Challenge Dialogue Progress Report

May 2019

Adaptation Learning Network
INSPIRING CLIMATE ACTION
ROYAL ROADS UNIVERSITY
adaptationlearningnetwork.com

Challenge Paper Progress Report

Enhancing the capacity of BC professionals to lead and contribute to climate change adaptation

Thank you for your participation!

Please provide additional comments and feedback to Project Coordinator Beverly.2deVries@royalroads.ca on or before June 3, 2019

.

Challenge Paper Progress Report

Challenge Dialogue Participants

The Challenge Dialogue Organizing Team includes:

The *Inspiring Climate Action* Project Team:

- Dr. Robin Cox, Project Lead, Professor and Director of Resilience by Design Lab, Royal Roads University
- Dr. Dominique Sigg, Senior Policy Analyst, Climate Action Secretariat. BC Ministry of Environment and Climate Change Strategy
- Dr. Johanna Wolf, Senior Policy Analyst, Climate Action Secretariat, BC Ministry of Environment and Climate Change Strategy
- Vivian Forssman, Program Manager
- Beverly DeVries, Project Co-ordinator
- Dr. Holly Clermont, Researcher
- Asma-na-hi Antoine, Manager, Indigenous Education and Student Services, Royal Roads University

The Challenge Dialogue System® Mentor & Facilitator: Keith Jones, R. Keith Jones & Associates

***Inspiring Climate Action* sponsors** are BC Climate Action Secretariat and Natural Resources Canada.

Participant organizations include:

<table>
<tr><th>BC post-secondary institutions</th><th>BC professional associations</th></tr>
<tr><td>▪ Royal Roads University
▪ Simon Fraser University
▪ University of British Columbia
▪ Capilano University
▪ University of Northern BC
▪ University of Victoria
▪ Vancouver Island University</td><td>▪ Applied Science Technologists & Technicians of BC (ASTTBC)
▪ Association of BC Forest Professionals (ABCFP)
▪ BC Institute of Agrologists (BCIA)
▪ BC Society of Landscape Architects (BCSLA)
▪ College of Applied Biology (CAB)
▪ Engineers and Geoscientists of BC (EGBC)
▪ Planning Institute of BC (PIBC)</td></tr>
<tr><th colspan="2">Climate change experts</th></tr>
<tr><td colspan="2">▪ Pacific Climate Impacts Consortium (PCIC)
▪ Stockholm Environment Institute (weADAPT web platform)
▪ United Nations Climate Change Secretariat (UNFCCC), recently retired Richard Kinley, Deputy Executive Secretary
▪ Indigenous climate change-makers and leaders</td></tr>
</table>

Challenge Paper Progress Report

Purpose of the *Challenge Paper* Progress Report

The Inspiring Climate Action: BC Professionals Adaptation Network *Challenge Dialogue* is a collaborative process designed to gather input and build momentum to enhance the capacity of BC professionals to lead and contribute to climate change adaptation.

From April 1 to May 7, 2019, representatives who have climate adaptation expertise, plus representatives from participating organizations, were invited to assess and provide feedback on a *Challenge Paper,* a key element of the *Challenge Process. The Challenge Paper* outlined key challenges, assumptions, expected outcomes, opportunities and ideas for action, as a consultative approach to inform and shape the project. Some participants forwarded the paper to others with known expertise or interest in the subject area.

This *Challenge Paper Progress Report* provides a synthesis and overview of the responses to the *Challenge Paper.*

A full record of responses, with identity information removed, will be provided on the Inspiring Climate Action website, launching in Summer 2019. All Challenge Paper respondents will be notified of the link to *Challenge Dialogue Progress Report: Consolidated Feedback* on the website. Responses provided after May 7 are included in the *Consolidated Feedback* report.

How to Provide Further Comments/Feedback

We welcome further input to the project. Please provide additional feedback in an email or Word document, referencing the section (e.g. Expected Outcomes) and number (e.g., Expected Outcome 2.1), to our Project Coordinator Beverly.2deVries@royalroads.ca on or before June 3, 2019.

Challenge Paper Progress Report

Table of Contents

Challenge Paper Progress Report

Summary of Feedback

The *Challenge Paper* was distributed to approximately 140 people during the period April 1 to May 7, 2019. **96 people responded, representing a 68% response rate**. This response rate suggests a high level of interest in the role of professionals in climate adaptation knowledge and actions.

We heard thoughtful responses and some critiques of the assumptions that were presented in the *Challenge Paper*. The most consistent trend in the responses is variability of positions and opinions. Responses to the Key Challenge, and some of the Expected Outcomes, Definitions, and Assumptions were sufficiently diverse, and indicate that continuing consultation with this professional community will be necessary to assure that project objectives related to CPD offerings and the proposed Professional Learning Network, will meet the needs of this community.

The feedback to the Key Challenge introduced a host of themes that were then woven throughout the *Challenge Paper*. The following is an overview of the findings and a glimpse into the potential of this project.

- ensuring climate change adaptation training is useful, with professionals and post-secondary institutions co-creating courseware and testing them for efficacy;
- building on existing climate change initiatives;
- ensuring climate change adaptation knowledge and training is timely and transferrable, by creating or enhancing a sharing network with large and small educational and research institutions, think-tanks, and practitioners;
- integrating the training of members from often siloed professions to encourage and enable coordinated and collaborated climate action, policy-making and decision-making;
- ensuring professionals in rural and remote areas have access to climate change adaptation training and networking;
- understanding and incorporating the contributions and issues of Indigenous communities in climate change adaptation training and initiatives;
- providing a range of training options to address diverse needs across multiple professional organizations;
- providing current, fine-scale data and guiding professionals on how to apply them;
- including climate change mitigation or low carbon resilience in the project;

- expanding the project to engage, educate and communicate to others, beyond members of professional organizations and post-secondary institutions (e.g., political leaders, public);
- using accreditation as an incentive for members to take climate change adaptation training;
- recognizing and finding ways to address climate change denialism or skepticism, which was present among a small percentage of Challenge Paper respondents and was cited as a barrier to the success of this project; and
- addressing resource issues, such as the costs of courseware, the busy schedules of professionals, and the costs of climate action for clients of professionals.

1. Response to Key Challenge

We asked participants to respond to the key challenge framing the project which was defined as:

> "*Our challenge is to engage the collective interests and expertise of BC professional associations, post-secondary institutions, and climate change adaptation specialists to:*
> - *Design, deliver and participate in an integrated body of Continuing Professional Development climate change adaptation courseware, for members of BC Professional Associations;*
> - *Grow an active professional learning community of climate change adaptation practitioners, educators, and experts."*

Overview of responses

The Key Challenge drew 66 comments spanning multiple topics and diverse perspectives that indicated some alignment especially around

Relatively few participants explicitly agreed with the challenge statement as worded however, the range of responses included responses indicating general alignment with the key concepts. Those who expressed alignment with the challenge statement endorsed components related to: the opportunity to contribute to courseware design; support learning that was responsive and ongoing; build a community of practice that crossed disciplines; and create enduring communication channels that were "not just a website".

This feedback captured a range of miscellaneous thoughts, encompassing both general and specific suggestions for course design and content, and comments and suggestions about adaptation specialization and accreditation. People warned that Continuing Professional Development (CPD) courseware should not be comprised of PowerPoint presentations concluding with "reams of reference material" or be another climate change series that "seems to blow over quickly and get forgotten." Respondents urged us to build on existing initiatives,

such as previously implemented adaptation measures, and to remain aware of the need to stay up-to-date.

Respondents also pointed to barriers to sustainability and ecological resilience (e.g., population growth, economic drivers), concerns about navigating values discussions and trade-offs, and the need for a sense of urgency and attention to slow-moving climate-related hazards such as drought.

Other respondents indicted less alignment with the central ideas presented in the Key Challenge statement. Some questioned the core mandate of the project; several respondents were adamant about the need for adaptation initiatives to consider and include mitigation opportunities and co-benefits. A very small number of respondents were skeptics questioning anthropogenic climate change or describing it is a "glamour issue".

Within this variability, two key themes emerged. 'Involving others' was the most common identified theme, focused on the need to include people beyond the current *Challenge Dialogue* participants, such as members of other professional associations, unregulated practitioners, other educational institutions, regulatory bodies, political leaders, and the public. Within this theme questions were also raised about how professional organizations and post-secondary institutions might be integrated to maximize the impact of the project. The second theme, 'Integration among professional organizations,' emphasized the need for integration while also highlighting some of the logistical issues of integration.

Additionally, participants requested changes to the wording of the Key Challenge, including less jargon or academic language, more precision in terms such as capacity and adaptation, and some basic rationale. Some also referenced the Indigenous content in the Context section of the Challenge Paper, or the lack of it in the Key Challenge

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 1.

2. Response to Expected Outcomes

The second area for which we asked for feedback related to the stated project outcomes. Respondents were asked to provide feedback on the primary outcomes for the project, as expressed in the Challenge Paper:

> 2.1 Alignment on the meaning and significance of climate change adaptation.
>
> 2.2 Alignment on the potential for climate change adaptation Continuing Professional Development offerings and engagement in an active professional learning community, to build greater climate change adaptation capacity among BC professionals.

2.3 Identification of the **top 15 priorities** for Continuing Professional Development courseware topics (e.g. *Interdisciplinary and Collaborative Approaches to Climate Change Adaptation Fundamentals*; *Indigenous Approaches and Innovations: Climate Change Adaptation and Action; Climate Change Adaptation Risk and Vulnerability Assessments*; *Interpreting Regional Climate Data for Planning Purposes*; *Climate Change Adaptation Communications Strategies,* etc.)

2.4 Identification of the core climate change adaptation competencies to guide Continuing Professional Development offerings and professional skills mobilization in BC.

Overview of responses

Again, there were a range of responses amongst the 63 responses offered in this section indicating alignment, alignment with modification or elaboration of outcomes, and lack of alignment. A number of the responses suggested new outcomes or expanding the scope of existing outcomes. These included, for example:

- alignment on changes to professional codes of ethics;
- identifying incentives to encourage the uptake of climate change adaptation CPD by professionals;
- identifying champions for courseware topics;
- expanding the learning community to include regulators, community leaders, and the public; and
- ensuring all professional organizations contribute to the Expected Outcomes, producing tangible products shared in a document or on a web-based platform and updated as needed.

Many responses in this section offered ideas for specific courses and course objectives. Several also pointed to the process and rationale for selecting and prioritizing courseware for development, insisting it be transparent, at a minimum. It was suggested that courseware be ranked according to need, or to maximize impact.

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 2.

3. Response to Definitions

In this section we asked participants to provide feedback on the various terms being used in the context of the project. The terms we offered and invited feedback on were:

3.1 Climate Change Adaptation/ Climate Adaptation

Anticipating the adverse effects of climate change, taking appropriate action to prevent or minimize the damage they can cause to human and natural systems, and taking advantage of opportunities that may arise

3.2 Low Carbon Resilience
The concept of low carbon resilience invites the strategic integration of climate change adaptation and mitigation, such that emission reduction strategies integrate a consideration of adaptation; and adaptation strategies integrate a consideration of emission reduction.

3.3 Continuing Professional Development (CPD)
Ongoing learning that develops and maintains ***professional*** competence in workplace roles. CPD may be required to maintain certification in professional organizations; may be accessed through courses, conferences, and independent learning; and may include recognition by employers and post-secondary institutions.

3.4 Courseware
A range of Continuing Professional Development learning options, including webinars, pre-conference or other workshops, short courses, simulations, “tabletop” problem-solving exercises, software labs, etc.

3.5 Competency Framework
An inventory of expected behaviours, skills, and attitudes that lead to successful professional performance

3.6 Content Domain
A body of knowledge or competencies that can be measured or examined

Overview of responses

Many of the 56 comments in this section indicated alignment, but again for some, there was a clear misalignment. Generally, respondents wanted less jargon in the definitions and greater clarity, precision, and breadth (e.g., the definition of adaptation should include disruption to ecosystem services). Some requested examples for each definition.

One respondent noted BC's new *Professional Governance Act* - expected to come into force later this year - would influence the competency framework and content domains. [The *Act* will regulate BCIA, CAB, ASTTBC, ABCEG/EGBC and ABCFP, and will require CPD that provides "qualified continuing education' and supports Indigenous reconciliation. See https://www.leg.bc.ca/parliamentary-business/legislation-debates-proceedings/41st-parliament/3rd-session/bills/first-reading/gov49-1.]

Much of the feedback was focused on the key terms - Climate Change Adaptation and Low Carbon Resilience. A number of participants emphasized the importance of emphasizing the

connections between adaptation and mitigation, and others responded specifically to the term "low carbon resilience," suggesting that the terms resonated or, on the other hand, that it was vague and unclear.

