INTEGRATED FOREST MANAGEMENT ADAPTATION PLAN

Bill Bourgeois, PhD, RPF (Ret)
Coordinator, *Healthy Forests-Healthy Communities* Initiative

TIME FOR ACTION

BC IS BURNING AGAIN! It is time to act on treating BC forests so that they can adapt to the increased frequency and magnitude of wildfires caused by climate change. Numerous studies and recommendations have been provided over the last 15 years. There is general consensus among wildfire experts regarding what actions are required. Communities, First Nations and forest resource managers are calling for action. In cases where adaptation is needed regarding catastrophic events, Governments tend to not follow through on implementation. **The BC Government needs to deviate from the norm and take a leadership role on this issue**. It must go beyond more discussions and creation of pilots and advisory bodies. The wildfire adaptation issue can be a stimulus in moving toward community resiliency and economic development. We have the technology, we have the knowledge on how to move forward in this regard and we have the willingness of the forest affected Partners. **Premier Horgan and Minister Donaldson, BC needs adequate resourcing and real, on-the-ground action!** Show us the leadership.

WILDFIRE ADAPTATION – A stimulus

Building wildfire adaptation in BC forests has an additional benefit to wildfire management by contributing to long-term forest stewardship and community resiliency. **This is an opportunity we cannot miss!**

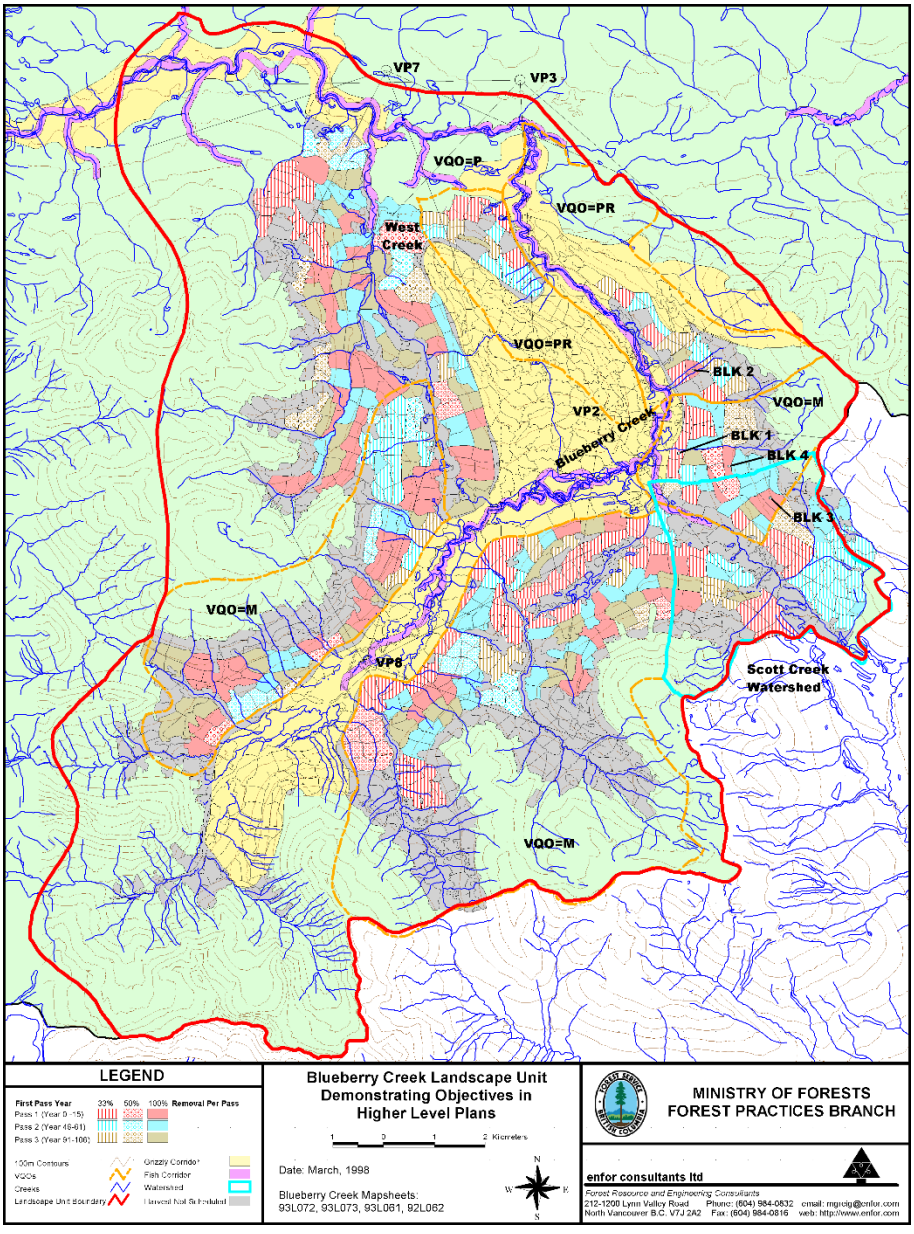
There have been enough studies and recommendations developed responding to wildfires. The latest commissioned report[1] on 2017 wildfires and floods (https://tinyurl.com/ydhr3lq8), when coupled with the "Filmon Report" on the 2003 BC wildfires[2] (https://tinyurl.com/y8f45pz8) provide a stimulus to take action. Many of the adaptation recommendations in these reports and those from other sources can be addressed through creating strategic **Integrated Forest Stewardship Adaptation Plans (IFSAP)** at the landscape level. This can happen! All it requires is commitments from affected Partners to work collaboratively and cooperatively in customizing the concept outlined below to fit local conditions. However, it is critical Government demonstrate leadership by encouraging implementation of the concept in local communities and their forests. All indications suggest the Partners are ready. They are waiting for Government to stimulate real action.

