Friday Forum: Disaster and Climate Risk and Resilience Assessments

Friday Forum: February 13, 2026
1h 40m 41s

Keith Porter 00:01:03
Hi, everyone. We're gonna let people settle before we get started. Okay, welcome to Friday forum. Today is February the 13th, 2026, this is the 237th Friday forum in the series. The series is hosted by ICLR, the Institute for catastrophic loss reduction. We're Canada's leading source for Disaster Resilience knowledge. Our mission is to make Canada more resilient to natural disasters. As part of that mission, each month, we present recent research related to the mission. I'm your host. ICLR chief engineer, Dr Keith Porter. I'm speaking to you from London, Ontario, this place is on traditional lands of the Anishinabek, Haudenosaunee, lenapawa and ottawandra nations. Last month, we talked about whether increases in construction costs get passed on to buyers through higher purchase price structural engineer Brian Porter and economics professor Dr Chad siverson told us that the correlation between cost and price is very low, and we had a great discussion after the talk with the speakers, plus Dan Sandink and Kevin Simmons, who helped us to generalize the speaker's research findings and related to individual builders. The post presentation. Panel discussion was really great, so please check out the recording. In next month's Friday forum, I'm going to present ICLR as new methodology to estimate Canada's societal loss history based largely on cat IQs insurance loss history. I enjoyed last month's panel discussion so much that I want to bring you another one like it. So after my talk, one or two other developers of catastrophe lost histories are going to join me for a panel discussion. We're going to talk about the uses, future improvements, and maybe synergies between lost histories, like those that are created in Canada and the United States. That's going to be on Friday, March 13, 2026 now let me tell you about today's speakers and topic today we're going to hear about measuring climate and seismic risk in British Columbia. Before we start, I want to frame the measurement problem. There's an old aphorism that gets that what gets measured gets managed. People attribute it to Peter Drucker, but in reality, it seems to date from a 1956 management paper by a Cornell University Business School professor named VF Ridgway. He wasn't advocating for measuring things. Rather, he was warning about getting the measurement management paradigm wrong. Ridgway warned about reliance on single metrics or on the wrong metrics. He offered examples from industrial production, but let me substitute one from catastrophe loss reduction. We often measure catastrophe losses in monetary terms, which tends to distract us from the problems of poor people. And Ridgway warned against demanding improvements in metrics without providing the resources to bring about those improvements in our world. We see we have measured the heck out of climate catastrophes for 50 or more years without really committing the resources to reduce those climate catastrophes. The point is that it can be hard to get the measurement management paradigm right. Today, we're going to hear about how the British Columbia

Ministry of Emergency Management and climate readiness grapples with the measurement management problem. We have Dominique Sigg and Yaron Finzi of BC emergency management and climate readiness, and we have Trilby buck from GeoBC, which is part of the BC Ministry of Water, Land and Resource stewardship. They're going to tell us about the province's disaster and climate risk and resilience assessment. DCRRA, that's a big effort to measure climate and seismic risk in the province. It aims to improve resilience planning and to better support regulated entities, their assessment measures how six BC hazards affect six kinds of public values. The Hazards are extreme heat, drought, wildfires, coastal flooding, riverine flood and earthquakes. And they're also dealing with multi hazard events. The values the values are effects on the built environment, the natural environment, health and well being, the economy, governance and culture and rational and relationality. They're going to focus on the measurement part and perhaps reflect a bit on the management part. Now, before our speakers begin, here's our agenda. Our webinar is going to last 90 minutes. Our speakers will present for about half that time. Then I'm going to moderate Q and A for the rest of the time. Please feel free to chat questions into the Q and A box. Not the chat box, but the Q and A box. I'm going to try to pose your questions in the order that they appear in the Q and A box. If we have a lot of questions, I may only pose your first question, then move on to others, then circle back to your additional questions. Our webinar is recorded, and ICLR is going to post our speakers slide and a link to the video in the next day or so. And along with the video, there will be a link to a transcript and their deck and audio. Those will all be at www.iclr.org/workshop so if you have colleagues could attend today, let them know. And with that, I will turn it over to our speakers.

Dominique Sigg 00:06:46
Great. Thank you so much, Keith for that excellent introduction. I'm just going to start by sharing my screen. Okay, can you give me a thumbs up if you can see that? Okay, yep. Great. Thank you so much. Okay, so it's a pleasure to be with you here today. Thanks for the invitation, and I'm very excited to be presenting this this project today with my colleagues here. This risk assessment was made publicly available in October last year, so my team is the disaster risk assessment team in the Ministry of Emergency Management and climate readiness, and we have been leading this work in collaboration with the climate action Secretariat, which is in the Ministry of Energy and Climate Solutions. So I'd like to start by also acknowledging that I'm calling in from lukangan territory today in Victoria, British Columbia, I live close to the traditional fishing grounds of the kasapsim and songhees nations. And in this project, we we've done a lot of engagement with First Nations throughout the province, and what we've heard from them is that quite often, one of the things that we hear is that everything is connected to the land. And so when you try to understand disasters and climate risks, you really need to start with an understanding of those connections to the lands. So I just would like to start by saying hijker, which is an acknowledgement in lekwungen for the teachings that have been shared by nations throughout this project. So as Keith said, we're

going to give you a bit of a run through this disaster and climate risk and resilience assessment. We'll talk a little bit about some of the key results. There's a lot of content in in this project that's publicly available, we'll give you a bit of an overview of the products and where you can find them. We have a demonstration today of hazard Insights tool, which is some new geospatial analysis and a tool, an online tool, that people can use to access the geospatial analysis information, and we'll talk a little bit about next steps. So this project was, as I said, co led by us and the climate action Secretariat in Energy and Climate Solutions. We've also had an excellent collaboration with GeoBC, represented by Trilby, today on some of the geospatial analysis that we've done. I'd also like to recognize the many other people that have been involved in this project. So over 200 subject matter experts contributed to this project in different ways, including provincial government ministries. We work directly with the Ministry hazard leads of the hazards that we assessed, as well as many other ministry partners across across different ministries in the provincial government. In order to do this work, we had a diverse consulting team that contributed to and developed different aspects of this project. I'd like in particular to acknowledge the First Nations Committee on disaster and climate risk that was established with this project, one of the principles that I'll talk a little bit throughout this presentation today is our intent was to understand diverse knowledges in in how we consider disaster and climate risks, and it was important to get a an understanding of how First Nations experience those those risks. So we had a committee that helped us develop the process, as well as provide input into the results that you'll you'll hear today. We have also many other partner organizations that were involved in this project. I'd like to in particular to acknowledge the Pacific climate impacts consortium, our regional climate services provider, who helped us with a lot of the climate content that you will see today. And as I said, over 200 people have contributed to this project in different ways. So just a little bit on timelines, this project has been carried out over the last couple of years, but it is really has origins much further back in time. So the last time that the province did a multi hazard assessment was way back in 1997 so it was well overdue for for updating this information. There were another, a couple, a number of other things that happened along the way that helped inform what we did and how we did it. So in 2018 the British Columbia adopted the United Nations Sendai framework on disaster risk reduction. And Keith, thank you for your excellent introduction there about the importance of measuring in order to manage. The first priority in the Sendai Framework is to understand risk, and so this is, this is what we're talking about today. Our efforts to better understand the current situation of risks that we are facing in this province is really grounded in BC, adopting that, that United Nations Framework. We also, in 2019 released a preliminary strategic climate risk assessment. Myself, along with a number of other colleagues that have been involved in today's project were part of that as well. It was very much, excuse me, a desktop exercise that looked at 15 climate related risks, and was really done with an internal focus to government. And one of the things that we learned through that, and we received very strong feedback through that process, was that it was a very western science approach that didn't actually consider broad, a broad range of knowledges, and in particular indigenous knowledge, and