A number of participants also requested or offered definitions for other terms, including climate change, climate data, climate change mitigation, emissions reductions, sustainability, resilience, zero carbon resilience, climate resilience, climate risk, risk assessment, risk tolerance, adaptation measures, uncertainty, trending analysis, key stakeholder community, professional learning community, human security, learning modalities, learning objectives, short/ medium/ long-term adaptations, and co-benefits.

The range of comments and responses to the key terms suggests that work needs to be done to ensure that the terms used to define the project and the project outcomes are not overly academic, are clearly defined, and recognize the inherent potential for language to be contested.

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 3.

4. Response to Background

In the *Challenge Paper* we identified and shared a sample of background documents upon which the work of this project is being built. We described how the project builds on and from the work of many other important climate change adaptation and low carbon resilience projects and initiatives in BC – including a previous scoping study (see 4.3.1, below). In this section we also reiterated the key three project deliverables: 1) a climate change adaptation competency framework; 2) a professional learning community; and 3) a minimum of 10 Continuing Professional Development courseware offerings for BC professionals focused on climate change adaptation topics, to be designed and developed by the seven participating post-secondary institutions.'

While not offering an exhaustive list, we identified several organizations that currently host climate change adaptation learning opportunities, beyond Continuing Professional Development listings by professional associations. These include the work being done by: Simon Fraser University's Adaptation to Climate Change Team (ACT), at http://www.sfu.ca/act.html; the Climate Change Adaptation Community of Practice (CCACoP) https://www.ccadaptation.ca; the Fraser Basin Council, at https://www.fraserbasin.bc.ca; the BC Climate Action Toolkit, at https://www.toolkit.bc.ca; and Climate Telling: An Indigenous community portal for climate change and health.

We also identified a number of previous surveys exploring the issue of climate adaption including: 1) the 2018 BC Climate Action Secretariat (CAS) commissioned survey: *Continuing Professional Development for Climate Change Adaptation in BC Scoping Study*, undertaken by

the Pacific Institute for Climate Solutions (PICS) and Simon Fraser University Adaptation to Climate Change Team (SFU-ACT); 2) the 2017 Kresge Foundation's review of publicly available material from 41 American professional societies entitled *Professional Societies and Climate Change: An analysis of how urban-focused professional societies are integrating climate change into their member engagement activities*; and 3) the various surveys conducted by some of BC's professional organizations, such as that conducted by the Engineers and Geoscientists of British Columbia (EGBC) in 2017 available at: https://www.egbc.ca/getmedia/412710a2-fa56-489b-9a0a-a6c7d560ec4b/Climate-Change-Survey-Findings-June-2017.pdf.aspx.

Overview of responses

As with the previous sections, there were a range of comments indicating interest in the background studies and surveys and questioning how these would be used by the project. Some responses indicated a need for further clarification as to how this background work would be used by the project, and other responses suggested that the range of studies presented suggested that perhaps the current work was unnecessary.

Many of the respondents rightly noted the significant breadth and depth of existing resources produced by experienced professionals and provided by established networks already working towards climate change adaptation. Some questioned whether new content was necessary at all, given the quality of materials that already exist. It was suggested that more energy might be put into learning how to efficiently retrieve, point to, borrow, integrate, and/or enhance existing relevant knowledge resources and data, and apply these to adaptation challenges. Other respondents recommended courseware design be led by professionals or be collaborative among post-secondary institutions and professional associations, with members field-testing and reporting what they learn.

Many respondents who reviewed the background materials were interested in knowing precisely how they related to the project at hand. "Do they underpin it? Complement it? Dovetail with it?" One asked for examples demonstrating how the project would build on this important body of work, including the scoping study and Kresge survey. Some wished to know how the background materials were chosen or prioritized over other resources.

Again, here as in other sections, there were suggestions that other organizations, associations, or sectors needed to be engaged in the project. For example, one suggested certain weather-dependent sectors such as ski resorts and food services might be especially interested in education to better understand impacts and tools to mitigate and adapt.

Throughout this section, respondents offered suggestions for other important background material, referencing other survey materials which are listed below in Table 1, with additional courseware resources in Table 2.

Challenge Paper Progress Report

Table 1. Surveys suggested by Challenge Paper respondents

Organization	Description	Resource or Link
CAB and Alberta Society of Professional Biologists	2015 climate change adaptation project survey of members	*College Matters,* Vol. 8, Issue 1, March 2016
ICLEI Canada	Making Strides on Community Adaptation survey of local governments and climate change adaptation experts, 2016 report	http://icleicanada.org/images/Making_Strides_on_Community_Adaptation_Final.pdf
American Society of Adaptation Professionals	Distributes an annual survey of the State of the Adaptation Profession which covers personal practice, role, domain, position, experience, education, professional affiliation, and perspective on the state of the adaptation field	

Table 2. Courseware resources suggested by Challenge Paper respondents

Organization	Description	Link
American Society of Adaptation Professionals (ASAP)	Network of, and professional society for, climate change adaptation professionals across North America. ASAP hosts virtual and in-person peer learning and exchange opportunities, a mentorship program, and a bi-weekly curated newsletter.	https://adaptationprofessionals.org/
Antioch University, Center for Climate Preparedness and Community Resilience	Delivers applied research, consulting, and education and training	https://www.communityresilience-center.org
Canadian Association of Physicians for the Environment (CAPE)	2019 Climate Change Toolkit for Health Professionals	https://cape.ca

Challenge Paper Progress Report

Organization	Description	Link
Canadian Centre for Climate Services	Multi-disciplinary team with expertise across a broad range of climate-related disciplines that works to support implementation of the Pan-Canadian Framework on Clean Growth and Climate Change	https://www.canada.ca/en/environment-climate-change/services/climate-change/canadian-centre-climate-services.html
Capilano University, Earthworks	Free lecture, film and field trip series open to the public	https://www.capilanou.ca/student-life/campus-community/earthworks/
Capilano University, Environmental Studies degree (in development)	Degree in development with several courses embracing climate change adaptation	not yet available
Climate Access	Non-profit organization building support for climate solutions through a learning center, piloting innovative engagement projects, and providing strategic consulting services	https://climateaccess.org
EcoAdapt, Climate Adaptation Knowledge Exchange (CAKE)	Consists principally of 4 interlinked components: case studies, virtual library, directory, tools	https://www.cakex.org/community/directory/organizations/ecoadapt
Engineers Canada, Public Infrastructure Engineering Vulnerability Committee (PIEVC)	PIEVC protocol to assess the vulnerabilities of infrastructure to extreme weather events and future climate change. Infrastructure Resilience Professional Certification.	https://pievc.ca
Georgetown Climate Center, Adaptation Clearinghouse	Online database and networking site that serves policymakers and others	https://www.adaptationclearinghouse.org
ICLEI Building Adaptive & Resilient Communities (BARC)	BARC includes networking platforms, online tools, and a full program to help communities	http://www.icleicanada.org/programs/adaptation/barc

Challenge Paper Progress Report

Organization	Description	Link
	respond to and prepare for climate impacts	
Infrastructure Canada, Climate Lens	requirement applicable to some Infrastructure Canada programs, includes climate change resilience assessment. ISO standards have been useful in the Climate Lens process.	https://www.infrastructure.gc.ca/pub/other-autre/cl-occ-eng.html
International Organization for Standardization (ISO)	e.g., ISO 31000 Risk management. ISO standards related to climate are being developed at a rapid pace, and can manage processes to apply competencies efficiently and effectively.	https://www.iso.org/iso-31000-risk-management.html
Marine Environmental Observation Prediction and Response (MEOPAR) Network	Non-profit organization that funds research, mobilizes knowledge, communicates results in the area of marine risk and resilience	http://meopar.ca
Model Forest Policy Program, Climate Solutions University	Leads communities through a forest and water climate adaptation planning process	https://www.mfpp.org
Northern Arizona University, Institute for Tribal Environmental Professionals, Tribes and Climate Change Program	Provides information and resources tailored to helping Native people gain a better understanding of climate change and its impacts	http://www7.nau.edu/itep/main/tcc/
RRU and CRC Research, Meeting the Climate Change Challenge (MC3)	An interdisciplinary cross-institutional research project to explore innovative local responses to climate change	http://www.mc-3.ca
Ouranos Consortium on Regional Climatology and Adaptation to Climate Change	Innovation cluster and consultation forum enabling	https://www.ouranos.ca/en/

Challenge Paper Progress Report

Organization	Description	Link
	Quebec society to better adapt to climate change	
Prairie Climate Centre, Prairie Climate Atlas, Climate Atlas of Canada	Interactive tool for citizens, researchers, businesses, and community and political leaders to learn about CC; PCC instructing landscape architects on use of tools	http://prairieclimatecentre.ca
Shift Collaborative and Interior Health, BC Climate Health Network (formerly BC Climate Change Health Policy Group)	Learning network focused on the intersections between climate change, health and resilience. Hosts regular learning events on health and climate change.	https://www.climatehealthbc.ca
Stewardship Centre for BC, Green Shores program	Provides options and tools for ecologically friendly shoreline development	https://stewardshipcentrebc.ca/Green_shores/training/
UBC, School of Community and Regional Planning (SCARP)		https://scarp.ubc.ca events https://scarp.ubc.ca/events-calendar
University of Fraser Valley, Geography and the Environment	courses	https://www.ufv.ca/geography/programs/
University of Victoria, Pacific Climate Impacts Consortium (PCIC)	Regional climate service centre that provides information on the physical impacts of climate variability and change in the Pacific and Yukon Region of Canada	https://pacificclimate.org
University of Waterloo Flood Policy Research Group	Interdisciplinary group of researchers working to support Canadian flood policy	https://uwaterloo.ca/canadian-coastal-resilience/affiliated-groups/flood-policy-research-group

Organization	Description	Link
weADAPT	Collaborative platform on climate adaptation issues. Allows practitioners, researchers and policy-makers to access credible, high-quality information and connect with one another	https://www.weadapt.org

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 4.

5. Response to Assumptions

Section Five requested responses to the project assumptions. 63 respondents provided comments on one or more of these assumptions. The assumptions are outlined below with an overview of the comments provided for each assumption explored.

Overview of the responses

5.1. Professionals, especially those operating at a local level, play a crucial role in building resilience to climate change.

Half of respondents were aligned with this assumption, one advocating for mandatory training to ensure professionals could effectively perform in this role. Those who disagreed with the assumption believed professionals were beholden to clients and corporate interests or constrained by AHJs [Authorities Having Jurisdiction]. One requested evidence to support the assumption.

5.2 Professionals will require new knowledge and skills to address climate change adaptation challenges and professional responsibilities.

Most respondents were partly aligned with this assumption. They contended many professionals were limited by constraints that prevented or discouraged trying new approaches, or by access to consensus impact projections and best adaptation practice documents, rather than knowledge or skills.

5.3 Professionals will require jurisdiction-specific, sector-specific and cross-disciplinary knowledge to navigate complex and dynamic climate change adaptation challenges.

While some viewed this assumption as self-evident, others felt it was too general; not every professional required all of these forms of knowledge.

5.4 Collaboration between regulators and professional organizations will help to build capacity for climate change adaptation

Respondents elaborated on this assumption, suggesting the behaviour of professionals could be encouraged by changes to standards or codes of ethics, and that education must extend to the regulators and politicians that would create or enable regulations for climate adaptation. One wondered how this type of collaboration could be accomplished [consider consultations and processes associated with forthcoming *Professional Governance Act*]. Some advocated for involving others such as researchers and non-profit organizations, reinforcing a consistent theme in this report.

5.5 Climate change adaptation Continuing Professional Development should complement and build upon related existing professional development initiatives, rather than overlap and compete with those existing offerings.

Nearly half of respondents to this assumption explicitly aligned with it, while the others implied agreement. They recommended getting to know the current level of knowledge, building on and modifying rating systems and standards, eliminating or refreshing old courses with incompatible objectives, and recognizing specific geographies and the unique capabilities of local or specialized institutions to provide climate adaptation education.

5.6 Climate change adaptation Continuing Professional Development will require a specialized set of competencies (e.g., problem-solving, design thinking, etc.).

While some respondents recommended competencies for climate change adaptation (e.g., systems thinking, strategic thinking, problem solving, risk management, understanding of probability and uncertainty), others put forward an opposing assumption: Generally, climate change adaptation does not require a new set of competencies since it is should not be considered a specialization. Rather, competencies should be transferrable from, or integrated with other professional skills and accountabilities.

5.7 Climate change adaptation Continuing Professional Development courseware benefits from the integration of Indigenous worldviews, practices, science and other knowledge.