[1] *Addressing the New Normal: 21st century disaster management in BC,* G. Abbott and Chief Maureen Chapman, Government of BC, 2018.
[2] *Firestorm 2003-Provincial Review,* G. Filmon, Government of BC, 2004.

CONCEPT

An IFSAP involves combining 1) landscape unit planning and implementation with 2) actions related to building community resiliency. Although the following proposed approach has a wildfire adaptation focus, it should be integrated into other Sustainable Forest Management practices. The wildfire issue is just another component of forest management planning and a contributor to community resiliency.

Landscape Unit Planning is the cornerstone to adaptation. A Landscape Unit Plan is an area of land used for long-term planning of resource management activities, usually 50,000 to 100,000 hectares in size. It incorporates Land Use Plan zones and provides more plan detail in achieving the resource objectives. The product includes areas with different management objectives and constraints to guide operational activities. An example is shown below.



Developing landscape unit plans is not new. Guidelines were published by the Chief Forester of the day in 1999 (https://tinyurl.com/ybujwmwy). Most of these are applicable under today's conditions. The current Chief Forester has used the concept in providing guidance to forest planners responding to the 2017 wildfires (https://tinyurl.com/y7pybzbe), specifically regarding "retention planning for habitat, hydrologic function, mid-term timber supply and to support recovery at stand and landscape scales." All that is necessary is integrate landscape unit planning, including wildfire adaptation, with a focus on building local community resiliency from the forest resources. It is easy to visualize the addition of wildfire fuel breaks and interface "zones" to the above graphic.

The concept appears simple but it needs commitments from Partners that include: Government, the local community or communities and the licensees (forest and non-timber resources) and First Nations to work cooperatively and collaboratively in developing the technical plans that meet the collective needs. There must be an understanding by the Partners that this is not "opening up" the current land use plan but a refinement of it to address issues arising since its creation (e.g., Mountain Pine Beetle epidemic and wildfire impacts, etc.). Developing the **landscape unit plan is a technical exercise, it is not a multi-sector shared decision-making process**. However, the Partners will have to identify the expected broad outcomes resulting from recent issues to guide the forest planner(s) in its preparation. The technology to achieve this objective has been available for over two (2) decades and we have experiences in its use. All we need to do is use it more broadly for IFSA Plans.