how First Nations in BC are experiencing those risks. So that really set us on a path for trying to do things a little bit differently, and that's what you will see today. So since that assessment, the Ministry of at the time, Ministry of Environment, released a climate preparedness and adaptation strategy, which was the response to how we manage how we identified those risks, was a response for how to manage them in the province. Some other things along the way that have helped to inform this work is it's not up on this slide, but we have a new emergency and disaster management act which outlines requirements for regulated entities in the province to do risk assessments and to use those risk assessments to develop emergency management plans. So again, that measurement to management paradigm is important there. And as I said, this project, the risk and resilience assessment was released in October last year. So just a little bit more on the context here. So my ministry, together with the Ministry of Energy, well at the time, was environment, a couple of years ago, had a mandate direction to develop hazard risk assessments. My ministry still has that mandate today, not only to understand risk, but also to provide tools and information to help communities understand their resilience and ensure appropriate planning and preparedness within those communities. So at the start of this project we developed, we were looking at a new way of doing risk assessments, and we wanted to establish some guiding pillars to inform this work. Those are to collaborate with First Nations in the province, to take an equity, informed and strengths based approach to risk assessment, to uphold the best available knowledge and to consider very diverse knowledges, and to ensure that this information can support communities to understand and manage risk. And as I mentioned, we have new legislation that sets out some requirements for doing that. So a little bit on the scope of this project, it was a provincial scale assessment of risk, so very much a high level. We didn't dive into local assessment of risk, and often in terms of how we manage risks. Those are local management of risk happens at the local scale, and so it's always important to to complement this with a more detailed understanding of risk at the at the local or community scale. This assessment was based on existing and new information that we generated throughout the assessment. We used a range of knowledge sources, including expert judgment input from partners, and we used scenario analysis, which is a very typical approach for risk assessments of this kind. And as I said, priority was to consider very diverse knowledges throughout the project. And I'll mention it again, we had over 200 subject matter experts throughout different organizations, both within and outside the provincial government, contributing to this work. So as Keith said, we looked at six risks for this assessment. So we had a pretty short timeframe to do the assessment, and we wanted to prioritize things that have been consistently showing up as significant priorities for the province. These are all things either that we have seen very frequently in recent years, most of the climate risks that you see up there, Riverine and coastal flood, extreme heat, drought and water scarcity, wildfire, we've all had very many examples of how these risks are increasing in frequency and severity in this province. And we also looked at earthquake, which is obviously an important one for British Columbia, because we are in a very active, seismically active area. In addition to those six risks, we also explored what happens when you have a multi hazard event with many, many different

types of hazards overlapping or or occurring in a sequence, again, with each other. And as Keith had said at the beginning, we really wanted to assess how these hazards impacted a broad range of values. So risk assessments are a sense, essentially, a values based exercise where you try to understand how these risks are impacting the things that you care about. And we wanted to go beyond just built environment and economy and explore other things such as the natural environment, health and well being, society, cultures and Relationality and governance systems. So for this project, we had a large group of working groups that were involved in different aspects of the work. We had a working group for each of the hazards that we assessed. We had individual working groups for each of the value areas in order to explore how those hazards were impacting the particular values. We also established teams that were specifically focused on geospatial analysis, and Johan and Trilby will walk us through some of that. Later on, we had a climate advisory group and also a group providing advice and guidance on how to consider equity, diversity and inclusion in this project. So this is a bit of an overview of the types of information that you will see if you go to the website where our products are available, these are really the key components of the risk assessment. So we, as I said, it was a values based exercise in the in the technical reports, there's an overview of hazards chapter where each of the hazards are explored in more detail. We have a chapter that that provides an overview of all of the value areas and the ways that those values are impacted by disaster and climate risks. We have a chapter where we explored an extreme event scenario for each of the hazards and the multi hazard event throughout the pro throughout the report, you will see reference to how the how climate change is influencing these hazards. There's also a technical chapter in the appendix that was developed by our partners at the climate Pacific climate impacts consortium that really talks about how, how we the province is experiencing climate change, both now and what it will look like in the future for each of the hazards. We did some geospatial analysis. So for those of you that that are familiar in this area, it was the the analysis we conducted was hazard exposure. So we just looked at where the hazard occurred and how it was what, what types of things we care about are likely to be exposed to that hazard. So it's not a full risk assessment, but it does give us important information about what might be in the way of these hazards that we should pay attention to. And we finally have a chapter on equity, diversity and inclusion that explores a range of different ways in which these hazards are disproportionately felt by different populations. The as I mentioned at the beginning, we have a First Nations Committee on disaster and climate risk, and they provided input, not only in the process developing the process, but also provided a lot of really valuable information in how their communities are experiencing these types of hazards. So the committee doesn't represent all nations in BC, but it did provide many, many of the members, we put a call out to ask first nations to self identify, to be involved, and many of them come with a deep understanding of disaster and climate risks and how they are impacting the things that we care about. So I'm going to walk through a pretty high level summary of the results, just to give you a bit of a flavor of what we what we have, what you can find in the report. If you do, if you dive in more detail, I want to start by talking a little bit about the climate analysis