Those who agreed with this assumption believed Indigenous worldviews, showcasing systems and place-based principles, would strengthen courseware and advance reconciliation. Although no one appeared to disagree, one felt an Indigenous slant might distract certain people from focusing on the urgent matter of adaptation. Another wondered whether Indigenous knowledge systems were sufficiently formalized to support courseware development.

5.8 Professionals and communities working to advance reconciliation and build respectful relationships with First Nations are often the most successful in moving forward on collaborative, innovative and long-term climate change adaptation efforts.

Most respondents believed this assumption to be unproven, and somewhat dismissive of efforts that had not included First Nations.

5.9 Climate change mitigation efforts should not undermine adaptation efforts, and adaptation efforts should not undermine mitigation efforts, whenever possible. Low carbon resilience requires addressing these challenges simultaneously.

Fully half were aligned with the assumption statement. A quarter of responses indicated confusion or misunderstanding about the term 'low carbon resilience'. Other respondents had difficulty with the absence of prioritization when addressing mitigation and adaptation simultaneously - one believing mitigation was more important, another seeing adaptation as most important when considering human safety, a third believing mitigation and adaptation needed to be 'balanced', a fourth seeing mitigation and adaptation as requiring mostly separate responses.

5.10 Climate change adaptation Continuing Professional Development curricula, courseware, and tools that already exist in other regions could be modified for our region and/or scaled up.

Most respondents to this statement were in agreement. One warned that a one-size-fits-all agenda could preclude important insights.

5.11 Government policy and regulations may necessitate certain climate change adaptation Continuing Professional Development offerings.

Some agreed with this assumption statement, some had difficulty understanding it, and some communicated their disparate interpretations of it. Climate regulations might precede a need for professionals with requisite skills, professionals may influence decision-makers to update regulations and policy, or clients and others may influence whether certain regulations and policies come into being or whether particular skills will be needed.

5.12 Climate change adaptation Continuing Professional Development needs to draw on the existing knowledge of learners, consider multiple perspectives, provide theory but focus more on practical examples, and integrate learning-by doing activities.

Most respondents agreed with this assumption or wished to add other elements for consideration, such as best available science, the codes and standards by which professions are governed, and *informed* perspectives. One felt the statement was too prescriptive, since existing knowledge could be inadequate, and a practical focus might limit outcomes.

5.13 Climate change adaptation Continuing Professional Development should be accessible (e.g., regional offerings) and suit different learning styles (online, blended and face-to-face) and regardless of the way it is offered, should support active and experiential learning.

There was nearly complete agreement on this assumption, with some suggestions for additional wording (i.e., on-demand learning, supporting relationship-building and cross-disciplinary collaboration).

5.14 A social learning community (e.g., a network) that shares practices and integrates diverse disciplinary knowledge and skill sets could inspire the types of innovations that are and will be required for climate change adaptation.

In response to this assumption statement, people offered a number of ways to build and enhance a social learning community. They suggested holding design competitions, including traditional knowledge and art components to stimulate discussion, and building communities of practice to develop best practices within a region. They recommended leaders, facilitators and/or moderators, as well as motivations for engagement and rewards for innovation. They wanted to see the network as a safe space for sharing information, including failures. They suggested building a network that could identify areas where professional development was unavailable and needed, and that could help connect rural professionals to experts across the country.

6. Responses to Critical Questions

This section invited responses to a series of what we identified as Critical Questions. These questions related to specific challenges related to climate change and climate adaptation that BC professionals are facing in their work.

Critical Question 6.1: The first question asked respondents to think of a climate adaptation challenge they face or might face in their work and identify the types of knowledge and/or skills they might require in order to respond to that challenge.

Overview of responses

Of 57 responses, few were alike (Table 3). Many respondents identified one or more challenges or a need for resources, some not linking the two.

Table 3. Climate change adaptation challenges facing Challenge Paper respondents

Theme	Challenges	Needed Resources
Impact issues - direct	health (air quality, wildfire, extreme heat); unpredictable weather; sea level rise	understand climate processes; integrate post-disaster response and recovery with long-term resilience; models/projections to envision sea level rise and other potential impacts and the skill to evaluate strengths and weaknesses of models, natural

		shoreline protection design; improved calibration and use of the Landscape Level Drought Tool
Impact issues - ecological	shifts in water quantity; increased pressure from invasive species; adapting forest management; Yellow Cypress (Yc) dieback;	new species selections, area-based forest tenures, long-term stocking objectives for silviculture/planting, understanding shifts in variables (e.g., aspect, elevation); fire/fuel/disease/insect mitigation options, objectives, strategies; modeling and monitoring of Yc
Impact issues - built	sea level rise impacts to ports and international freight and travel terminals; heat impacts to paved surfaces; range of electric vehicles; suitable building materials to meet passive building requirements, resources (e.g., appropriate plants) for creating resilient landscapes	economic and systemic analysis to mitigate impacts, assess impacts to trade, etc.; road surface temperatures, planning for safety; how to carry out a climate risk assessment in multiple phases and iterations throughout a design-build process; understanding of barriers faced by building and planning professionals
Impact issues - economic	funding for projects; costs of inaction; smaller municipalities may not have sufficient resources for climate adaptation; property acquisition;	business case for incorporating climate adaptation into engineering, municipal infrastructure; in-depth knowledge of risk
Impact issues - social	lack of awareness; maladaptive attitudes, behaviour, norms; legal; leadership; responsibility for identifying adaptation priorities is siloed from units charged with implementation; skeptics; regulations, policies and standards inhibiting climate action; client risk tolerance; mental health issues (anxiety,	basic understanding of climate change at a conceptual level; ? for transformational change; the chance to experiment or fail without incurring liability; organization management and public administration knowledge and skills; communication and engagement to incorporate local

	grief); socializing adaptation across organizations, mainstreaming adaptation into existing workplans and processes;	knowledge and promote buy-in; coping skills underway: climate change awareness in accreditation standards for professional education (engineering technology)
Impact issues - general	complexity; uncertainty	cross-sector knowledge exchange; flexibility to respond to uncertainty, adaptive design, and the ability to communicate the range of options available; monitoring data
Approaches/applications	green resilience, green infrastructure, natural asset management; reclamation of Crown lands by industry	skills to diagnose vulnerabilities and build resilience in complex systems; portal for summaries of projects with successful outcomes; state of knowledge on my challenge; easy access to current, peer-reviewed resources/tools; human resources with whom to discuss the challenge and/or proposal in an integrated design process
Other		quantifiable health and emissions reductions co-benefits; mitigation [?] benefits of biodiversity conservation and protecting forest stands on an over-harvested land base

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.1.

Critical Question 6.2 asked respondents to identify and describe what they consider as priorities for climate change adaptation.

Overview of responses

There were 62 responses spanning a wide range of topics, including issues related to climate impacts such as wildfire and extreme weather, social issues such as equitable adaptation and

cultural transformation, and infrastructure, building, and landscape design. Nine of the most popular themes are summarized in Table 4.

Table 4. Challenge Paper respondents' top 3 priorities for climate change adaptation CPD

Theme	Priority CPD topics	Comments
Accessing and using climate change data, tools	The science of climate change - how it works, the evidence, how it is modeled, key terms for understanding the current science; basics of climate change - how the climate system works and how anthropogenic activities affect it; how to use climate data; understanding climate projections, uncertainties and extreme events in the local context; strengths and weaknesses of predictive models; how to acquire or interpret climate data for site specific projects to use as part of engineering design; how to use Climate Atlas and other tools; obtaining useful data and applying it to landscape design; Plan2Adapt updated and expanded; What model are we using and why? - aligning climate change projections with strategic directions at different temporal scales; top climate change impacts to be experienced in Canada and its regions and implications for health, economy, infrastructure and ecosystems; regional climate information; mapping problem areas; weather forecasting and modeling; meteorology; seasonal variations and cyclical patterns; using best available information	
Accessing adaptation knowledge, innovations	Adaptation 101 - what is it, what are the projections under different emissions scenarios, what are the impacts now and in the future, what is already happening in Canada and abroad; adaptation resources and where to find them; overview of the climate adaptation toolbox in forestry; using the Landscape Drought Tool to guide forest management decisions; tools for mapping climate vulnerabilities; quantifying co-benefits; understanding the adaptation knowledge ecosystem and how to access and implement innovative solutions; science-policy interface - moving from science to application; taking advantage of a changing climate; understanding climate resilience and how to operationalize it; ease of adopting new technologies; case studies - successes and failures; development and implementation of climate adaptation plans - or resilience plans - for a variety of audiences,	
Communication and engagement	interpreting and communicating the science; climate communication and engagement; community mobilization;	Also: frame climate action as a battle; establish a public TV cable channel and Internet site curated by UN/NOAH dedicated to climate

Challenge Paper Progress Report

Theme	Priority CPD topics	Comments
	communicating climate change, adaptation to clients, politicians, decision-makers, public; achieving transformative change; communicating climate risk; climate action co-benefits	change awareness, consider relevance to the general public, changing culture, long-term plan to ensure positive habits are supported; study into skepticism among engineers and technologists; critical thinking and objective thinking
Ecological topics	plant and animal resilience; planting/habitat design for changing climate; trees for the future; species adaptation, selective breeding for resilience; species and seed selection tools for resilience; maintaining forest productivity; ecological basis for species selection in reforestation, stand tending and selection harvesting; managing forest fuels outside of interface zones; forest health, species and seed source selection, predicting tree/stand stresses; reducing emissions from deforestation and protecting ecosystems; maintaining biodiversity through CC-informed reserves and protected areas; Using the Landscape Drought Tool to guide forest management decisions; maintaining freshwater systems; maintaining terrestrial systems and wildlife populations; species mix to plant; tools to reforest our changing ecosystems; biogeoclimatic zone shifts and potential yield impacts for transition types	
Risk	Integrated climate risk/resilience assessments; understanding risk and uncertainty in a changing climate; translating risk assessment into interventions; helping laypersons understand risks and cost-benefits of solutions; taking action amidst uncertainty; limits to adaptation - uncertainties that confound adaptation planning; how risk and vulnerability are determined; scenario planning and risk/vulnerability assessments; communicating climate risk; tools for mapping climate vulnerabilities; principles for	Also: not the high-level stuff but actual technical tools and application from a financial or asset risk manager; At what level of global change do specific adaptations become ineffective?

Theme	Priority CPD topics	Comments
	decision-making with incomplete data, uncertainty	
Economic topics	Costs of inaction; Professional liability and costs (to professionals) of inaction; helping clients/ laypeople understand risks and cost-benefits of climate solutions; how to pay for adaptation (with specific, real-world examples)	Also: ecological economics, cost-benefit analysis, green economies, cost of new adaptation technologies, better economic evaluation tools
Teamwork, collaboration	Teamwork; collaboration; Building collaborations; integrating multiple stakeholders; understanding multi-disciplinary, multi-sector collaboration/how to design efficient collaborative processes for design, planning and shared learning, Coordination for climate adaptation - tools and training to enable coordination between various levels of government and the public; understanding interdependencies; update resources to reflect interdisciplinary focus; social networks; promoting inclusive planning and action	
Indigenous topics	Decolonizing approaches; Indigenous worldviews, practices, knowledge, perspectives; Indigenous-led land stewardship; incorporating Indigenous knowledge into planning, collaborating with Nations	Delivery: workshops, seminars, conversation approaches
Resilience	What is resilience and how do I build it?; integrated climate risk/resilience assessments; resilient decisions, adaptive designs; understanding climate resilience and how to operationalize it; community resilience; developing and implementing climate adaptation/resilience plans for a variety of audiences	Also: topics that use a green resiliency framework (i.e., brings together mitigation and adaptation)

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.2.

Critical Question 6.3 explored the design of Continuing Professional Development (CPD) courses asking respondents to describe the top 3 design elements they would look for in CPD courseware.

Overview of responses

Fifty-seven people responded to this critical question. Two of the top three responses overall were related to accessibility - including price, and accreditation while the other top response focused on the need for practical, applied content, preferably relevant to a particular geography and including Indigenous knowledge, with field work or other hands-on or experiential learning.

Although most accessibility recommendations were related to price, the term was also applied to flexibility in the timing and duration of courseware; learning opportunities for rural, remote and Indigenous communities; reduced travel/low carbon learning opportunities; and disabilities.

Although a few respondents were opposed to some or any accreditation, most were in support of it - with caveats. Accredited courseware should include practical experience, link to the province's professional reliance requirements, be appropriate to one's area of expertise, be delivered by qualified agencies, and be recognized by associations and supported by employers. Several felt accreditation would serve as an incentive to take climate change adaptation courses.