Full utilization of the fibre produced from implementing a landscape unit plan will include fibre for a variety of wood products (e.g., logs for primary and secondary wood products, fine fibre for bio-energy and bio-chemical products). The costs associated with wildfire adaptation treatments are high. The treatments will require Government funding at a level much above that currently available. A means of generating revenue from the treatments is essential to augment Government funding. Currently most of the fibre is burned on-site generating GHG emissions. Utilization of the fibre requires a sustainable market for it at an acceptable cost to the users. Achieving this situation involves establishing an objective that incorporates the sources of fibre. Also, adopting a policy of full fibre utilization and sending the fibre (i.e., logs and small fibre) to the mill or facility where the greatest value can be generated. This will require encouraging investors to initiate new businesses or expand existing businesses that contribute to community economic diversification of the local forest sector.

WILDFIRE ADAPTATION

The planning of wildfire adaptation has three (3) main areas:

1) Treating the **urban-forest interface** areas to make them more resistant to wildfire spread,
2) Providing **wildfire fuel breaks and silviculture treatments** across a landscape to reduce the potential for large wildfires, and
3) Conducting **forest harvesting in a manner that minimizes residue** that provides a source of fibre for wildfire expansion.

Urban-forest interface

Government has been encouraging communities to remove wildfire fibre sources in the urban-forest interface for some time. The Government has their own set of various mechanisms and programs (e.g., Fire Smart, Forest Enhancement Society-BC, etc.). Examples of community tools to reduce risk from future urban-forest interface fires are graphically described below.[3]

[3] *Land use planning reduce wildfire risk-examples of community tools*, Wildfire Planning International and Headwater Economics, pdf

The Forest Practices Board conducted a Special Investigation in 2015 regarding the progress and effectiveness of treating interface areas (https://tinyurl.com/ybl887sw).[4] The investigation identified that even though forest treatments were being conducted, the efforts were inadequate in treating even the "high risk" areas. There were a number of issues identified as needing attention:

- Unaffordability of treating the identified hazard at the current average cost,
- Lack of treatment of areas identified in community wildfire protection plans by some local governments and First Nations,
- Lack of major participation by the forest industry in managing forest fuels in the interface, and
- Inadequate availability of technical tools that prescribing professionals and government officials need to do their jobs (e.g., best management practices).

The recent commission Abbott and Chapman report addresses many of these issues. In addition, three BC experts in wildfire ecology sent a letter to Premier Horgan and Minister Donaldson (2017 Wildfires and Resilience) recommending actions to emphasize these areas. This was supported by an additional 33 academics, community leaders and land managers.

Landscape level forest management

Providing wildfire fuel breaks and silviculture treatments within a landscape unit which has been endorsed by many wildfire ecology experts. Some effort is underway to treat areas. The belief is this approach will reduce the potential for large wildfires from occurring and increasing the opportunity for fire fighters to control wildfires.

In 2010, the BC Wildfire Branch responded to this, by incorporating of forest planning into wildfire management (*BC Wildland Fire Management Strategy* https://tinyurl.com/y8b3gvdy)[5]. This Strategy was developed as a multi-agency approach. It was a positive step, including the initiation of wildfire management pilot plans projected for completion in 2016-2017). In their Special Investigation, the FPB recommended including urban-forest interface area(s) and wildfire management areas as part of a landscape unit plan. This would involve using the BC Wildfire risk prioritization process to identify landscapes needing treatment and incorporation of wildfire fuel breaks, both adjacent to urban-forest interface areas and in the broader landscape.

A number of pilot landscape level wildfire management plans (wildfire risk assessment pilots) were initiated. Each took a different approach, some focusing on urban-forest interface and others on broader wildfire adaptation approaches. In most cases reports were written but it is unclear whether they have been implemented. A new approach is being discussed within the Wildfire Management Branch based on the lessons learned from the pilots and filling gap areas within the pilot(s) approach. It appears this

[4] *Fuel management in the wildland urban interface-update,* Government of BC, Forest Practices Board, FPB/SIR43, pdf, 2015.
[5] *BC Wildland fire management strategy,* Government of BC, Wildfire Management Branch, pdf, 2010.

initiative is currently in the development stage. However, it is being thought of as landscape level treatment but not as a component of a landscape unit plan involving other values.

Developing wildfire management areas and treatments across the broad landscape and around communities will deliver on the Government commitment following the "Filmon Report" to:

- Treat interface areas against wildfires, and
- Create forest structures that minimize the impacts of future wildfire events.