that was done. So again, our partners in the Pacific climate impacts consortium developed a detailed overview of the how the climate is changing in the province. And this is, you know, what we see here is playing out in many parts of the world. In British Columbia, the rate of the change that we're seeing is is much faster, just because of the climate that the latitude that we that we live in here. And what we know is that nearly under all climate models and projections, we're seeing an increase in the frequency and severity of these climate related risks, things such as floods, wildfires and heatwaves. We also know that there's a lot of very variability that's happening and that is becoming more extreme. So as some examples, we have much warmer winters and fewer days below freezing. We generally precipitation over the years increasing a little bit, but it's it's coming in very different ways throughout the year, so a lot less rainfall and longer dry spells in the summer, and much more precipitation in the fall and winter and spring and these this is all summarized in a technical chapter in the appendix, and as this type of information is presented throughout the report. So I just want to talk a little bit about how we considered climate change in this analysis. So when thinking about climate projections, there's many different ways that we can look at this information. So quite often we talk about emission scenarios. You may have heard of RCP, 8.5 4.5 which talks about the degree of emissions that are present globally. We can also talk about the changing climate in terms of future time periods. And another way of looking at it is also like is also something called global warming levels. So in this project, we use Global Warming levels, which offers a really clear connection to the goals in the Paris Agreement agreement, and it tends to frame uncertainty away from, you know, how warm are we going to get based on what emission scenario we might be on that that can often be there can be some contention there, or there might be a lot of uncertainty, and it allows us to focus on what will things look like under different degrees of warming. And we know that how soon we get to two and a half degrees or four degrees of warming, for example, will depend a little bit on our emission scenario. So it tends to decouple those that that information a little bit and allows us to understand how likely and severe climate change induced impacts will be, because they tend to scale with global warming levels. Again, I'll just touch on this very briefly. But in addition to global warming levels, we also considered a number of climate change variables which help us to understand current and future impacts to climate change. Of climate change, these variables can also be hazard drivers. So what we know is that in some cases we've got a single variable, drivers, such as changes in temperature, is a driver of extreme heat, and in other cases, they might be multiple factors might be driving the hazards that we see, such as temperature and precipitation, impacting how we experience drought and wildfire. So what I'd like to do now is just touch on some of the results for each of the hazards that we assessed. First of all, Riverine flood. We We know that floods are among the most common and often the costliest natural disasters in British Columbia, and floods are directly exacerbated by the impacts of climate change. For this analysis, we were interested in exploring how these types of hazards are felt differently by different populations. The the chat in the in the top, top right there, talks about some examples of disproportionate impacts, such as isolation and limited access to transportation to evacuate safely, and this in particular

impacts rural and remote communities, including first nations and individuals such as older adults and people with disabilities. For each hazard, we did the geospatial analysis of how what could be exposed to that hazard, and you'll see the chart below talks about critical facilities. So we know from the hazard exposure analysis that for Riverine flood, 2700 critical facilities are in an area that is could be exposed to that type of flood inundation, moving on to coastal flood. So starting with the graph on the right here, this shows the under three different emission scenarios, the relative sea level rise for the mouth of the Fraser River, which is our major river system that we have coming through Vancouver. This is projected onto the 2100s so we know that with sea level rise, the severity and likelihood of impacts from coastal storm surges and coastal flooding is going to increase over time, and this has significant impacts to many, not only communities, but also infrastructure and critical facilities along the coast, such as major ports and airports, airports and transportation corridors. We also have heard through engagement with First Nations that we have a lot of First Nations communities on in our coastal ecosystems, and they are some of the most vulnerable, given the legacy of colonialism and the placement of reserves in more vulnerable places on the coast. So we expect these risks to increase with a change in climate on to extreme heat. So we've seen many examples of this in the province in recent years. The extreme heat refers to the prolonged periods of unusually high daytime and nighttime temperatures. The 2021 heat dome is a really a significant example of this and how these types of extreme heat events impact vulnerable populations the most, which includes elders and those living in poverty. For the hazard exposure analysis, we looked at the how heat is experienced today and in the future. And the figure on the right shows that the likelihood of a an extreme heat event impacting the province today is, you know, likely to likely to impact around 33% of the population, whereas in by the 2050s that's likely to increase to 98% of the population that is exposed to this type of extreme heat event. So again, these things are increasing over time, and the impacts are going to be more more felt in bigger ways over time, moving on to drought and water scarcity. So in British Columbia, Snowpack is the main driver of drought, and we know, for example, in the Southern BC, we're likely to see this type of snow Snowpack driven drought more often than not under two and a half degrees of warming. And in the Fraser and Columbia basins, we're likely to see Snowpack driven drought almost annually with under four degrees of warming. So climate change intensifies the extreme drought and water scarcity events that we've been seeing. And what we are starting to see in this province is year on year drought, which is not something that we have historically experienced. So for the hazard exposure analysis, what you can see on the right there is a number of examples of the types of environmental values that are likely to be exposed to extreme heat, including oil growth management areas and 55% of species and ecosystems at risk. And one really significant example in this province is salmon, which is a culturally significant species for many first nations throughout the province, moving on to wildfire. So wildfires have broad impacts to many of the things that we value, so not just the built environment and infrastructure, but also ecosystems and human health. And these are increasing in frequency and in intensity, and we've seen many examples of that in this province

in the last 10 years, people in rural communities and remote communities face disproportionate impacts, again, from their ability to have access to to responding to these types of events, and also, you know, taking longer in terms of recovery given the remoteness of some of those communities. And in particular, Wildland urban interface, fires pose significant risks to those communities and challenges for emergency response planning. So for the geospatial hazard analysis, we used a data layer called the provincial strategic threat analysis layer, which is only available for crown lands. So the results that you see here in terms of how those wildfire impacts some of the environmental values that that is based on Crown loan land alone, it doesn't actually consider private land. So that is one one caveat for that analysis. So we wanted to assess a non climate related hazard, as I said, earthquake is BC is a great at greatest risk of earthquake in Canada. And in the scenario that we assessed for this risk assessment, we looked at a magnitude nine quake, and our interest in doing that was because it was something that is likely to impact a broad part of the province with significant other knock on effects as well. And we know, thanks to work by n a can and seismic experts, that a magnitude nine earthquake could exceed the damage of all the BC disasters that we've seen in the past 200 years. So really significant economic impacts, impacts to loss of life and and long term recovery of the economy and livelihoods of of people. So climate change is obviously not a driver of earthquakes themselves, but it does increase the likelihood of an earthquake happening at the same time or in or shortly before or after another hazard, such as a wildfire an earthquake occurring during a wildfire season, which of course, would stretch our emergency response and recovery resources significantly. According to the hazard exposure analysis, over 4 million people live in areas with seismic activity, and that's on top of 13,000 critical facilities that are in areas where this type of event could be felt. So I want to touch a little bit on some of the work that we did to understand the disproportionate impacts that are experienced across hazards. So disasters and climate risks can affect anyone but these impacts are not felt evenly with equity deserving groups, such as indigenous peoples, low income households, newcomers, older adults, people with chronic health conditions, they are facing heightened and often disproportionate impacts due to a range of factors, including in many cases, systemic inequities. So we have a chapter where we explored how the different hazards are impacting diverse populations. This is really a synthesis of many of existing information that we that we already have, that's available in a number of different places. We brought that into one, one chapter that provides a really good overview of information that we've gathered from the province, from First Nations, from local governments and other partners over the years, in order to better understand how these hazards are impacting different populations. And you can you'll find that information in the chapter on disproportionate impacts, and also information scattered throughout the different chapters in terms of case studies and other other factors. So this is the first time that we've considered the disproportionate impacts of disasters in a climate climate and disaster risk assessment. And so what we're interested in doing here is really exploring how to do this work and trying to provide guidance for others that might be interested in the work as well. And so this is very much our starting point, and we

have lots, lots more to do and to learn along the way, but one of the things that that that is we have throughout the the results is really it poses a number of questions that people can ask when they're doing risk assessments or they're trying to consider how to effectively manage risks and to address how populations that might be disproportionately impacted. So some of the questions that we can ask is, who is different, differently impacted, and what do those impacts look like? What contributes to that? Who do you consult when you do a risk assessment of this type and what, what types of knowledge do you want to consider? And again, we tried to explore different ranges of information and knowledge as we're considering, considering risk assessment in the province. So with that, I am going to hand it over to Yaron, who will walk us through some of the products that we have available, that you can access on our website, and I will post that website link in the chat Once I pass it over to you,