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.3.

Critical Question 6.4 asked respondents to consider how they integrate Indigenous ways of knowing and practice (e.g. intergenerational knowledge and expertise) in their own professional adaptation practices. Indigenous communities draw on local, intergenerational knowledge and expertise to innovate and adapt. How do/will you integrate Indigenous knowledge and practices with your own professional knowledge and practices?

Overview of responses

Many of the 56 respondents pointed to direct, sustained involvement with Indigenous communities as a way to integrate their knowledge and practices. Recommendations included:

- Employing and facilitating dialogue or collaborating with Indigenous experts, government and spiritual leaders, knowledge-holders, elders, youth, and other community members;
- Including Indigenous participation over the course of an entire project, through design, development, and delivery;

- Valuing and advocating for Indigenous-led programs and projects, and redesigning existing programs and projects to include Indigenous participation and approaches (e.g., long-term thinking);
- Showcasing projects that incorporate Indigenous knowledge;
- Acknowledging territory and continued Indigenous relationships with the land;
- Developing and honouring formal agreements, respecting protocols, and ensuring there is space for ceremony;
- Coordinating requests, to reduce demands on groups with limited capacity;
- Being flexible with timelines, to encourage and facilitate participation;
- Ensuring funding is available, and appropriate remuneration and hospitality are provided for engagement;
- Including Indigenous monitoring programs; and
- Consulting "in good faith and in partnership" [collaboration?]

Relationship-building was key to integration. This entailed 'engaging in a social process' that involved seeking out conversations, offering and sharing information and knowledge, and cultivating cultural sensitivity - including an understanding of privilege and reconciliation.

There was interest in weaving Indigenous ecological knowledge and principles with western science to guide adaptation (e.g., considering cultural keystone species, paying attention to nature's signals, using ecosystem-based management).

Several pointed to a need for, or genuine interest in Indigenous-led or Indigenous-focused courseware, including field sessions. One respondent indicated Indigenous culture competency courses were offered at work, and another linked an upcoming EGBC seminar on the value of Indigenous engagement. Some respondents, however, appeared to be quite unfamiliar with Indigenous contributions and issues, suggesting there is some merit in efforts to raise awareness on this topic.

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.4.

Question 6.5 again focused on Indigenous communities, asking respondents to identify and describe how they and other working professionals support the resilience of Indigenous communities and peoples.

Overview of responses

This question elicited 54 responses with themes similar to those found in feedback to Critical Question 6.4 - namely that supporting the resilience of Indigenous peoples and communities required direct involvement, relationship-building, and a focus on such things as understanding and respecting Indigenous protocols, and reconciliation. While a few respondents refuted the premise of this question, others reiterated and elaborated on the need to address the challenges that would disproportionately affect Indigenous communities. Supporting self-

determination was a prominent theme - how to encourage and facilitate it, and to avoid limiting progress in this arena. Respondents also suggested designing educational initiatives to enable Indigenous people to fully participate in adaptation efforts. Noteworthy was a single comment indicating that some of the most intact ecosystems are on Indigenous lands, and these are likely to be foundational to successful climate change adaptation.

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.5.

Critical Question 6.6 focused feedback on the need for or role of a distinct, BC online professional community of practice or network, focused on BC Professionals working in climate adaptation, and if so, what services would it provide?

Overview of responses

Few of the 55 respondents to this question were opposed to a new climate change adaptation network. Those who were unsure whether there should be a new network expressedg concern about overlaps with existing networks such as the BC Professional Associations Adaptation Working Group (PAAWG). Other comments reflected a concern about whether Professional Associations had the capacity and staff to build and maintain a network, and whether a need for a network truly existed. Many respondents suggested a range of services that a network might provide, including:

- identifying and closing gaps among professionals and disciplines (e.g., developing interdisciplinary tools);
- supporting the development of sector-specific practice guidelines;
- facilitating sharing of knowledge, best practices, and skills as well as peer learning, mentorship and other forms of professional networking;
- facilitating knowledge-sharing among professionals, academia, and government, to discuss problems, identify and implement responses or solutions, and evaluate the effectiveness of these measures over time;
- hosting a research and resource library, including latest findings and case studies;
- maintaining a database that documents who is working on what and where, so professionals can draw on experience and expertise, build on what has been learned, and develop collaborative relationships;
- providing profiles of members with contact information and areas of expertise and interest;
- centralizing access to climate-related technical information, tools, models, policy and legislation;
- providing news and updates from Pacific Institute for Climate Solutions (PICS), Pacific Climate Impacts Consortium (PCIC), Fraser Basin Council (FBC), and others;
- hosting conferences that include multiple professions and disciplines;

- hosting webinars, podcasts, discussion boards, speaker's bureau/series, and/or regular online forums;
- hosting on-site events (e.g., post-disaster charrettes); and
- directing people to training.

Respondents also suggested design elements to sustain active communication, maintain the site, and organize materials (e.g. by region or theme) in a network were it to be created. Two of the key models suggested for consideration in the design of BC Professionals Adaptation Network were:

1) American Society of Adaptation Professionals, focused on establishing benchmarks of success and excellence for the field, fostering innovation, and creating a community to share and support one another; and

2) Government of Canada's Centre for Climate Services

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.6.

Critical Question 6.7 asked respondents for advice on how professional associations might encourage their membership to consider and address current and future climate impacts.

Overview of responses

54 respondents made numerous suggestions as to how associations could encourage climate education and action among their members. These included:

- requiring climate change adaptation training and competencies - for example, including climate education as part of achieving a professional membership, to accent professional designations, or to meet annual continuing education requirements;
- creating and/or requiring adherence to standards of practice, professional practice guidelines and policies that include climate change;
- creating and regularly updating best practices documents;
- including climate change in position statements or papers;
- creating climate action plans for the association;
- including climate change in vision or mission statements;
- including climate change in codes of ethics;
- establishing committees;
- offering awards and other incentives for note-worthy climate change adaptation activities;
- including climate change in conferences, forums, and other events;
- including climate change in association publications;
- showcasing stories from members already incorporating climate change into their work;
- weaving climate education into existing courses;
- ensuring association leaders were visible champions of climate action; and

- lobbying government for regulatory changes;

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.7.

Critical Question 6.8 focused on the idea of competencies (skills, knowledge, ability) and whether climate change adaptation competencies should be a required part of CPD courses and accreditation.

Overview of responses

Most of the 57 respondents to this question supported mandatory climate change adaptation competencies and training - some with certainty, others with reservations. Those who opposed mandatory training were either climate skeptics, predicted that it would split the profession into specialists and generalists, or felt it was an unnecessary step. One respondent felt certain criteria should be met prior to making climate education mandatory - namely the quality of the education must be high and the effectiveness of the training well established.

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.8.

Critical Question 6.9 explored with respondents the barriers they thought we were likely to face with this project.

Overview of responses

Among 54 respondents communicating their top 3 barriers to the project, there were four main themes: resource issues, uptake of courseware by members, integrating independent professionals, and a lack of regulations. Resource issues were most predominant, including a) funding and time for busy professionals to undertake climate-related training, b) the added costs of integrating and adopting climate solutions, and c) limited funding and human resources to encompass the broad goals of the project and to sustain it over time. For a), recommended solutions included facilitating extended "peer learning" with appropriate course materials (i.e., one or two take a course and communicate to other employees what they learned), economic accommodations, and making it easy and cost-effective to access trustworthy information. For b), solutions included developing partnerships or collaborations; creating pilots; developing adaptation initiatives that generate income, recover costs or piggyback on other initiatives; developing business cases demonstrating the cost of inaction; and creating education campaigns with popular entertainers. For c), solutions included phasing initiatives "to do fewer things well rather than many things adequately", beginning with modest expectations, and focusing course offerings on policy and practice change that will have critical impacts,

Uptake of courseware by members, and their associations more broadly, was perceived as a significant barrier - and not just because of the cost and time to attend courses. Respondents

cited apathy, complacency, inertia, "resistance to change", "entrenched ideas and practices", "not seeing the relevance", and cultural norms as potential obstacles. Recommendations included planning *now* for how to get courses to professionals (including marketing), cross-pollinating annual meetings and conferences, consistent messaging from leadership, incentives for training, mandatory training, demonstrating practical benefits through successful case studies, and dialoguing with members - "meeting them where they are".

Efforts to integrate siloed professional disciplines were equated to "herding cats". Professionals and professional organizations were described as having distinct interests, entrenched processes, and diverse needs for applied skills and knowledge - none of which were amenable to integration. The range of potential solutions included developing an action plan with only a core overlapping commonality to link professions together, making a business case, developing a coordinated approach to funding adaptation initiatives, developing trusting and strong relationships, and ensuring criteria are not imposed from without. A notable comment pertained to competition arising from the project's mandate for producing artefacts such as tools, frameworks, case studies that would be creative commons licensed to ensure their wide distribution and ensure accessibility. Some questioned whether this approach would require people to share proprietary information or tools in ways that undermined their potential to market these themselves, or that would undermine their competitive advantage.

In addition, numerous respondents identified a lack of regulations requiring climate action as a potential barrier to action, as well as a perceived lack of political will to prioritize climate action.

Respondents also identified many other barriers: climate skeptics, differing ideologies, the economy versus environment divide, 'preaching to the choir', the attitudes of experts, academic versus practical, too little collaboration between professionals and academics, clarity versus uncertainty in climate science, a lack of coordination - resulting in duplication or wasted effort, short-term priorities, beliefs that climate change impacts will be felt slowly, difficulties sustaining First Nations involvement, unresolved land claims and resource issues with First Nations, challenges affecting continuity of the project (e.g., new risks, waning interest), excluding climate change mitigation objectives, professionals' inability or unwillingness to advocate for cilmate adaptation, cognitive barriers such as spatial and temporal discounting, lack of mandatory training requirements, positivism in professional organizations, translating learning into action, feelings of helplessness, geographic proximity of educational opportunities and on-the-ground needs, and lack of a common language.

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.9.

Critical Question 6.10: the final question, invited respondents to suggest other questions or concerns that we should be exploring as we initiate this project.

Overview of responses

Challenge Paper Progress Report

Critical Question 10 and Next Steps captured ideas and comments that did not fit elsewhere or were summative thoughts generated after reflecting on the paper (e.g., omissions). This overview focuses on additional questions raised by 37 respondents.

Several questions were raised about learning from and building on existing experiences and initiatives. *What are other jurisdictions in Canada doing? What processes already exist that could be tapped to advance this process? What are the major funding sources now available and where are climate change adaptation initiatives placed in the priorities of funding organizations and patrons?*

Other questions raised in this section concerned ideas related to continuous, applied, networked learning. *What institutional incentives do we need to design so that resilience thinking is applied and refined through learning in practice? Who is responsible for tracking and reporting results as a region/nation and getting this information out to the public and professionals? How is my strategy affecting the whole? How do we structure this work as a 'continuing adaptation' framework?*

A few questions addressed the apathy concerns mentioned in Critical Question 9. *What kind of innovative approaches can we use to try to reach those professionals who do not believe climate change is real or important? How do we make this something that people don't just have to do, but that they want to do?* At the same time, some respondents *were* concerned about information overload for those who were already invested. *There is a fire hydrant spewing information on CC; people are overwhelmed. How can we develop trustworthy source(s) to distill information for practitioners?*

Some respondents wondered how to spark and sustain climate action, including mitigation. *How can climate change be integrated into an organization? How to cultivate champions within professional associations and their primary employers? What are the most powerful policy and practice levers/ actions to mitigate climate change impacts within each of the professions? What are the ways to combine low carbon resiliency/zero emissions living with adaptation?*

Another inquired about expanding the reach of the professionals' network. *How to engage procurement professionals to let them know that they can require adaptation capacities from the professionals that they hire?*

To see quotes illustrating the key thing themes and demonstrating the range of responses see Appendix A, Section 6, Question 6.10.

7. Feedback on Next Steps

Section 7, the final section, focused on next steps and invited respondents to share any questions or comments they had about next steps. We offered an overview of the project's process including this Progress Report (compiling the survey feedback) and its role in helping to shape next steps for the project, and mentioned the Challenge Dialogue Report which will be issued sometime around the end of June, 2019 and will include an action plan.

Overview of responses

Several questionnaire responses referenced the importance of a gap analysis, suggesting that respondents wanted more information regarding:

- surveys of the adaptation community;
- results or data from any internal reports or evaluations of the effects and acceptance of existing CPD systems, and the extent of participation and completions;
- map of existing professional development materials/training/activities, toolkits, etc. and organizations delivering services;
- adaptation tools and learning for smaller communities;
- information on courses, sessions, and webinars that professional associations have provided on adaptation in the past 2 years;
- map of professions, professional associations, educational programs, and research centres; and
- certification schemes that are currently in place in the target groups.