The letter to Premier Horgan and Minister Donaldson (2017 Wildfires and Resilience) recommended the following relative landscape level wildfire adaptation:

- Government establish a formal requirement for strategic wildfire adaptation as a requirement as part of forest management decision-making. This could be through use of the Chief Forester's guidance document (https://tinyurl.com/y7pybzbe),
- Government adjust silviculture regeneration policies and standards that limit wildfire adaptation requirements,
- Government adjust wildlife policies not intended to mitigate wildfire hazard when originally created, and
- Government make a formal commitment to implementing a wildfire restoration program.

Wildfire adaptation-applying existing tools

When combined, the various sets of recommendations relative to urban-forest interface and landscape level planning identify the practical and priority actions needed to adapt to wildfires. There have been a number of conversations, the creation of advisory groups and presentations responding to the recommendations. In most cases, the feedback has been positive. However, not much seems to be done on-the-ground regarding moving forward on implementing the advice. We need real and sustainable commitments to address the issue. **We do not need more studies or talk. We need commitments to implementation, mainly from Government but also the other Partners!** The necessary implementation activities may have uncertainties but at least let's try them and learn from the mistakes. There are some instances where the Partners have proposed action but get "side tracked" with more talk. This does not reflect a positive commitment by Government or others who are sending the message they do not want to move forward.

ECONOMICS AND COMMUNITY RESILIENCY

Developing the wildfire management plans as a component of applying the IFSMP concept would allow for delivery of further Government commitments in the areas of:

- "Modernizing" land use plans,
- Encouraging new bio-economy businesses,
- Supporting local secondary wood manufacturing,
- Increasing movement to community resiliency, and

- Contributing to climate change adaptation.

Achieving each of these would contribute to moving toward community resiliency and increased community economic development.

In 2017, Government announced a commitment to "modernize" land use plans. The details are still under development but will be implemented on a case by case basis. It is clear an updating of the land use plans is required to reflect the catastrophic events that have resulted in pressures on timber supply, the need to incorporate First Nations' values into plans and to address pressures on species at risk. The "modernizing" Land Use Plans could be through developing IFSAM Plans.

The need to update the land use plans to reflect these situations and values are clearly known by local communities and resource managers. For the most part, this is a technical exercise involving bringing forward this knowledge as input to guide forest planners. The forest planner should be required to incorporate the values into the plans based on input from a local community-based and First Nations advisory team that includes experts. as needed. Using this methodology would not only bring community and First Nations' views on land use into the planning process but provide the foundation for submitting licensee legislated requirements for Forest Stewardship Plans. An up-to-date land use plan provides stability to both the resource industries using the Crown land base and the communities who benefit from them.

Wildfire adaptation is an opportunity to increase community resiliency by encouraging new bio-economy businesses, enhancing local secondary wood manufacturing and reducing contributions of GHG emissions affecting climate change. This can be done through:

- Improving silviculture practices, including wildfire restoration, required for forest stand wildfire adaptation,
- Utilizing the fibre available from urban-forest interface treatments instead of burning,
- Utilizing logging residue for bio-energy and/or bio-chemical businesses instead of burning, and
- Utilizing logs suitable for secondary wood manufacturing instead of burning.

Fulfilling these goals can be costly from the perspective of treating the forest stands to meet wildfire adaption objectives and utilizing the fibre generated. The FPB identified the costs for treating urban-forest interface and other forest areas to adapt to wildfires using current practices and funding instruments as unaffordable (https://tinyurl.com/ybl887sw). They mention there a small number of examples of where communities and Partners have developed an economically sound system for off-setting the treatment costs. Lessons learned from these should be applied throughout BC but modified according to local conditions.