Yaron Finzi 00:34:58
Yaron, thank you very much, Dan. I hope you appears you will next slide, please The DCR, a work resulted in several products. The two main products are the full report, which includes all the technical details and descriptions of the methodology that the results of the various chapters that you heard DOM introduce the hazards, the values, the disproportionate impacts, descriptions of the extreme events For each hazard and for the multi hazard event and case studies. The second big product was the hazard insight tool, which we will demonstrate Trilby will demonstrate soon. This is an online interface, mapping interface that presents the provincial scale hazard exposure analysis for the hazards. It also provides access for data to download layers, links to additional information and and so on next slide. In addition to these, let's say, comprehensive products, we also provided three summary documents. The first is the executive summary, which is a short overview with a few useful summary tables, the summary for policymakers, which is a little more extensive, and there's maybe very useful for practitioners who want to dig a little bit deeper. And the story map, which is a product design for a general public, it focuses on key findings, and it has more plain language and illustrations to help people understand some of these complicated concepts and their importance. Next slide, please. So the BC has an insight tool, which we often refer to as the hit tool, pretty much looks like this with the map and all the additional information. And again, it's important to realize that it focuses and presents the analysis, which was province wide or provincial scale. It includes some new analysis of existing data, publicly available data, mostly includes also some new future climate projections, for example, for extreme heat, drought and coastal flooding. Some of the existing data sets are used here and presented here in somewhat newer ways, helping us to see what kind of assets, populations, people are exposed to which hazard some of the tools on this and links on the hazard enzyme tool provide access and make available the data, the reports of all of these assets and hazards that we analyze next. It is important one back, please. It is important to understand that the hazard and insight tool focuses on one aspect of of risk, if we consider risk as a as factor of hazards and ex cancer intensity and so on, the exposure of what we value To those hazards and the vulnerability of those assets. This

analysis focused on hazard exposure, and that is where we intersect, or how the assets we value intersect with the areas that we deem to have significant hazard intensity. To show this in the next slide, what we did? We basically the stagger, if you sort of follow it from top to bottom. We took the available data on various hazards that we have for the province, derived the threshold that represents the extent or enables to map the extent of significant hazard. Then we put this together with various, or, I would say, many layers of populations and assets. Some of these are point data, 's like critical facilities or communities. Some are linear infrastructure or polygons representing parks, etc. And in the analysis, we intersect and see which of these assets are within the hazard extent. And that is obviously summed up, and we can present the count of, let's say, critical, critical facilities, or length of roads and linear assets, or percentage of those that are within the hazard extent, also not, not really shown here is that we can also, we have a few data layers that represent the value in terms in monetary terms, so cost of improvement, or cost of replacement, and that too, we can sum up and see the exposure of those assets Next slide. So I actually pass the microphone to Trilby now, and she actually demonstrate how this tool looks, looks and works.

Trilby Buck 00:41:08
Thanks so much, Yaron, that was a great summary of the products that the DCRA has resulted in, from the report to the hit tool, which I'll demo now. Hi everyone. I'm Trilby buck. I'm a geospatial services team lead on the business innovation and emergency response team at GeoBC. I'm calling in from lekwungen territory, and also want to acknowledge that I was born and raised on tonight x and tunaha territory, including the image you see behind me, where I'm grateful to have been able to have as a playground growing up, and makes me very proud to be able to represent GeoBC in our support of EMC 's disaster and climate risk resilience assessment. Now on to the hit page from the home page, there are two ways to begin exploring the hazard Insights tool. There's the drop down, which covers the hazards we've listed today. And you can also hit the Explore hazards button, which will bring you to the All Hazards link section. The BC hazard Insights tool shows the extent of each hazard and what could be impacted by those hazards, such as infrastructure, people, the economy and the environment, it brings together all the data in one reliable and authoritative place. Let me use an example. Let's look at Riverine flood. Each hazard links to its own interactive web page, and each web page is organized into three sections, the information panel, the interactive web map and the infographic and summary panels on the right, these infographics provide a summary of exposures. The tool summarizes direct and indirect impacts across five value groups, population and businesses, critical facilities and infrastructure, transportation and the natural environment. Each widget is accompanied with an i button. This lists which assets are defined and the data source for each users can also use the hazard information button to understand what assets were assessed for each hazard. Additionally, there is a breakdown of the hazard thresholds that were used for each hazard I know when I look at an application like this, I want to get into more of the details what scenarios and what return periods were used, and this is

one way to get that quick summary. On the left the information panel gives users all of the essentials they need to get started in these expandable sections. This includes understanding the data and a link to viewing the methodology summary generating a summary report, which I'll demo soon, the ability to submit feedback directly to us, which we encourage any feedback, the disclaimer and a link to an email that will also get to us if you have any questions or need support regarding the mapping application. I want to take a moment to highlight the methodology summary. The DCRRA methodology is grounded in spatial exposure and hazard analysis using a systematic GIS workflow to quantify and visualize areas where population and assets spatially intersect with hazard extents. This summary explains with graphics, including data sources and thresholds and processes for all the different hazards. So if you're wanting a more in depth, detailed understanding of how this came about, I would encourage you to start here. Now back to the map. The tool is designed to be used at the provincial and regional levels, and does not contain community or property level information. You can see that when we zoom into the community or building level, we reach a zoom limit. Even though we can use this tool to gain awareness, the data itself is not suitable for site specific assessment. The tool can provide a lot of insights, but it's tailored for a larger scale, and this is important to understand. Zooming down into the property level is irrelevant, misleading and inappropriate at the provincial or regional scale, this information can support broader decision making and help prioritize actions based on patterns of hazard exposure across regions. For example, when considering infrastructure assessments, users can analyze population exposure based on 2021 census data, social vulnerability scores, or overlay other hazards such as coastal flood, coastal flood future and others. There's also a variety of services and transportation layers that can be overlaid to gain insights, such as communication lines or water supply and sanitary and storm drain lines. So at a larger level on the right side, we see that flood hazard exposure is giving us the whole province of British Columbia. But what if I want a more granular report? You can click anywhere on the map, and the Regional District within which you clicked will filter the summaries on the right hand side. Now we see it's filtering for Fraser Valley Regional District. Right now, statistics are summarized and filterable by Regional District, and we're working with the first people 's Cultural Council to be able to add summaries by First Nation language groups as well. We can immediately see that about 11% of the population falls within the flood exposure extent, including vulnerable groups like children under six and adults over 65 this tool shows roughly 14% of businesses are exposed, representing 14% of annual revenue, which is important for understanding potential economic disruptions For many sectors, this gives you a quick, consistent starting point for mitigation planning or conversations with leadership. It's the first 10% of a place based assessment done for you using standardized provincial data. From here, users can layer in studies LIDAR or digital surface models or on the ground knowledge, but the hazard Insights tool ensures everyone starts from the same foundational information. I want to bring your attention to an additional tool that 's available in the extreme heat section. From the extreme heat tool, you will see a button called Compare future hazard extent. This opens up an additional window that allows you to slide baseline scenarios with a projected