Notably, the Challenge Dialogue project builds on earlier analyses by PICS and SFU-ACT to address some of these gaps.

In addition to the Challenge Paper Progress Report and Final Report, this project will publish in July 2019:

- the results of a survey of the memberships of participating BC professional associations.
- an inventory of existing professional development courseware offerings in BC (for the period January 2018 – present) that are linked to the websites of participating professional organizations or in continuing education calendars for participating post-secondary institutions, and
- a table that summarizes CPD requirements for participating professional organizations.

Appendix A: Feedback related to the Key Challenge Statement

Section 1: Feedback on Key Challenge

Challenge Paper Progress Report

Quotes illustrating the key themes

Involving others:

- *Great to have a group of experts but need to make sure we also engage with politicians, residents, regular designers etc. - key will be integration of the science into policies and practices. Also make sure the group does not become climate "snobs"....*
- *I was disappointed to see that the Inspiring Climate Action stakeholders were only Universities, no colleges or Institutes of Technology such as Camosun, BCIT, Kwantlen, which I know are all deeply involved with and committed to climate change education and mitigation....*

Integration among professional organizations:

- *How would integrated CPD between associations work? Would there be a third party body - how would it be paid?*
- *Integrated approaches to recommendations & policies are imperative. So, each profession must understand & respect what the other professions have to offer.*

Examples of range of feedback

- On wording: *One suggestion would be to add some more detail of what is meant by capacity-- mindsets, collaboration, knowledge, skills, resources? All of the above, just some of the above?*
- On Indigenous content: *Our key challenge is to engage the collective interest and expertise of indigenous knowledge keepers, old ones, leaders and community members as well as professional associations, post-secondary institutions etc. Indigenous worldviews and science has to be forefront in this.*
- On specialization: *I'm not sure there is such a thing as a "climate change adaptation practitioner." I don't think adaptation is a field of practice. Engineering, biology, forestry, city planning: these are fields of professional practice. And each should consider climate change in its own way. Adaptation needs to be "baked in" appropriately in each.*
- On CPD content and delivery: *Making it more digestible by keeping it current and often rather than having large training seminars that are information heavy all at once.*
- On CPD content and delivery: ...*We likely need a core set of modules that provide basic education on climate change and the twin pillars of adaptation and mitigation that everyone should take (as long as they are really well designed), so establish consistent, common understanding. From there we need two key streams of education: One, based on what the individual professions need, i.e., what is already covered in their certification and training, what are the pressures on them, how do they do adaptation, and how does adaptation get mainstreamed into their daily practices; Two, scenarios and workshop exercises on how they can work together and innovate...*

Challenge Paper Progress Report

Section 2: Feedback on Expected Outcomes

Quotes illustrating feedback to numbered Expected Outcomes

- *2.1 Climate change adaptations mean different things to different people in different professions and in different locations so this is a meaningful expected outcome.*
- *2.1 - we believe we can't separate, nor should we separate, climate mitigation strategies from climate adaptation strategies.*
- *2.2 Promote proactive responses that take advantage of CC opportunities as well as responding to CC threats. Ensure trustworthy information and recognize that mistakes will be made - establish means of communicating failures as well as successes in trying new things.*
- *2.2 ...We may also want to explicitly address issues relating to liability. Does taking a course on climate change remove plausible deniability and create concerns around liability r inaction? I have no idea, but it could be an important dimension to consider under #2.2.*
- *2.3 I think the priorities for adaptation should be placed within a framework of typical fields of practice (e.g., climate-adapted silviculture, riparian management, watershed assessment, etc.).*
- *2.3 - shouldn't we be also looking at this from the perspective of impact? What are the topics that would have the greatest impact?*
- *2.4 Climate Change adaptation competencies? Not sure what you are looking for. This one seems fairly nebulous and not sure how it would differ from existing desired competencies.*
- *I would move 2.4 up in the process to 2.2 so that competencies are identified before identifying potential course offerings.*

Examples of range of feedback

- *The only outcome of any tangible value is 2.4. The others beg the question: "So what?" Will there be metrics developed to ensure professional work is meeting the needs of anthropologically-enhanced climate change?*
- *"Alignment" is a good objective - but it can also turn into a challenge/barrier to progressing. Don't dissipate a good vision by getting overly rigid about what it needs to look like. Can we take some inspiration from First Nations, I.e. can this process and its outcomes advance reconciliation? The conversation/reflection this process sparks is just as important (if not more important) than the end result.*
- *Most of the examples cited in #2.3 (in the "e.g.") are very general and vague. I would like to see more specific ones like "plant selection for changing plant zone maps and rainfall distribution."*
- *I'd consider 2.1 a success if it contextualized our meaning-making—i.e. explicitly identified the backgrounds and perspectives of the folks doing it—and considered its geographic applicability and limitations. It may also be worth positioning the study in terms of its orientation relative to the discourses of mitigation or resilience.*

Section 3: Quotes illustrating feedback to individual definitions

Climate Change Adaptation

- *While mitigation and adaptation are interconnected, adaptation for me is more focused on accepting climate change & designing with the anticipated changes in mind. The challenge is articulating anticipated change & appropriate, resilient & sustainable responses. Its acknowledging the anticipated changes, rather than trying to prevent them. For e.g., we know vegetative ecological systems are migrating and some species are becoming extinct, so rather than trying to stop that, how should that info inform our landscape designs for the future? How do we address placemaking for the future? What are the constraints & opportunities? Does increased heat in summer demand more shade & benches and should we be looking at built wind barriers in some areas? Should interior spaces where large numbers of people gather be required to have a/c or outdoor areas with shelter? Should urban heat reduction be a quantifiable requirement in urban centres? How do we design public spaces that have stage 4 water restrictions from May - September.*
- *"...human and natural systems..." There's a major flaw in the thinking already. By dissociating ourselves from the 'natural world', we have caused the environmental crisis we now face.*

Low Carbon Resilience

- *this definition is unclear. "the concept of low carbon resilience invites the strategic integration...what is this supposed to mean? then the definition proceeds to make even less sense, but the term low carbon resilience does not make sense to me either. How can we become resilient to low carbon? We can become resilient to climate change or have adaptive strategies for climate change that include emission reduction considerations...is that what this statement is talking about?*
- *3.2 - The Low Carbon Resilience definition really resonates with me, although I am also comfortable with adaptation and emissions reductions being defined separately.*

Continuing Professional Development

- *#3.3 ...I wonder what a professional liability insurer would have to say about it... Some of the CPD's we can record are pretty light & if climate adaption CPD's are the same I wouldn't want the individual recording them to think they have expert knowledge. I would like to know what could go wrong if you implemented 'wise' climate adaptation practice but weren't an expert. Could that be dangerous? Or is getting professionals to implement what they can, as soon as they can, the goal?...*

Courseware

- *3.4 - Is courseware just the method of learning? the actual mechanism?*

Competency Framework

- *3.5 - Competency Framework - we are looking for explicit learning outcomes associated with content and professions*
- *3.5 for skills, this may be specific to your area of practice. Some professionals will only need a basic understanding and some will need very advances. The proposed Competency Framework should provide some guidance on what kind of competency and at what level is recommended for certain types of professionals.*

Content Domain

- *3.6 - Content domain is not a term that I am familiar with so perhaps it could be expanded a bit more if you think this is not a term most professionals are using regularly.*
- *3.6 could be vetted by lay citizens who may be the intended beneficiaries of the professionals' work.*

Examples of range of feedback

- *This is all very academic. Think in terms of action in the field. Reality does not come through in any of these definitions*
- *... include a definition of human security. It includes all the reasons (to be spelled out perhaps in section 2) that warrant the Expected Outcomes. The UN and academic institutions have published abundant literature on human security on which this paper could draw.*
- *3.1/3.2 - How about results? Climate change is such a difficult entity in that the results are not immediate, in addition they are not readily measurable. How can we create some definitions around results so that we can have some measure of success/failure? What about the term - short term vs long term?*
- *3.1 I suggest including an explicit reference to the needs of the most vulnerable in society, be they human and/or nonhuman.*
- *Thoughts: Climate Change adaptation capacity and skills has a substantially different meaning dependent on which profession you are speaking with, so sharing a common language is critical.*
- *I'm hoping that the concept of resilience is a whole conversation/ courseware topic (not necessarily confined to the concept of low-carbon resilience, which I think is a little redundant, when resilience is about identifying cobenefits in practice anyways)*

Section 4: Quotes illustrating feedback to background items

Project Outcomes

- *I don't understand how the competency framework will be used or applied - to what end? Why would the universities develop the CPD when it is for practitioners in specific applications/professions. Wouldn't they be better suited to create the content?*

- *I do not understand the need for a competency framework specific to climate change adaptation, how would this be different from being a good forest and land steward?*
- *the project builds on the work of many other important climate change adaptation and low carbon resilience projects. Perhaps some lessons can be learned from the BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development? We have a Climate Change Strategy that includes building the knowledge and integration. We asked all regions and branches to develop Climate Action Plans, and we developed a Climate Action Plan community of practice which speaks monthly. We also have a Climate Change scorecard in which each region and branch scores their progress on climate change action and integration work every 6 months. This includes a climate change education target, similar to the goals of this project which was to increase the climate change education of ministry of forests staff, in part for our own internal goals but was given extra importance as a response to the climate change audit, regarding increase the education and awareness of climate change to government staff... The results of the Kresge survey are similar to results from FLNRORD workshops on integrating climate change into decision making.*

Existing Courseware and Resources

- *Existing Courseware: I've found that there is a plethora of information, but all targeted to different audiences. High level reports from the Institute for Catastrophic Loss, or policies issued by EGBC. As more of a 'boots on the ground' perspective, solutions are needed more than generic policies and guidance. I believe building codes can provide a lot of this direction, and my understanding is that the NBC will be moving in this direction with stipulations for climate adaptation for new construction. However, all this neglects the biggest issue: all buildings that will exist in the future, already exist now! Our biggest challenge, in my opinion, is solving the existing building problem, which is not inherently profitable, and so is overlooked by many engineering firms.*
- *I'm not sure how you chose the resources in 4.2 - there are a million resources out there that are more useful than those listed here.*

Surveys

The following examples reference the EGBC survey.

- *EGBC published a survey of their members and evaluated the proportion who do and do not accept that CC is real and human-caused. While the results did not include that figure, they did analyze the proportion who would and would not include CC considerations in their work. Not an encouraging result! Our profession needs to be able to unequivocally interpret CC consequences to the general public if behaviours within the wider demographic are to be effectively re-directed in many different directions. We cannot do that unless we speak with one voice, with no opposition from within our community. That is not the current situation.*

- *More "practical" tools and awareness needs to be created to address the engineering associations observations. If the practicing sciences do not have a practical solution to what is being attempted to be achieved or understood than nothing will be implemented. Only action that will be created are by the groups that so profit opportunities in the subject matter, and, sadly, excuses for failed systems. What are the practical objectives that the group wants to achieve.*
- *In section 4.3, sub section 4.3.3. notes one of the recurrent problems with issues and topic areas such as Climate change and that is that many respondents were unaware of existing resources. An important issue is to figure out how to develop better awareness of the resources and a clearer taxonomy describing these resources.*

Examples of range of feedback

- *Project Outcomes: If I understand this correctly, the outcome is to develop Content Domain, yes?*
- *The call to action isn't spelled out the background. The background must answer questions such as: 1. Why is it useful or what opportunities exist with adaptation? 2. Why should I care/what's in it for me? Your invitation to join an active professional learning community of climate change adaptation and your capacity to deliver should be spelled out.*
- *Is there any general coordinating body or any indication of the different funding sources used to sustain these organizations?*
- *climate mitigation policies*
- *These covered all the climate change surveys and programs I am aware of.*
- *Should there be more Climate Change experts? Any in BC Government, at UBC (Tongli Wang), or other? Or are they ALL in PCIC? Who are included in the Indigenous climate changemakers and leaders?*
- *These are all important sources of data. One aspect that is poorly represented are the specific changes that we are supposed to adapt to. Despite the uncertainty about them it is possible to design some likely scenarios and use them to set goals and expectations. To that end I would suggest to include the current IPCC report, as well as corresponding projects that track current trends at the regional level.*
- *You need to ensure an environmentally supported geneticist is included on the board of the Forest Genetics Council of BC. The current structure of the Forest Genetics Council of BC is that of an Industry / Government Working Group....*
- *When does field forestry get referenced and addressed?*
- *Can't think of anything more other than making content clear for those who work in an office environment. What steps can they take towards Climate Change enhancements in their own places of employ?*

