



CANADIAN ASSOCIATION OF FIRE CHIEFS  
*Fire Chiefs on the Hill, November 2018*

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Dear Dr. Poirier Roy

On behalf of the Canadian Association of Fire Chiefs (CAFC), an association representing the country's 3500 fire departments, I would like to share with you our comments on the consultation questions that you provided to us during your visit to our National Advisory Council and Board meetings in Ottawa this November. Thank you for engaging the CAFC and for championing this important initiative.

- **As you 'peer into the future', what are the emerging and future needs for fire research?**

The capacity to and process by which we predict emerging and future needs for fire research is itself important to consider. This goes beyond creating lists of pertinent topics and seeks to explore what is in our 'blind spot'. The question is where does knowledge lie and how is it leveraged? Is it in the media or unexpected current events that take us by surprise? Is it in academia where problems are identified by a variety of faculty and graduate students who are seeking to advance the state of science and solve real problems, but who must also respond to the academic mandate to keep their funding and tenure? Is it in industry, where there are cost, quality and speed considerations to balance off of each other? Is it in the Fire Service whose experiential knowledge about both the problems and solutions may not be fully leveraged in a busy and often under-resourced service delivery model?

To address this question, we would propose that the issue may be less about which areas we choose than about how we choose them. What mechanisms do we currently have to identify and prioritize fire research and testing areas? How do we bring the different pockets of knowledge together? What do other country's do? We believe that to appropriately identify and track emerging future needs in fire research, Canada needs a Fire Research Strategy and Network, that would allow us to leverage existing pockets of knowledge and identify emerging areas. At the National Institutes for Science and Technology (NIST) in the US, this is done through the development of Roadmaps for the Fire Research Division that contains the Fire Research Testing Centre.

These roadmaps are informed by a cross section of industry experts, knowledgeable staff, academics, and the fire community. It appears to be similar to the selection of strategic initiatives of our federal

granting councils. NIST looks not necessarily or only at the “emerging needs” but at the “potential impacts”, the research and knowledge could have. We would support such an approach as well. NIST also holds a National Symposium on Fire Service Research needs every five years which determines from the fire service perspective where the research needs are. It invites our counterpart associations in the US to partake.

- **What types of testing is required to meet these needs? Imagine a state-of-the-art fire research facility and think of the needs previously discussed. What design and capability features are ideal for this state-of-the-art facility?**

Since the needs may or may not be pre-determined or predictable, it would be important that a fire testing centre be structured in a modular fashion with an open floor plan to enable maximum flexibility for testing needs. We would suggest it contain capacity for positive pressure ventilation, open plan exhaust hoods, including: a 3X3 hood to look at heat release and flammability of products the size of a chair; a 6X8 meter fume hood to consider a small room with lenses to look at different positions in the room; and a larger 12X10 hood to look at smoke movement and multiple rooms. It may also be helpful to have capacity to load and impose a mass on a structure. Unlike NIST however, in Canada we must consider not only emerging and future needs, but also regular fire testing needs. We do not have the types of research testing labs that allow NIST to offload this type of activity. Just as pharmaceutical companies must pass through Health Canada regulations to market a product, do we need similar regulations in Canada as it pertains to fire testing? Are these known and understood across the country?

- **Are new materials being used or being developed for the manufacturing of a product or the construction of a structure? Are new regulations, standards or codes being introduced? Are changes to existing regulations, standards, or codes needed to keep up with the industry? Are there significant safety concerns with a current construction or operating practice in your field? Are there important gaps in our knowledge or understanding of the properties or burning behaviour of a material or product?**

We do not have a list of new materials, but we see these all the time in the public consultations around the building and fire code. For example, this year’s discussion on Encapsulated Mass Wood Timber construction for 12 story buildings is top of mind for us, where we see proposals to relax building standards, without reference to peer reviewed literature that would allow us to feel confident and reassured that this is wise and safe. We are particularly concerned that many building code proposals are put forth by industry, designers, builders, and construction companies who may have varying standards when it comes to balancing cost and safety considerations and who may not be aware of the considerations on first responders. The fire service, being publicly funded and with a mandate to serve communities rather than to generate research evidence, is at a severe disadvantage when it comes to the building and fire code process. To address this issue, we have asked the Federal Government for a \$50M fire research fund that would be driven by the fire service and which would help to bring a balanced set of perspectives to evidence informed discussions.

- **What environmental controls and safety features are necessary to safeguard the health of facility users, neighbours and the environment? Consider that the materials or substances tested may be in large quantities and are likely to emit air or water pollutants that can be irritating, toxic, carcinogenic, mutagenic, or environmentally-persistent compounds.**

We believe that these questions are essential questions that need to be part of the functional plan for

the fire research testing centre. Funding may be needed for this purpose. We would be strongly opposed to a fire testing centre that compromises the safety of residents. For this purpose, we recommend a “whole of government” approach to assessing this issue with collaboration of industry, the fire service, the HAZMAT team at Transport Canada, Public Safety, Environment Canada, NRC and the federal granting councils.

- **What ownership models should be explored? How do you see this facility being operated? What are some opportunities for partnerships? Which stakeholders might be interested in contributing to a new facility?**

We believe that the facility should either be a crown corporation or public not for profit organization run by an elected or appointed Board of Directors whose composition should include representation from the Public, Industry, Academia, the Fire Service and first responders, business leaders, and economists. The ownership model is important because of the balance of perspectives needed in a fire research and testing centre. We need to consider not just the Ottawa and surrounding region but the entire country’s needs. We must keep in mind, that unlike the National Institute for Science and Technology in the US, the NRC is our main regular fire testing centre. We would encourage continued international collaborations with organizations such as NIST since fire research and science should not be limited by borders. In addition, the Canadian Association of Fire Chiefs would be interested in having a seat at the table. We have a large number of content experts who in turn lead teams of content experts from across the country. Our counterparts in the US, at the International Association of Fire Chiefs and International Association of Firefighters do have the opportunity to work with NIST on key areas of shared priority. We would encourage this model as well.

- **What else can NRC do to meet your fire research and testing needs?**

We believe Canada needs both a fire research strategy and a National Fire Advisor Secretariat that would serve to link policy, practice and research needs. An overarching strategy will ensure that the research and testing efforts focus both on impact and on areas of strength.

Thank you for inviting perspectives from the Canadian Association of Fire Chiefs and for engaging us in this consultation. If you have any questions at all, please contact our Executive Director Dr. Tina Saryeddine at [tsaryeddine@cafc.ca](mailto:tsaryeddine@cafc.ca) or at 613-695-8462. Thank you again for considering our views.

Sincerely,



President, Canadian Association of Fire Chiefs  
Fire Chief Edmonton

*CC: Dr. Tina Saryeddine, Executive Director, CAFC Members of NAC: Chief Duane Antle (NL); Chief Ken Stuebing, Chief Kevin Eskra (SK), Chief Mike McKenna (CFFF), Chief Cameron Ambrey (NAC Co-chair), Chief Rick Arnel (ON), Chief Phil Lemire (BC), Chief Rod Nielsen (NS), Chief Jim Sawkins (NT), Chief Martin Gravel (DND), Chief Dan McCoy (NAC Chair), Chief Peter Krich (AB), Chief John Lane (Canadian Metro Chiefs) Chief Richard Amnotte (QC) Members of the CAFC Board: Chief Pierre Voisine (Cornwall), Chief Ken McMullen (Calgary), CAFC President Chief Ken Block (Edmonton), Board Members Chief Keri Martens (Lake Louise), Chief Daniel Perron (St. Levis), Chief Vince McKenzie (Grandfalls-Windsor)*