future extent. Additionally by Regional District, exposure levels can be added in, and the data sets can be filtered by Regional District as well. Here I'll do Fraser Valley, which was my initial example. You can see on the right side the infographics are color coded blue for baseline and red for future. And we can see in more detail the differences between the baseline and projected so now let's imagine I want to bring this information to someone for discussion about our priorities on wildfire or flood mitigation. What other than screenshots, are my options on the left side of the tool. I'll bring your attention back to generate summary. This option allows you to simply confirm the hazard that you're interested in and the area. Provide an email, and the system will generate a clean Summary Report delivered to your email within 24 hours. This report includes three things, a map with the hazard extent and the boundary of your interested region, all of the exposure indicators in tabular format and a glossary of key terms used in the report. So instead of piecing together multiple data sets or screenshots, you get one standardized package you can attach to an email or bring into a meeting. This is exactly the type of product you can use to start a strategic conversation about exposure and potential mitigation priorities. The goal here is simple create a shareable, evidence based understanding of the hazard and what 's at stake. All the hazards and exposure layers behind this tool are published as authoritative provincial services in the data download page, you can download them or pull them straight into an ArcGIS Online environment or desktop GIS. This gives you a provincial single source of exposure information and the ability to customize with your own data sets to support planning risk assessments or emergency exercises. With that, I'm going to pass it back to Yaron, who's going to talk more about linkages and next steps. Thank you.

Yaron Finzi 00:50:51
Trilby, wonderful demo. It's always fun to see the tool again. So looking ahead, obviously we want to see the DCR a product, products and tools and insights being used by as many people as possible, by future risk assessors, practitioners, communities and other partners. We truly believe that many of the elements in the DCRA are transferable or usable for these users. Users can find good examples of in the methodology of how to use both qualitative and quantitative approaches. The context that we set in these in the DCRA includes important definitions and guiding concepts for conducting such risk assessment. It also includes First Nations definitions and understanding all the hazards and the values as defined by the First Nation Committee, which is another useful resource, and of course, the hazard insight tool and and the various other climate and other insights and data that we provide in the DCRA, we believe, and we Hope will be used in future assessments. Next slide. One other example of resource that the BC government has helped provide access to is the BC seismic microzonation mapping portal, this this Porter presents very important information for assessing seismic risk on a local scale. It houses a lot of the recent work that was led by ICL. ICLR and Western University and the Metro Vancouver microzonation mapping project. It also provides access to previous microzonation studies and links to the engineers and geoscientists at BC professional practice guidelines. This

information for whoever is not aware of the details of the microzonation mapping, it provides a lot of very important information about amplifications, local amplifications, liquefaction 's potential triggering of earthquakes, sorry, of landslides by earthquakes. And while we currently mostly have the Metro Vancouver microzonations data, we hope eventually to have more data and to add it to this Porter, other next steps that the EMCR NBC government are hoping to get risk assessment progress on. Next slide. Tom, thank you. We are helping lead ministry work on risk assessment on other hazards, tsunami, volcano, landslides, are a few that are on the horizon, but other hazards too. We are working currently on providing guidance and tools for completing future risk assessments. This. These fully described assessment approaches, qualitative and quantitative, and they would help future assessors to uphold indigenous and local knowledge and consider also the important intersectional disadvantages that certain populations may have obviously, we will keep on working on the hazard insight tool. We hope to develop it and add new hazards and new analysis to it. All of this information and tools will be available on the climate ready BC, which is a one stop shop online site that exists now, and we will enhance it as we have new tools and new resources. And currently, we're working and with the help of picic, the Pacific climate impact consortium, to provide regional assessments of climate projections and how they may impact the hazards and the risk drivers. And these are going to be done on the watershed or major watershed scale. And we think these will be very helpful for future assessors too. And I think this was the last slide, yes. So thank you very much. Wonderful.

Keith Porter 00:56:08
Thank you Dominique, Trilby and Yaron. This was a great presentation. We have a lot of questions from attendees, but I want to ask you one or two of my own. First tell me about, I'm sorry, Corey, we, we if you've got questions, you've got to type them into the Q and A box. Tell me about policymaker reaction. Who was you've had three months now since releasing the report to interact with policymakers. So I assume you've had some conversations. Did you Did any of them lead to somebody saying they were shocked and wish they knew known what you're saying before? Did you change anybody's minds? Did anybody sort of double down on climate denial. What were the what are your big takeaways from policymaker discussion so far?

Dominique Sigg 00:57:07
Hmm, yeah, that's a really good question. And yeah, it has been a few months. I think I'd say a couple of things. We've generally it's been very well received. We've had lots of good feedback. We've had an opportunity to present this in a few different forums, such as the building resilient communities conference late last year, and we've done some online webinars and have been reaching out to other audiences. I think I've heard, you know, a mix of things I don't like a lot of people have said, you know, this is really important information, and it helps us to understand and determine how to manage these risks. I've also heard folks say, like, you know, a lot of what is presented in here, it makes sense, and we're seeing it, and it just verifies what

we already know. And so I think that is really one of the important features of a risk assessment, especially when you're doing a like a multi hazard assessment, is it 's synthesizing our current knowledge and developing, in some cases, new new information, and putting it in into one place for people to digest and refer to. And so I think, you know, one way I can answer that question is really how it was received when we did the previous climate risk assessment in 2019 because we've had a lot longer to see how that, how that was received, and how it, how it has impacted policy development. And for us, it was being the first time we done a climate risk assessment in the province, is it was a conversation starter with our decision makers to say, here's the nature of the problem, and how are we going to address it. And that risk assessment helped to inform the climate preparedness and adaptation strategy, which outlined what the province was going to do to manage climate related risks, and that was released a few years ago. So I think these types of resources help to build the business case for why we need more effective management of climate risks and disasters.

Keith Porter 00:59:07
Thanks. I'm going to go to some of the attendees questions before I come back with more of my own. Abigail Jorgeson asks for an explanation you alluded to Snowpack and drought. Abigail asks, What is Snowpack? What does it look like in BC? And basically, how does that? How does Snowpack relate to drought?