Section 5: Quotes illustrating feedback to numbered assumptions

- 5.1 *Many professionals are beholden to their clients. If the client is reluctant to 'pay more' for climate adapted infrastructure, there is little that the professional can do. Professionals are also frequently overruled by the requirements of the AHJ: it seems to fall into the hands of politicians, who are elected by the 'clients'. Please pardon my cynicism!*
- 5.2 *professionals will also require the flexibility to try things differently - experimentation (within reason) without getting penalized. If we don't start fostering an environment of trying things differently, we may lose opportunities.*
- 5.3 *recommend something like this instead: "There exists a core set of knowledge and competencies that all climate change adaptation professionals must possess irrespective of jurisdiction, sector, domain, or role. Professionals also require jurisdiction, sector, domain, and role-specific knowledge and competencies."*
- 5.4 *True but regulations need to be based on science. Watered down regulations with loopholes will not lead to adaption.*
- 5.5 *'rather than overlap and compete' Different/various locations that may serve the needs of an audience with particular geographical constraints. Additionally, to enable the opportunity for other institutions to participate, it would be beneficial to recognize the unique capabilities of institutions in either location, content or courseware.*
- 5.6 *I believe that a general understanding of probability, uncertainty and risk is most essential--leading to an understanding that management outcomes my have benefit but are uncertain. Moving away from deterministic thinking is essential. Just because we can't accurately estimate the future does not mean we should stick with a historic model that generates bad projections for the future (e.g., current approach to timber supply).*
- *5.7 - Alongside than the integration of Indigenous world views, practices, science and other knowledge, some of the Continuing Professional Development courseware should be led by Indigenous teachers, in whatever format they think best. For instance, perhaps the courseware would draw on Indigenous stories to set the stage and utilize place-based teaching to build on and better explain these stories. If done in a good way, this could also assist in showcasing the deep knowledge contained in Indigenous stories, taking them out of the realm of myths and allowing non-Indigenous professionals to experience what could be a different worldview to their own, which could help facilitate stronger relationships and collaborative projects in the future.*
- 5.8 *reconciliation and resilience are mutually reinforcing & codependent (in Canada, which is where we are- I don't think there's anyway around this).*
- 5.8 *While I agree that Indigenous communities are a valuable source of information, specifically around traditional knowledge and land stewardship, it seems like the most innovative climate related technologies and approaches are coming out of research programs at traditional post-secondary universities, rather than small group interactions between professionals/communities and Indigenous groups. So I think 5.8 might be*

overstating the importance of these interactions, at least at this time. Not to say this is not an excellent growth area that should be targeted.

- 5.9 *This one might be better framed. Mitigation and adaptation are both essential strategies to respond to climate change. They are not substitutable, except that the faster we reduce GHG emissions, the less adaptation we will need in future (this is a very important point, as for some places and conditions, impacts may soon overwhelm adaptive capacity). Neither are they, except in a few circumstances (e.g. green infrastructure), complementary. They are largely discreet and separate responses, involving different players and different levels of government in different ways. Similarly, as far as professional development, theygenerally require different skill sets and professional implications.*
- 5.10 *I very much applaud item 5.10; too often innovators get stuck in the reinventing of wheels that are already working perfectly well in another place. Now that we are globally well connected such networking has become much easier.*
- 5.11 *I hadn't thought about that one because the needs assessment was focused on assessing the expressed needs of the professional community. But of course, what is likely to come out of these discussions is that the professionals are grappling with how to adjust to a change in legislation and they will need just in time training to do so.*
- *5.12 is prescriptive; existing 'knowledge' may be wrong; 'focus on practical' may limit outcomes: theory must be understood to be applied in different settings.*
- 5.13 *add to end of sentence; also relationship building & cross disciplenary collaboration*
- 5.14 5.14 *Social Learning Community should include traditional knowledge, a strong climate communications component and the Arts to stimulate discussion. Design competitions based on Resilient By Design -San Francisco are a great model.*

Examples of range of feedback for 5.6 competencies

- 5.6 *Those competency requirements are already in place.*
- 5.6 *Systems thinking and design thinking are things I have always heard about but never understood. I've noticed that people tend to nod their heads when theories are talked about, but aren't necessarily able to fully grasp or utilize the theories. When referencing these competencies, it might be helpful to define them right away.*
- 5.6 *including new financial and economic analysis tools*
- 5.6 *should include strategic foresight.*

Section 6 Quotes to illustrate key themes in response to Critical Questions

Question 6.1: Envision a climate change adaptation challenge that you have faced or are likely to confront in your work. What additional knowledge and skills do you feel you need to better respond to this challenge? Be as specific as you can.

Impact issues - direct

- *Unpredictability of the weather in relation to forest logging operations. When the spring thaw arrives and when and how much rain arrives makes a huge difference in whether we can use resource roads, or whether half of the province is on fire.*

Impact issues - ecological

- *Yellow cypress dieback - will it become a factor on Vancouver Island - and where is Yc at risk? Detailed Regional and Local CC modelling required, showing probability of extreme cold events without snow cover; examination of Yc stands for signs of dieback after 2019 cold events.*

Impact issues - built

- *How should ports and international freight and travel terminals plan to adapt to SLR? Need more economic and systemic analysis to understand where the most effective interventions will be, and to demonstrate the influence on national trade, GDP, and inland priorities.*

Impact issues - economic

- *How do you buy land for development in the future? What questions do I need to ask? What strategies will I likely have to employ? What is their cost?*

Impact issues - social

- *I always need more emotional intelligence, or would like it on the other party's part! I want collaborators to know their own context, organizational culture, sphere of influence, extent of authority, understand their own data, have capacities to assemble a team and identify a champion. :)*

Impact issues - general

- *A better understanding of a variety of specific areas i.e. green buildings, heat pumps, rezoning process, hydrology, water infrastructure etc. The professional SME in these areas often don't know enough about CC and I don't know enough about the specific technical engineering or design.*

Approaches, applications

- *Knowledge of who is doing the work throughout BC. A lot of people are working on climate change topics without calling it this, and it's harder to know what people are working on outside of my own region.*

Examples of range of feedback

- *How can we move from incremental to transformational change? I need the skills to convince people that this is necessary and possible.*
- *In preparing synthetic hydrographs and a dispersion model for a new wastewater treatment plant, my organization was requested by the regulator to include climate change effects into*

the modelling. This was not possible as IDF curves have not been updated by Environment Canada and effects of climate change on ocean systems (mixing patterns, etc.) in my region are not readily available.

- *Proper species mix to plant, how to plant dry sites - planting deserts like Australia and China*
- *Beyond the necessary scientific and the technical tools manifesting themselves in physical actions and creations, I feel that many people also need tools to cope with the emotional and spiritual grief and shock gifted by not only first-hand exposure to the often horrific impacts of climate change, but also by witnessing those impacts on others through our powerful and omnipresent media and technologies.*
- Imagine you are at a climate change workshop. In one of the brainstorming sessions, you are asked to write on a yellow sticky your top 3 priorities for climate change adaptation Continuing Professional Development topics. What would they be?

Question 6.2: Imagine you are at a climate change workshop. In one of the brainstorming sessions, you are asked to write on a yellow sticky your top 3 priorities for climate change adaptation Continuing Professional Development topics. What would they be?

Quotes to illustrate key themes

<u>Accessing and using climate change data, tools</u>

- *you can't always get what you want (how to use the climate data you can get)*

<u>Accessing adaptation knowledge, innovations</u>

- *Learning what are the options for the type of work you are doing (materials, process, climate lifecycle analysis, cost, etc) Understanding how my work impacts the climate either directly or through forced decisions to other practitioners or disciplines.*

<u>Communication and engagement</u>

- *Techniques for explaining to reluctant clients the benefits / value add of considering climate change adaptation. Or generally, how to communicate CCA to clients.*

<u>Ecological topics</u>

- *Biogeoclimatic zone shifts and potential yield impacts for transition types (NDT 3 to 4 or 4 to 3).*

<u>Risk</u>

- *Risk and Vulnerability--how are these determined*

<u>Economic topics</u>

- *Professional liability and costs (to professionals) of inaction.*

Teamwork, collaboration

- *Key publications, tools and videos have been updated to reflect interdisciplinary focus.*

Indigenous topics

- *Workshop(s) or seminar(s), etc. on Indigenous approach to climate change and adaptation - traditional practice and current thoughts*

Resilience

- *What is resilience and how do I build it?*

Examples of range of feedback

- *I have a theory: half the battle is recognizing there is a battle. Half of the remainder is recognizing you want to fight the battle. The remainder is fighting the battle (25%). So I would want the leaders of BC (folks who matter in governments and business) to stand up and say to their peers. 1) climate change adaptation is essential - you need to be fully engaged. 2) here is how I (my organization) benefitted. You will want to benefit too 3) Here is how to get going.*
- *Everyone understands the science*
- *The top three priorities should be to develop a focus on local realities in the BC K-12 curriculum. This could include hazard perception, and place-based learning experiences.*
- *Maintain social license through CC-informed carbon management.*
- *Prepare to be offended'! In an eponymous publication we suggested the need to facilitate cultural safety in a society that will be vastly expanded by incoming migrants from foreign cultures who will have been displaced from their homelands. We will all need to work hard to get along.*
- *Garnering political support/formatting the structure and communications of the adaptation work to suit even conservative and anti-climate change governments*
- *mandatory inclusion of at least 30 hours of climate change awareness curriculum in all engineering and technology programs*
- *Holism (mindfulness of our perpetual, unavoidable interconnectedness with humans and nonhumans, the living and the non-living).*

Question 6.3: What are the top 3 design elements that you feel should be considered in shaping the climate change adaptation Continuing Professional Development courseware? These may be issues related to accessibility, accreditation, price, or any other attribute you consider important.

Quotes to illustrate key themes

Accessibility - price

- *Free to audit and pay for certificate*

- *Price - I think the prices need to be in the range of $200-300 for a day session. This will be somewhat lower than the prices offered by the associations themselves (they range currently from $400 to over $1000) and will make this an attractive option for climate change education and achieving member CPD goals (i.e. a certain number of CPD hours per year).*
- *Price would be a factor - should have some price tag to reflect the value (as free sometimes devalues the worth of learning unintended, but not so expensive that people avoid making the investment). A price point of $50 - $100 for a 1-day online learning product seems fair. About double for an in-person 1-day learning session.*

Accessibility - other

- *Accessibility for Francophone communities, rural and remote communities, and professionals with disabilities (physical, mental, social, and cognitive).*
- *Flexible as to when and over what period of time, it can be completed (professionals are busy.)*
- *The courseware should be universally accessible. It is important that every professional should have the opportunity/responsibility to improve their adaptation skills. Small and/or remote communities will often be most heavily impacted and professionals working with these communities need adaptation skills and knowledge.*

Accreditation

- *Build accreditation / recognition requirements, and link to the province's examination of and requirements for professional reliance. Develop and promote a recognizable accreditation standard.*
- *No new professional certifications or accreditation must be created over and above the designations that the professionals already have.*
- *expertise required and expected liabilities.*

Practical, applied

- *Practical relevance -- implementable rather than general and academic.*
- *...experiential learning is very useful. It could be a neat initiative to have a group of professionals 'tag along' or shadow an actual project and follow longitudinally with major milestones. This would be, however, quite difficult from a time- expenditure perspective.*
- *Should be hands on as much as possible - i.e. working through a case study or problem*

Examples of range of feedback

- *Accreditation: developing a certification program of some sort may be helpful to avoid unscrupulous individuals delaying much needed action.*
- *First priority should be to train as many professionals as possible at a consistent "101" level. Specialized courses e.g. at a 200 or 300 level, should be a secondary priority.*

- *Deliberately builds a collaborative group of professionals - encourages development of teams.*
- *Nested modules that allow people to advance from adaptation beginner to experienced LCR expert*
- *many (but not all) of the courses should have a creative component or emotional intelligence component - forcing people to do art also kind of makes them vulnerable and that experience is important (I think)*
- *Available via e-learning but with face to face components*

Question 6.4 Indigenous communities draw on local, intergenerational knowledge and expertise to innovate and adapt. How do/will you integrate Indigenous knowledge and practices with your own professional knowledge and practices?

