 and 2019 in Alberta, caused much hardship, a full-blown human tragedy like the one experienced in California a few months ago has thus far been avoided. But luck will not always be on our side, and losses far larger than any yet experienced are not only plausible but highly likely in Canada's western provinces. Knowing this, it is imperative to act to mitigate or, if possible, prevent such a human and ecological disaster.