Dominique Sigg 00:59:33
Yeah, that's a great question. I I'm not a hydraulic hydrology expert, but I'll do my best to answer, and I invite Yaron and and Trilby to add anything. So in this province, there's a couple of things. So most of a lot of our precipitation falls as snow in the winter time, and that Snowpack, then, as it melts through the spring and the summer, provides water in our creeks and our rivers and our water systems. So there's a couple of things that happen with climate change. You tend to get more precipitation falling as rain in the winter, which means less Snowpack. The other thing that happens is with much earlier heatwaves or warmer temperatures in the spring, that Snowpack melts a lot faster, so you have less Snowpack available for the important water needs you have throughout the drier months. And so that's what we are seeing. Is drought being driven by less Snowpack to start with, and that often melting and disappearing faster than we then we have seen in the past. So we get extremely low water levels in our creeks and rivers, for example. So again, not I'm not an expert here, but I invite Yaron or Trilby if you have anything you'd like to add,

Yaron Finzi 01:00:58
maybe just an intuitive addition, pretty much like glaciers, are receding and becoming smaller due to climate change. Snowpack. Snowpack is, by definition, it's it accumulates in winter and it slowly melts and supports the watersheds. But if it is receding or melting faster or not

accumulating, we're missing a lot of the water in the water system, in the watersheds, mostly like in the second half of the dry season, that becomes a big issue. Gotcha. Thanks.

Keith Porter 01:01:39
Christine Cal who spoke about the Wildland urban interface, she pointed out, Dominique, that you said that Wildland urban interface fires pose significant risk to communities. And Christine says that a primary mitigation and preparation tool for communities regarding Wu e risk is fire smart. She says that province has simply run out of money for the program. And she quotes, I guess, policymaker broland speaking to CBC Daybreak south, saying that fire smart is critical. It's part of learning to live with wildfire in our communities, but I guess Christine is wondering, is the province going to be trying to fund, trying to address the funding shortfall, to make fire smart available for make It available again?

Dominique Sigg 01:02:41
Yeah, that's a good question. I don't know the specifics of that one. I would have to take that back to our BC wildfire service, but you're right. We had, this was one of the programs announced in the climate preparedness and adaptation strategy. It was three year funding had to continue that fire SMART program. I'm not sure what the next steps look like for that. There are a number of things that the province has done around wildfire management in the last number of years, including having a year round activation for wild side wildfire service teams. But I would be happy to take that back to our colleagues in BC wildfire service and see if I can get an answer for you.

Keith Porter 01:03:20
Thanks. Let's see. I had another question. Lot of our attendees are insurers. ICLR is an insurer supported organization. We're not lobby group or anything, but a lot of people on the call today come from the insurance world. Can you tell me about any interaction you've had with insurers among those hundreds of people that you dealt with.

Dominique Sigg 01:03:48
So I just want to make sure I understand just the reaction that we've had from insurers.

Keith Porter 01:03:54
Well, I mean, you said you've interacted with a couple of 100 people in preparing the DCRA. Were any of them insurance executives? Did you? Was any of the DCR, a, formulated with insurer concerns in mind?

Dominique Sigg 01:04:14
Yeah, great question. And I do see some familiar faces on on the call today, and we've had, you know, had some good follow up conversations. I met a number of folks from the insurance

industry at the the building resilience communities conference last year, for example, and had some really good feedback from them in terms of the importance of this information. We also know that, you know, insurance companies, you have a lot of your own information as well. And these things are, these are things that you're already, you're also looking at. And so, you know, again, I think this, this, this contributes to a body of understanding of disaster and climate risks. And, you know, would welcome feedback and other discussions with with insurance, the insurance industry, on how they, you know, they see and are managing these types of risks as well. Thanks.

Keith Porter 01:05:12
Let's see. Aramos ebloma says great presentation. Dominique, I'm wondering if there was a framework or a set of criteria used to determine which groups of people were impacted differently from the overall BC population when exposed to the same hazards, basically having population and their effects on different segments the population.

Dominique Sigg 01:05:40
Yeah, I'll maybe start that one generally and then pass it over to Yaron about some of the geospatial analysis, because I think there's a couple of different things there. So we worked very closely with with this Social Planning and Research Council, BC, Spark BC, who really have done a lot of deep work in looking at how different populations are affected by these types of disaster and climate risks. We We have an agreement with them as well where they're doing some research into this space, and so they really help to guide our thinking around how to consider the disproportionate impacts. They were a member of our equity advisory group, and generally in the the research we did, like, what? What's the available literature out there? We explored this in a number of different ways. So there wasn't necessarily, like a framework or like a set of criteria, but we were building that based on other work that had already been done. We have some, some, some studies that the province conducted over the last number of years looking at how, for example, you know, the some extreme events in BC have impacted different populations. And we also drew a lot of that guidance from from the work of Spark BC and others. So but then we also for the hazard Insights tool on the geospatial analysis. We had some specific data sets that we use to address that as well. So I might pass it over to Yaron to speak to that Sure.

Yaron Finzi 01:07:11
Thank you. Tom maybe even before the data set and the hazard insight tool, I'll just remind or tell our listeners that the report includes also a several case studies, and some of those case studies are actually focused on the impacts and the work to understand the impacts on disproportionately impacted populations. So that's another place to look. And specifically one of the case studies was focused on gender diverse population in small coastal towns. So there are there's a lot of information in the DCRA about this topic, even if the answers are not simple,

we don't have a very simple, straightforward criteria. But in the hazard insight tool we we try to for the assets that were assessed that the hazard extent is relevant for, we try to provide as much information as we can about the demographics and socio economic characteristics of who's exposed. So when you look at the hazard, n say tool, let's say you zoom into a Regional District, you can see information about how what is the percentage of the people without education or without a knowledge of English or French, and how many are immigrants or immigrated, sorry, in the last five years? How many have moved to BC or to this location in the last year? All sorts of Oh yeah, thank you Trilby for sharing, or DOM. I'm not sure who's sharing, but Okay, and this includes most of this data comes from NRCan 's physical and social fabric data set, and includes also the social vulnerability index, which is one indicator of vulnerability of population, one social one indicator of social vulnerability. To keep it realistic, or to be to realize that this is a very complex issue. There are probably more than 100 indicators in this data set. So we don't present them all, but it, it's, it's the tip of an iceberg or iceberg, or it's the, let's say, first milestone in exploring these vulnerabilities in these populations,

Keith Porter 01:09:59
you're basically working with the available tools, with the available demographic data of different demographic groups, right?

Yaron Finzi 01:10:07
Yes, and and we do realize there's more work we can do. There are ways to synthesize the richness of that information. But for now, we've, we've we've selected what seemed to be the most relevant indicators for presenting in this tool at the scale and with available information. So it's a good start, if I mean, we're proud of it. There's a lot of more work to be done. Definitely. This is a complicated topic. Yeah, absolutely.