Quotes to illustrate key themes

On involvement:

- *Our approach to community engagement on adaptation is to assume that community members are experts in their own right about how climate change is impacting their lives and the solutions that would be most appropriate. As a result, we believe it is important to partner with - not talk at - people; listen to local concerns and tap local knowledge including traditional environmental knowledge and from their create plans and programs versus taking a top down approach*
- *Speak and collaborate with them.*

On relationship-building:

- *indigenous knowledge should be much better integrated into professional practice, but this is extremely difficult not because of its value or applicability, but because of the very different cultural practices through which knowledge is constituted and shared. This is part of the reason why standard consultation and referral practices get bogged down so quickly: it's not a matter of getting an "indigenous expert" to pass judgment on a particular question, but rather to engage in a social process of devising a consensus-based narrative reflecting that question. This doesn't fit well with settler notions of expertise, knowledge, consultation and decision-making, and leads to all kinds of misunderstandings that have little to do with knowledge. I have used an iterative process called "Shared Learning Dialogues" to try to address this but it requires skilled facilitation.*

On ecological knowledge:

- *I view indigenous direction as similar to LRMP direction--goals to achieve. I synthesize indigenous and western knowledge to determine appropriate management strategies*

- *TEK and TLU are sometimes part of my practice. Recognizing natural signals is critical to understanding natural systems.*

On courseware:

- *I need to be informed of this knowledge and how it would apply to my forest management area. So build it into the courses. Tell me where I get this knowledge. My local 1st Nations have not imparted any such knowledge in their responses to operational consultation.*
- *In-person discussions and training courses that are held in the field and are a form of immersion training, may require numerous sessions over numerous months to reflect the seasonal changes and cultural lessons and experiences. They will need to be direct, small class group and not rushed. But they should be hugely beneficial overtime. Not to mention open the communication lines.*

Examples of range of feedback

- *I infrequently encounter or work with Indigenous communities. Cultural practices, regardless of their derivation, are infrequently involved in engineering calculations. The application of solutions may be slightly different, but pressures and forces are culturally agnostic.*
- *This question seems to fall more in the realm of designers and architects. Our workplace offers indigenous culture competency courses to better understand perspectives and approaches. These can inform how our project teams work in Indigenous communities.*
- *It would be nice if the bands and nations took the initiative to create summaries of their knowledge and make it readily available for broad use.*
- *I do not think indigenous knowledge is unique, however, several aspects of indigenous practice, e.g., fire, can and should be integrated in adaptive forestry*
- *Transition all forest tenures held by forest companies to the management and guidance of indigenous communities. (Tenure reform).*
- *Professional knowledge, yes. Indigenous knowledge on how things have changed in their location is very important to set context or for prioritization of activities. In practice, no. In my work, data is required to the assess the degree of climate change or the impact in order to inform a decision maker to suggest appropriate action or adaptation.*

Question 6.5 It is recognized that Indigenous communities may be disproportionately and uniquely impacted by climate change. How do we as working professionals respectively [respectfully] and meaningfully support the climate resilience of Indigenous communities?

Quotes to illustrate key themes

On disproportionate impacts

- *Recognize that climate impacts cross community boundaries and that certain communities are at significantly higher risk (wildfire/ sea level rise). Share and seek knowledge and help to protect cultural resources.*
- *...It is a question of dealing with grief and with loss of culture. Particularly here in BC, many of the pillars of First Nations culture are connected with natural ecosystems and keystone species that are threatened by climate change in combination with other ill-considered practices (habitat loss, over-extraction, logging old-growth forests, aquaculture etc). When you look at the prospects for salmon, western red cedar, resident orcas....in a traditional FN culture these are co-habitating partners, guides and neighbours, as well as the foundations of the food and materials for daily life. Losing these is akin to losing family members. I don't think settlers have any appreciation for what this means, or how to support resilience in the face of irreversible cultural losses like these. It will be tough. We need to be better equipped to deal with grief and loss.*
- *I don't agree with this. I feel that we are all impacted and regardless of race/ethnicity/gender there will be small variations based on lifestyle choices. This issue is climate change and as such it is a global problem that needs to be addressed asap, I feel that bringing UNDRIP in is a good idea but should not be a driving factor that is going to impede results.*
- *We need to start to addressing the changes in the distribution of species populations to ensure food security for First Nations - we need to focus not only on documenting their botanicals and food sources, but ensure they are resilient and sustainable.*
- *...acknowledging... the additional stresses to culture, language and identity that it will bring to indigenous people...*

<u>On self-determination:</u>

- *Offer financial resources, connections, amplification of messages, and other types of support then get out of the way.*
- *Ask the relevant Indigenous communities. I'd bet they have had more than enough of White folks telling them what's best for them.*
- *Indigenous communities need to lead in their own communities and are in many respects, particularly in terms of innovations in renewable energy project. Invite them to share this learning, profile their successes and build partnerships.*
- *Formally, actively and publically respect their territories, their sovereignty and their local and regional decisions and decision-making processes.*

<u>On Indigenous education:</u>

- *Work with indigenous communities to develop and deliver curriculum*
- *Involve indigenous communities in this challenge dialogue and development of competency framework and courseware*
- *Professional associations should develop good working relationships with Indigenous schools and learning institutions to help foster interest in the next generation of*

professionals. We want to have Indigenous professionals be a part of all phases of the process, filling roles at municipalities, provincial government, and in the private sector.

- *Educating indigenous leaders, administrators and technical staff to understand adaptation planning and expertise will help them to evaluate professionals' ability to provide adequate services which include adaptation. Helping indigenous communities understand their role in adaptation planning for their own communities through education and mentorship will also help them take control of their own futures...*

Examples of range of feedback

- *Unless we (landscape architects) are involved in specific First Nations focused projects it can be very difficult. We encourage our clients to include First Nations in all our public projects, and have had good success on most, but sustained involvement is extremely difficult. See 6.4 above. This is a question that I look forward to discussing.*
- *I fear that, once the excrement really hits the fan, such distinctions will pale in comparison with the widespread emergencies and misery that BC communities will encounter. However, indigenous communities can very much benefit from one important aspect of professional development: the empowerment of low socio-economic strata in our society. Whatever our adaptation efforts can accomplish, they will count for little if they do not disproportionally benefit the poor. That usually includes indigenous peoples most of all.*
- *By no longer viewing them as forgotten people and assertively choosing to help them. The age of reconciliation has arrived.*
- *I see this as a terrible social injustice. Folks in the developing world are in the same boat. I feel we who have benefited from making the pollution owe a debt to those who suffer from it. Polluter Pays Principle. I am happy to (and obliged to) share my time and talents with my First Nations sisters and brothers.*
- *Working professionals are constrained in what they can do on their own to support resilience in Indigenous communities, under our existing legal structures most decisions involving on reserve indigenous communities fall to the federal government.*
- *Do not raise expectations that cannot be met. Don't bother talking about changes that cannot be achieved. If for example logging reduces forest resilience and First Nations wish to maintain forest resilience, detailed discussions should not be undertaken until reducing logging becomes a possibility. In some cases, compensation for past mismanagement should be considered.*
- *There should be "triple helix" collaboration between Indigenous communities, professionals and the government, to identify and implement mutually acceptable solutions.*

Question 6.6 Is there a role for a distinct online BC Professionals climate adaptation network, and if so, what services would it provide?

Quotes to illustrate key themes:

No:

- *I don't believe a network would be worthwhile - there seem to be many climate networks already on the go (I am in two). It might be that individuals with questions could send them to PAAWG via our chair, and as a group we could discuss them. PAAWG already represents most professions involved directly in climate adaptation in BC.*

Unsure:

- *Only if it is recognized by all of the associations and isn't competing for space and attention with other offering*
- *I'm not sure how this would work for all professional associations. I can see this being very beneficial for particular professional associations--i.e. engineers, planners, nurses, teachers, etc.*

Yes:

- *Yes, it means that we are taking climate change seriously, and that staff are knowledgeable in integrating climate scenarios in their work.*
- *Yes, if the network coordinates and connects the various adaptation efforts. Specific professional organizations should be responsible for developing their own professional development training in order to make it meaningful and useful but a body which provides oversight and coordination can help maintain standards and minimum content requirements. This body can also act as a resource for individuals seeking training on specific items.*

Services:

- *It would be helpful to have a convening body that serves the community providing opportunities to gather in a collaborative, non- competitive way to enhance the complimentary work we are all doing to respond to climate change - in the mitigation and adaptation spaces.*
- *staff are knowledgeable in integrating climate scenarios in their work.*
- *It seems to me that you already answered this question - professional networking! Preventing people from spending their energy and resources to reinvent wheels that others have already designed. Learning from the mistakes of others. Deliberating about regional priorities. Exchanging learners and teachers between places where specific expertise is developed and applied. And, not least, developing the professional skills of the instructors themselves.*

Examples of range of feedback

- *I think the first thing practitioners want is examples, lessons and cases that are recognizable in their own context. Adaptation is always highly contextual, so examples and narratives may have some inspirational and motivational value, but their direct transferability between contexts, locations, or professions is often limited.*

- *Not sure - I think it is too early to tell and this project may help to determine if there is a need.*
- *It would be important to consider how a regional network fits into CCA CoP given that network has been running for some time and doing important work. Ideally, the efforts could fit together. For example, the Urban Sustainability Director's Network is national but hosts/facilitates regional networks within that structure.*
- *I'm wondering if this should perhaps be linked with Engineer's Canada IRP designation?*
- *I have been involved with many networks, and in my experience a network only succeeds if it is a verb, not a noun. The structure must be light, it is the activities and services that are crucial to its success. These must be of practical value to the members, and if the membership has diverse interests and responsibilities, it can be hard to maintain.*
- *I think there will have to be a central communication portal and library, but that will have to be informed and maintained by a series of local think-tank groups and working-groups. This work will have to be a combination of paid and volunteer groups. Forest professionals must be present but take an active listening role as opposed to a leadership type role at least initially as the public will push back against being 'educated'. Plus, our roles, responsibilities and overall perspective will have to be clearly stated and represented. If you work for industry represent who sent you, if you work for an NGO state that clearly, if you work for government - describe your objectives in terms of professional expectations and role. If you want to participate as a member of the public, then you must be clear you do not represent your employer and are attempting to be transparent, but will always have some biased or self- regard.*

Critical Question 6.7: How should professional associations encourage their membership to consider and address climate impacts?

Quotes to illustrate key themes

On requiring climate education:

- *They can encourage their membership with a phased approach to making core competencies mandatory.*

On establishing standards, guidelines, policies:

- *Make it very clear that practice standards DEMAND consideration of a dynamic climate, not only in the future but NOW. Several professional associations (e.g. PIBC) have already done this. Provide examples of what they mean by good practice (recognizing that we are nowhere near "best practice" yet) and provide CPD to enable members to elevate their own practices in a variety of ways.*

On position statements and action plans:

- *A joint statement on low carbon resilience was recently issued by Canadian Institute of Planners (CIP), Canadian Society of Landscape Architects (CSLA), Royal Architectural Institute of Canada (RAIC), Canadian Water & Wastewater Association (CWWA) and ICLEI Canada. Engineers and Foresters have professional standards for years...*
- *I am biased, but I like some of the things that EGBC has done. Position Papers on humans induced climate change mitigation and adaptation, developing a climate change action plan. I think the next step is to have a discussion on what it means for my behaviour - what jobs I do and will not do. I (like most members) don't want the association to tell me my choice, but I think they should encourage me and support me to think about this and discuss opening without fear of reprisals.*

On committees, advocacy and communication programs*:*

- *Like EGBC does, establish a dedicated committee to be an advocating voice.*

On climate change adaptation themed conferences, association publications:

- *The BCSLA and CSLA promote Climate Change knowledge regularly at our annual conferences and congresses, through our publications and web sites, and through the CSLA Climate Change Committee's work. Still, until there is client/municipal demand for that knowledge, and respect from other consultants regarding LA's area of expertise (we create the physical spaces for tomorrow), it is hard to get the bulk of our membership to take the time to educate themselves around climate change and specifically address climate in their daily work.*

On codes of ethics:

- *Planners have had policy/ ethical commitments for years*

On coordinating with others:

- *The BCSLA and CSLA continue to seek relationships with other professions on a provincial (BCSLA) and national (CSLA) level, and with politicians, especially at the Federal level.*

Examples of range of feedback

- *If climate impacts are well understood, it should follow that members must address them. Education is the key.*
- *Most professional associations serve forest industry proponents with an unhealthy bias that is not likely to help us to address climate change effectively. These same professional associations assess the 'public's interest' by assessing their members interest - when their members are disproportionately employed by the forest industry (rather than assessing the public directly to assess what is in the public's interest). Measures must be put in place to separate the professional associations from their corporate masters. For example, assess*

how much funding in support of the association AGMs and conferences come from industry as compared to from social and environmental organizations and from individuals.