The most effective way to achieve the balance of costs and benefits would be to have markets for the fibre. However, it is critical that a sustainable fibre supply be identified, if investors are to get involved. Movement to this condition involves coupling fiber supply from several sustainable sources (e.g., mill

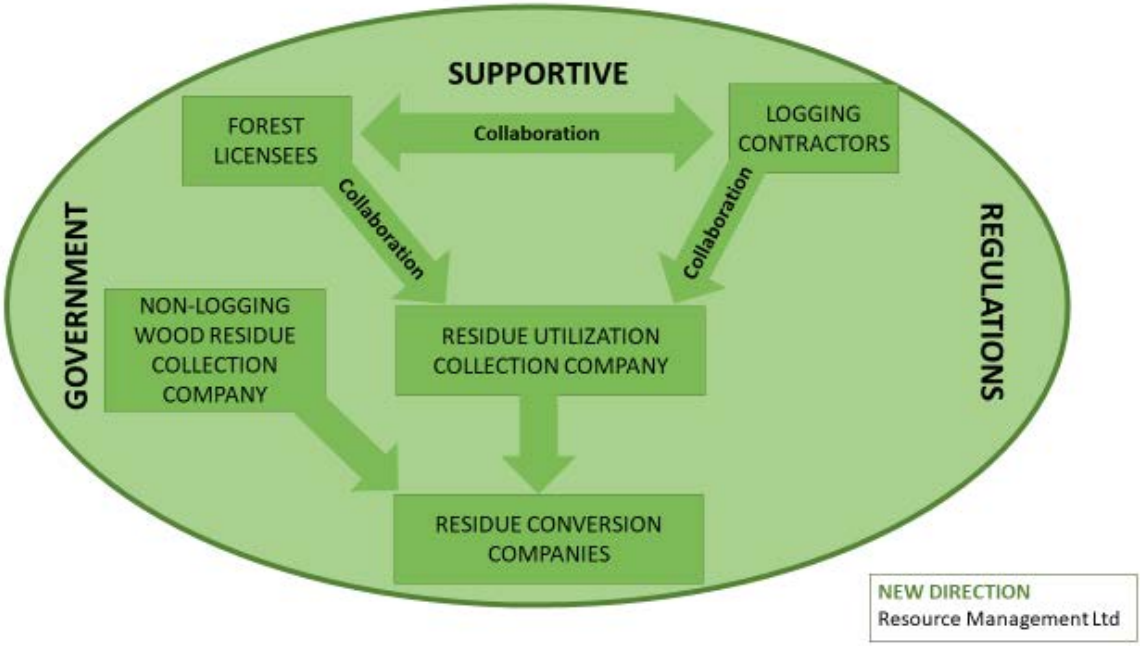
residue, logging residue, secondary wood manufacturing residue, etc.) with wildfire adaptation generated fibre.

The current and potential markets for fibre from logging residue and wildfire adaptation treatments are many (as outlined in the following graphic), provided the economics are positive and the geographic constraints are not limiting.

Similar to the utilization of wildfire adaptation treatments, utilization of logging residue can be costly. A critical factor in the economics is cooperation between the business Partners and Government. Lack of cooperation and collaboration is a sure recipe for failure.

The current practice in many Resource Districts across the interior of BC involves processing the harvested trees at the roadside, trucking out the logs destined for the mill(s) of the Licensee and burning the residue piles. In the case of wildfire adaptation treatments burning of the residue is most common. The burning of these residue sources is viewed as wasteful at a time of declining timber and fibre available for the forest industry. A cooperation-collaboration model was developed for the important phase of logging residue utilization[6].

[6] *Improving forest fibre utilization-Identifying business opportunities and potential commodities from material currently being burned*, 2018 draft report, W.W. Bourgeois, New Direction Resource Management Ltd.



If the Government and communities are to capitalize on the opportunities associated with full economic utilization of forest and mill residue, an attractive investment climate, led by Government, must be created. If the barriers to investment are removed, this has the potential to expand existing secondary wood manufacturing businesses and create new bio-product (bio-chemicals/bio-energy) businesses. This will result in increased community diversification, movement toward full utilization of wood fibre, creation of jobs, decrease in GHG emissions and increased provincial and local government revenues. Combining wildfire management adaptation with other mechanisms identified above has the potential to achieve these benefits. If integrated with landscape unit planning (IFSAP), establishing the business links with fibre utilization, removal of barriers at each level of the integrated system and a commitment by the Partners to collaborate and cooperate has the potential to move toward community resiliency. **IT IS TIME FOR ACTION!** The stimulus to make it happen is **Government leadership**.