Keith Porter 01:10:48
And on that point, let me follow up on something you mentioned about collaboration interaction with indigenous communities. Tell me about the tell me more about that. Tell me more about the value you got from that interaction with indigenous communities and the value that they got from the DCRA. What have tribal groups said they like best or like least?

Dominique Sigg 01:11:23
Yeah, great question, Keith. And you know, I think to answer that question, I'd go back. I go back further in time than you know, before we started this particular project. So as I mentioned at the beginning, we did a climate risk assessment in and released it in 2019 and that was largely a desktop based study where we didn't, we didn't engage with nations at all. It was very much internal to government focused. And that was in response to the Auditor General 's report that said, you know, provinces in in in Canada need to understand their climate risks, and should be doing risk assessments. So we, got, as I said, some pretty strong feedback from

many nations, and from BC assembly, First Nations, for example, that you know you can't understand and explore the impacts of climate change without understanding how those things are felt by by nations in the province. And so since that time, we've been engaging with nations in many different formats and venues to build an understanding of how they experience risks. I think one of the most significant ways that we like feedback that we received and how that influenced what we've done in this assessment is we heard from many nations that that risk assessments are inherently a deficit based approach. It's like, what are all the terrible things that are going to happen and how bad will they be? Whereas often, when we engage with nations on these types of topics, they talk about the importance of understanding our resilience and knowing where our strengths lie. So that was why we wanted to take a more strengths based approach to this work and to in to explore resilience and not just risk. So I think that's a key piece of feedback that we've built into this process. I think that you know the This is a work. This is a space that we will continue to learn and iterate how to how to do this work better. I think we have in this province. We now have the declaration act on the rights of indigenous people, which outline how we should be working with with nations for this type of work. We also have our emergency and disaster management act that says for regulated entities like ministries, local governments in the future of critical infrastructure owners and public sector organizations, when they're doing risk they're required to do risk assessments and they're required to do emergency management plans that are informed by those risk assessments, and those risk assessments need to consider available local and indigenous knowledge. So we're building this into our systems to make sure that we're considering a broad range of knowledges, and not just, you know, typically, risk assessments can focus just on how, how is the built environment impacted, and we really wanted to look at how are other things that we care about impacted as well. So a bit of a rambling answer. I hope that answers your question.

Keith Porter 01:14:24
Very interesting. I mean, I really like this idea of viewing risk assessments as a deficit based approach, and the notion that that resilience, resilience based approach might be, I don't know, some sort of different lens. I don't know. There's probably a lot there to follow up on, and I'm going to give that some thought. Thank you so much for that. Let's see a question from Mac Carmichael. This looks like for Trilby, the hit shows coastal flood and extreme heat have future scenarios. And Mac asks whether the other three climate hazards, drought, Riverine, flood and wildfire are going to have future links as well. Yaron, do you want to start? To start a Friday? Yaron, on this one? I believe? Okay, sure, yeah.

Yaron Finzi 01:15:30
First of all, obviously, if, if we can, if we have the data with if we have certainty, if, if it's possible, we would want to have it definitely. Not everything is not all of the future projections are feasible at the moment. At this level, for for wildfire, we can, for example, we some of the work

we did was based on wire wildfire weather conditions, and these are impacted by various aspects of the weather. Not all of them are, let's say, easily projected to the future. So it's complicated. We would want to do that if that is robust and reliable. Other other hazards like Riverine flood, we know how to project some of the main risk drivers. Riverine flood is impacted by so many local let's say factors, including man made structures, man made land use, and others that are that make the future projections, let's say, more challenging. Sometimes we have to think twice how reliable they would be. So there's a lot of work that we hope to do. At the moment, we could not include those projections. And I hope Tom this is sometimes I'm the optimistic person on the team. I want to do everything. I want to assess everything. This is, this seems to be, hopefully in our future. I don't know.

Dominique Sigg 01:17:32
Yeah, I think what I would add is what we've got in the hazard Insights tool today is very much a starting point. We did, we did, we did some analysis specifically for this provincial scale risk assessment, and we do want to continue to build that out over time. One of the things that we've heard consistently from communities for a long time is the need to have this type of information available in one place where it can be accessed, rather than having to go to 10 different ministries or different organizations in order to find it. So we definitely want to build this out in the future. This is very much what we started with, and we're hoping to continue to add to it over time.

Keith Porter 01:18:08
As far as starting places go, there's never an ending place. I mean, Blaise Pascal likened knowledge to a sphere. The more you grow, the more you grow it, the greater its contact with the unknown. So the more questions you answer, the you know, the more questions get asked. Let's see a couple of speakers, but a couple of attendees want to know about other provinces. I mean, you are employees of the BC government. Have you had conversations with other provinces? Do you know if tools like this are being developed for Ontario or for other places?

Dominique Sigg 01:18:54
Yeah, great question. I don't know specifically if, like similar tools to this are being developed. I know many provinces are making hazard extent mapping available to to communities and making it publicly available in terms of, yeah, working with other provinces. Again, this has been a real journey over the last you know, since we did our first climate risk assessment in 2019 we were one of the first provinces to do a climate risk assessment of for for the for our province, and we had a lot of other jurisdictions in Canada, Canada coming to us after that, saying, you know, tell us how you did it. Can we learn from you? And so we had a lot of great conversations at that time. And then they've gone and done risk assessments as well, and then we followed up with them, saying, What did you learn in your risk assessment? And how can we build on that? So it's very much an iterative process. We've We've learned a lot from our

neighbors, and some of you know, what they have done has helped to inform the risk assessment that we did today. We know we also hope to have opportunities to share this in the future. There are, you know, there are many, many venues for doing that. We presented it at adaptation Canada in 2020 I don't know what our prospects are for attending that conference this year, but it's a good opportunity to share our learnings with other jurisdictions. Thanks.

Keith Porter 01:20:21
Monica Niles asks a question that we sort of touched on when I tried to frame our conversation today. Monica asked the assessment. 's great. Thanks for the information. You haven't talked much about action, yes or they asked. They assume that the assessment was created for more than just discussion. Of course, it was who's going to be responsible for the action? Or just tell us, as you've spoken with, the people who make policy, who are they? What policies are they making, what actions you've seen coming out of this tool?

Dominique Sigg 01:20:59
Yeah, it's a great question. And yeah, the focus today was very much on the risk assessment, and we haven't spoken too much about the next steps this. There's a few things here, I think, as I said, you know, in a previous climate risk assessment was used to inform the climate preparedness and adaptation strategy that was released. We there was an intent originally to have for our ministry to develop a risk reduction plan that would follow this assessment. We are in very different economic times than we were at the start of this project a few years ago, and I know that that's shared right across this this country in terms of the fiscal realities that we're working in right now. And so there is, you know, this work will continue to inform future action by by the province. We want it to be useful for others as they develop their risk assessments and their emergency management plans. And you know, I don't have specifics on what that looks like for us as a provincial government at this stage, but it, you know, there is still, there's a lot of work that's happening to address climate risks and other disasters that we're facing in This province, and specifically for communities. For example, there is funding available through a variety of different funding programs led by my ministry, as well as energy and climate solutions that provide funding for communities, not only to do risk assessments but also to develop mitigation actions to address those risks. So a number of different ways. But yeah, it's, it's, it's definitely, you know, a more challenging time for investing in these types of actions.