- *Humans resist change. We are heavily invested in keeping to a path we have chosen as 'comfortable'. Trying to change such a mindset to accept a lower level of comfort e.g. riding a bicycle / using public transit instead of driving a single-occupant vehicle, is extremely difficult.*
- *EGBC has already tried with their climate change policy and guidelines, yet it still does not seem to be widely acknowledged within the engineering community. But even to those who are aware of it, the challenge is convincing the clients of the need for LCR.*
- *Awareness building is key. "What's in it for me" if I don't adopt a climate adaptation mindset is the question that needs to be highlighted. What are those risks? Those risks have to be clearly linked to each profession so that the impacts are very, very clear. Not overly generalized leaving the learner to try and make the connections to their own worlds.*
- *In encouraging them to 'consider' climate change impacts, associations need to be trained to think broadly about all of the ways that climate change can impacts communities, assets, services, etc. This requires engagement with the literature and practice of climate risk assessment, and requires a holistic/systems level view that thinks beyond built infrastructure and considers natural and social assets, including impacts on individual health and well-being.*

Critical Question 6.8: Should climate change adaptation competencies and training be a required part of professional development and accreditation? Why or why not?

Quotes to illustrate key themes

Yes

- *Yes. Professionals need to work from a common playbook and frame of reference to foster healthy competition and raising of the competence bar over time. Their clients need a large, robust and diverse pool of professionals from which to select their project teams; and need to feel confident that costly professional and expert advice is worthwhile to achieve climate-*smart projects.
- *Yes climate change effects all aspects of architectural practice*
- *It should - because climate change is affecting all of us. Who could rightly claim to be exempt from its consequences? Nobody should later be able to claim that they did not know.*

Yes, and...

- *Yes. In a perfect world there would be a transitional training requirement that would be required within 5 years by all members of the professional association, and that in the mean time the professional association would work with advanced education institutions to change the courses and qualifications of new professionals so that the whole sector is up to speed on climate impacts within 5 years. Then there can be a continuing education requirement*

since climate is going to continue changing, it's not something people will ever have to stop learning about (but the course tones should evolve). This is because if designated professionals are responsible for projects that will have any sort of impact for any longer than a decade and they are not considering climate change then they are not doing due diligence.

- *Yes - at least from a professional planning perspective. It will have a huge impact on future plans. We are currently building with a focus on heating. In the future it will be cooling. Are we locating projects in high risk areas?*
- *Unless a person can make a good case for what climate change has not impact on them and their profession, then yes, they should have at least enough competency to know what they need - perhaps hep from others. Some professionals might need to be experts or have experts on their team making or having a leadership role in decision making. Perhaps I can see a time when EGBC, will include climate change competencies in their licensing requirements.*

Yes, but....

- *Yes, they should be required but where possible the requirement should complement existing career ladders rather than competing with them.*
- *Yes - but need to make it accessible and not overly onerous to participate*
- *Yes, but only at a basic level.*
- *Yes, for certain professions it likely should--planners, engineers, teachers, certain health care associations.*

Unsure

- *Unsure - the training needs to be developed, piloted and evaluated before making it mandatory. It should be required if we know that it is available and effective and uptake is low; making it a requirement is a solution to increasing uptake. On the other hand, if uptake is low because the quality is perceived as low value to professionals, making it mandatory could lead to frustration and won't help. The first priority should be developing excellent courseware.*
- *Possibly, but then we could also say that data analysis, and Indigenous cultural competency and history, should be included and required as part of accreditation.*

No

- *No. Not everyone in an association supports the concept of climate change and therefore no association should be allowed to force that agenda on an individual. I'm sure it would violate some constitutional rights.*
- *No - it should be part of the technical specialty ie forest management or transportation planning but should not be climate change for climate change - need to integrate it into specialty*

- *The issue with developing a climate change specialist accreditation is that we will be developing a super class of professionals who will be uniquely positioned to bid on projects. This is akin to developing a super class of professionals and lead to the unfortunate outcome where having the P.Eng. or RPP designation will not be enough anymore.*

Examples of range of feedback

- *Yes, as expressed and explained in several previous responses. Not previously expressed is this: People in the Engineering Team (Engineers, Technologists, Technicians, Journeymen) are, and have been since the dawn of human history, directly responsible for the catastrophe of climate change. They conceive, design, construct and maintain the machinery which has advanced civilization. No other group actually does that work. Others fully support these activities because it creates and facilitates the First World standard of living which has propagated across the world, has almost immeasurably improved living conditions and life expectancies for all, thereby expanding population and pollution levels everywhere on the surface of the earth and now in near-earth space. Scientists study and publish findings, Accountants count the costs, pro and con, Healthcare workers keep us all alive as long as possible, And the list goes on. But the work, where the rubber hits the road, done to generate most GHGs and to make polluting materials available, is only done by members of the Engineering Team. We broke it, we have to fix it before it's too late to do anything useful. If not us, who? If not now, when?*
- *Yes. This is a global problem and we need all minds turned towards it BUT this should not place the responsibility of fixing the problem solely on professionals. This is more often than not a government of the day issue causing many of the ongoing issues and as such politicians should have mandatory training and compliance or be required to put all climate impacting decisions through a body of third party non-partisan professionals for review AND decision.*
- *I don't understand this question.*
- *I think mine already does - ABCFP.*
- *I think that having a nominal amount of required CPD hours be dedicated to climate change could be a good start to getting all professionals up to speed. Perhaps 1 hour of an association's required annual allotment (~30 hours) could be required to be CC learning. Since CC will affect all members, it's important for all members to be aware of the impacts and what they can do in their practice.*
- *Only for those people who are working in a CC-sensitive position - would be many but not all professional foresters. Accreditation is a bit bureaucratic, but confirmation of awareness and understanding of CC-BMP is key.*

Critical Question 6.9: What are the top 3 barriers we are likely to face with the *Inspiring Climate Action* project? How might we overcome these barriers?

Quotes to illustrate key themes

Challenge Paper Progress Report

On resources:

- *People have limited time, Employers have limited resources*
- *Costs associated with integrating climate adaptation initiatives - how much more will this cost*
- *Potentially diluted impact due to wide distribution of funding on diverse course offerings - focus on critical impact (eg training linked to policy and practice change)*

On uptake of courseware by members:

- *Many adaptation professionals, especially those who have been in the workforce for a long time, and mired in the perspectives of their own discipline/domain/role and are resistant to new ways of thinking. It is critical to listen deeply to the perspectives of existing professionals and begin by meeting them where they are re: what they feel is important for them to grow in their own careers. Then, after building trust and value, you can introduce the importance of new concepts (or new ways of thinking about old concepts)*

On integrating independent professionals:

- *Might be like herding cats. Each profession is going to be unique and will to a large extent lookout for its own interests. How to decipher a wide range of views and needs into an action plan…....I anticipate the needs for a number of actions plans with only a core overlapping commonality to link each together (like overlapping circles forming a common core)*
- *It appears that you are targeted a very broad audience of professionals. Even within the engineering profession, there vast differences in philosophy of design and practice. It may be worthwhile to have specific sections of the final report intentionally targeting specific readers*
- *Trying to create a curriculum that appeals and is relevant for so many different professional associations, the danger is that it won't be targeted enough to their context, language, roles/responsibilities.*
- *Another challenge will be overcoming the competition between organizations (either in delivering training services; or in delivering expertise-based professional services). Why put effort into a CPD program or Community of Practice that will just strengthen your competitors? You will want to demonstrate how greater professional competence will generate greater demand for all.*

Other:

- *Regulatory Acts need to be updated*
- *people thinking they are the only experts in a field and not accepting other methods/approaches*
- *experts need to realize there are many working in the field and can't always wait until things are "perfect" to start implementing or when they have "published". Many times I have heard*

different models are being worked on with no delivery due to staff changes or political changes (storm surge and the federal government) - need to share best science and move forward not wait for ideal - is a fluid industry with changes in science daily

- *My concern is a credibility concern, about appearing out of touch ("ivory tower") or involved too deeply with nebulous policy without Specific, Measurable, Achievable, Relevant, and Time-oriented (SMART) solutions.*
- *Being too academic and general -- specific, implementable action is required*
- *Do we have the science right? Can we publish a Knowns/Unknowns matrix to improve the credibility of the existing science?*
- *Lack of current inventory and projections based on field verified data that is maintained and kept accurate or at least up to date.*
- *Uncertain 'ownership' of the land and resources; unsettled land claims and aboriginal interests/rights. Reconciliation with First Nations.*

Examples of range of feedback

- *Not practising what we preach - the strength of a competency framework should be that it highlights transferable skills from organizational development or management and leadership practise that can be linked to climate change information and processes. We want to be teaching people how to think differently rather than providing them with answers and will get a ton of pushback (overtly and covertly) to provide answers.*
- *Poor prerequisite learning to make sense of the Big Picture; this one is difficult as the responsibility lies with decades of inadequate schooling and false indoctrination. One place to start is an exposure to the concept of human security, its four pillars, their independence and interrelationships.*
- *Multiple unsustainable projects that have little impact.*
- *apathy--need to engage families to have meaningful change, no one has time for one more thing on their plate--try to tie it into something families always do like making it a part of a family vacation*
- *Marketing - Making individuals aware of existing resources is already challenging. Making them aware of new CPD opportunities or requirements, and getting them to access these programs, will not be easy given the huge amount of information that one must deal with on a daily basis.*

Critical Question 6.10: What other questions or concerns that we should be exploring as we initiate this project

Examples of range of feedback

<u>Questions:</u>

- *How will you determine who is an expert?*
- *How can permanent funding be assured?*

- *Do we have the flexibility within the existing policy instruments to be adaptable fast enough?*
- *In what ways can we take advantage of climate changes in the future?*

Comments:

- *Be aware that FLNRORD has recently conducted a series of workshops asking government staff about the support they need to adapt to climate change.*
- *...Get the 'rights' holders in the room and then discuss with the local members of the general public while addressing the hierarchy of concerns and interests. Not everyone is going to get what they want, in fact most will not for a while, b/c we have a limited scope of influence. Plan more and expect less from your efforts. Address the fires and disturbances. Acknowledge and address the inventory and its limits associated with relative maturity class. We cannot expect to keep maintaining the 'old-mature and over-mature stands' indefinitely as they are changing and we cannot change/manage that well..*
- *I am not sure where this fits in but one example I have is BC Hydro. The BC part of fine, it is the Hydro part that has to go. This organization can only see themselves as one that produces electricity from hydro in the best way that it can be done. They seem to be doing that. What we need is BC Climate Change Mitigation Corp. (The name will never fly but what we need is for them to see this as their mandate). They will still generate electricity,. It will be reliable. It will be affordable. It will reduce GHG and it will be resilient...*

Section 7

Quotes on Next Steps

On project Next Steps:

- *What is projected timeline over next 3 years?*

On the role of existing initiatives in Next Steps:

- *SFU's Centre for Dialogue is an expert convener in the dialogue space and could be an asset to future engagement.*
- *I am really concerned about next steps and that this does not seem to be closely linked in with ABCFP and Ministry of Forests, Lands and Natural Resource Operations. They are already taking a lead and not sure how well known this is.*

Examples of range of feedback

- *Over the last few decades, we appear to have lost expertise in certain forestry-related fields, like hydrology, terrain stability, ecosystems, wildlife, etc. Adaptation requires combining the knowledge and experience of these subject matter experts with the knowledge of climate/impact modellers/experts.*

Challenge Paper Progress Report

- *FYI, in my discussion with the CSLA Climate Action Committee it has come out that as far as we can tell BC has the only Brace project that includes Landscape Architects. Thank you!*
- *I appreciate the importance of this work and the intellectual, physical and other energies that are going into it.*
- *I believe that it is essential to be mindful of, and foreground, what some might see as positive underlying values of which people can*
- *be capable, such as thinking ahead, acting in the best interests of the commonwealth (including sacrifice where necessary), and being kind to all living things, and even non-living things, if for no other reason than to stay in practice. And I submit that communication -- how these efforts are organized, executed and built on -- is essential to the enterprise.*
- *One other thing I would like to add is that our economic system and how we measure "progress" or "success" is all wrong. Maybe this can be included somewhere in the program.*
- *"Climate Change Adaptation" seems a bit like saying, 'We've already lost the mitigation fight, so now we have to figure out how to make the best of the certainty of a dystopian future". Our lack of action now may inspire charges of Crimes Against Humanity 30 years from now. Slogans: - Climate change mitigation is Job One for the entire human race. Starting 10 years ago. - We're not trying to make life better for our grandkids, we're trying to make life possible for them.*
- *If the courseware will be available free anyway after the course is delivered, few professionals may wait to simply review the course after it is offered by visiting the website. There might not be an impetus to actually attend the course.*