Keith Porter 01:22:54
Have you interacted at all with the people who write or adopt Vancouver or the provincial building code?

Dominique Sigg 01:23:05
Yeah, good question. I 's start and maybe pass it over to Yaron. So we did have some

involvement from our colleagues within the provincial government that are responsible for the building code. They were involved in in our working groups through this project, and obviously they are working to continue to update the building code to take into consideration, in particular climate risks and the change in climate and how these things are being are impacting buildings, for example. So that's, you know, again, this is another good example of how this type of work can inform, you know, future policy direction around things like building codes. But I'll maybe Johanna pass it over to you, because I know you've had a lot of those conversations.

Yaron Finzi 01:23:51
I'll just add that the conversation with building code experts both from earthquake building code or regulations regarding Earth rate, but also heat and other aspects of the building code, they provided important insights, because obviously, if the building is suitable, it's a very good way of mitigating some of the risk if the building will not collapse. That is a fantastic result, or basic result that would mitigate some of the risk if we have air conditioning and other aspects of the building that that's super important. And these these insights are summarized throughout the report. Some of the challenges, specifically for the earthquake work group, was that there's so many changes on the new horizon on how the building code is adopted from national level to the provincial level. So some of some of the insights I um, had to remain, let's say, general and and to focus on what we know now and building codes now, and not so much on changes that we know are coming, because we did not have, or would not put that as a focus of this work. And there are other forums that are dealing with that. So, yes, super important. We did our best to include it in insights in both the built environment chapter and the various hazard chapters. But there's, there's more, more work to be done there, and changes that are coming will have to be addressed.

Keith Porter 01:25:46
So no cocky name on like a concrete change to either to the building code or a concrete change to funding mechanisms to mitigate existing buildings that came out of

Yaron Finzi 01:26:02
this effort, something particular, Don can, can, can maybe provide details. But the the the risk assessment, put an emphasis on identifying how or the importance of the building code and how the risks are driven by maybe insufficient regulation or whatever that are related to the building code. But we did not try to provide recommendations for building code like specifics, though maybe, maybe you have a, yeah.

Dominique Sigg 01:26:44
I mean, maybe, yeah, a couple of things to add there. I mean, you know this, this assessment has just been out for a few months. And obviously, you know, translating things into into policy

direction can take some more time. Provincial building codes are also, you know, built on what first comes from federal building code. So there is a process there, and we know that there is work underway to to up, to update these codes, and that's been that's been in in progress for some time. And, you know, again, I'm not the expert, and I'd be happy to take that back to our colleagues in in the relevant ministry, but, you know, it's there. They're always being updated, and it's a bit of a it's an iterative process, right? So we, we get changes at the at the federal level, and then that gets adapted into changes at a provincial level.

Keith Porter 01:27:37
A user asked about their intensity, asked about plans to keep updating the tool? Do you have a, like, any kind of long term funding commitment that where you know how long you're going to be able to keep improving the tool?

Dominique Sigg 01:27:54
Yeah, that's a great question. And yes, that is a priority for us. This is, you know, I think, as we said a few times, what's present in the hazard Insights tool right now as a starting point, and we do want to continue to build that out. We've got an existing collaboration with GeoBC to do that over the next number of years that includes, you know, a few things like updating data sets that we already have. For example, The SVI data set that we used since we've done the analysis, a new version has come out, the index, the social vulnerability analysis. Thank you for reminding me not to use my acronym jargon. So we would like to update that obviously we are exploring, looking at additional hazards and adding those to the tool over time. So that's work that will continue for the next few years, I would see wonderful.

Keith Porter 01:28:45
All right, we are getting low on time. Do you have any last, any final, big picture takeaways, if people were to take, like, one thing away from from this talk, each of you, 30 seconds, 60 seconds. What should that be?

Dominique Sigg 01:29:04
Ah, that's a great question. I can start. I mean, I think what I would say is, you know, this is, as I said, to answer one of the an earlier question like risk assessments are conversation starters, right? They provide information for that help us to understand risk and figure out ways to mitigate those risks. And so what we want to see is that that conversation to continue and to hear from others about how this information can be used, how we how we mitigate those risks. We're doing that ourselves, within our own ministry and within other ministries, to not only understand risk, but then to use that information to figure out, what are the priorities for reducing that risk. That's and I'd love to hear from from folks about how they're exploring that you know. Going back to your original question, comment Keith, about that measurement to management paradigm. Yeah, maybe I'll pass it over to Yaron.

Yaron Finzi 01:30:00
I will take it a very high level, one of the wonderful things we got from the First Nations discussions, or is the view of of the world, that the physical world as a living being, as a relative, the what we call a hazard, is a natural phenomena which is a sibling or a relative or a spirit, that's that's an important perspective. I want to bring in something from, let's say modern cultural let's say anxiety or concerns. You need to learn to coexist. Okay, we need to learn to coexist between ourselves, different people, and we need to learn to coexist with these phenomena, the nature, the ecosystems, everything that is relying on this world to keep on going and functioning. And as long as we can't, you know, talk to the earthquake, we better study it ourselves and gain all the information we can to have a clear understanding of the risks, or we cannot intelligibly plan our sustained coexistence with these phenomena so a very high level. But the key is information, understanding and realizing that they are here to stay, these phenomena, that these hazards are part of our lives forever, we should learn to coexist with them.

Trilby Buck 01:31:33
Trilby, yeah. I mean, hard to top what 's been said. But yeah, I would say that, you know, technology is is pretty advanced at this point. There's a lot that technology can get us to but it's only as valuable as what we put into it is what we get out of it. It's not going to be a magic bullet that solves all of these questions, these discussions that we're having today are what needs to guide that technology towards a meaningful solution, and it's a representation of where we're at right now. We've been pretty careful to differentiate between hazard exposure and risk, because risk and resilience offers an opportunity to change things for the future. And I would just add in my own reflections around, you know, climate change, and hope you know there's going to be a lot of changes. And you know, maybe that makes me feel a bit unhelpful, and I think it's important to show up every day and try in spite of that, maybe not because there's a hope to go back to, you know, this, this mountain that I grew up on, but because it's the right thing to do.

Keith Porter 01:32:54
Awesome. Thank you. Thanks Dominique Yaron Trilby for a great presentation. And to everybody else, thank you for attending. Remember you're going to find video, audio, text, transcript and speakers deck by Monday at www.iclr.org/workshops and please remember to join me and some colleagues next month, on Friday, March 13, and I'll tell you about ICLR 's new societal loss history for Canada, and we'll have a discussion about that. So I hope everybody has a great weekend, and I hope to see you all next month. Bye, thanks everyone. Thank you. Thank you. Bye.