

# CITYAGE DIGITAL ROUNDTABLE **DATA TO DRIVE CLIMATE ACTION**

APRIL 29, 2021 | 10:30 AM - 12:00 PM PT

Held in partnership with Google Cloud, Climate Engine and Intel

CITYAGE



Google Cloud



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# BACKGROUND

**British Columbia is a leader in responsible natural resource development and climate action. The next step in tackling both relies on using AI, cloud and data technologies.**

On April 29, CityAge, along with Google Cloud Canada, Intel and Climate Engine, brought together an impactful set of public and private sector leaders to look at how cloud and earth observation technologies drive better decision-making support for government leaders shaping BC and Canada's response to climate change.

We've summarized the key points of discussion from this 90-minute session. Participants who would like access to the full transcript can request it via [lauren@cityage.com](mailto:lauren@cityage.com).

# ABOUT THE TOPIC:

There's no question that data is helpful when we examine the crucial topic of climate change. We can now see the impacts of the way we live and the choices we make, as well as the consequences of those choices. How we interpret and address this information will determine the future of the planet and, on a more intimate scale, the province of BC.

How do we generate insights from the enormous amount of data available to us? How do we structure the partnerships that are necessary to drive those insights? In this discussion, we examine how data can support our governments' decision-making when it comes to climate action.

“For the public sector to be able to respond to the existential threat of climate change, geospatial systems need to be a core piece of infrastructure. This data is now fundamental to the functioning of government.”

# PARTICIPANTS INCLUDED:



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## KATE MORAN

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## FLORINA HALASAN

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### MARC ANDREW

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### MIRO CERNETIG

President & Co-Founder,  
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## PARTICIPANTS' KEY CONCLUSIONS:

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Thanks to geospatial systems and the information they provide, ***we know a lot about the earth and how it's changing.*** That knowledge should be the core resource for decision-makers, allowing them to make better-informed, science-based judgements when it comes to climate and natural resources.

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The big paradigm shift is that instead of bringing collected data to an algorithm, with Google Earth Engine, scientists can bring algorithms to the data, which can live in the cloud, be processed in the cloud, be delivered as an API and then accessed from different locations as analysis-ready data that can even be provided in map format. With a 30-year average of temperature and land surface temperature, for example, ***actual warming can be mapped over time.***

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Canada's economic and environmental security depends on its ability to meet the challenges posed by climate change. ***Groups within public sector institutions must plan now*** for changes that will occur in 10, 20, 30 years, and react to extreme weather events in ways that will increase human resilience.

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***In an ideal world,*** governments would have access to free and open data from both the public and private sectors, and climate data would be as commonly used as financial data in the development of any policy decision.

# PERSPECTIVES AND INSIGHTS

FROM THE VERBATIM TRANSCRIPT



## IF GOVERNMENT IS A PLATFORM THAT HAS THE DATA, WHAT ARE THE MODELS THAT IT CAN WORK WITH?

**Public and private sector experts, other levels of government and schools, colleges and universities all have contributions to make to climate action.**

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**Governments must move faster when it comes to climate change.** Experts in current geospatial data should engage with government scientists and researchers to inform them about AI and machine learning, and they should be provided with the most up-to-date tools.

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Scientists across the public and private sectors create algorithms. They're looking at these models, trying to apply them to the actual data. **How do we convert that and get that into decision-making software?** And who is the decision-maker – the insurance company, a bank, a person in the public sector?

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**Adaptation infrastructure needs to have data infrastructure.** If we can have a two-week or a one-month heads-up that a potentially cataclysmic event is going to happen, that will allow management to kick in.

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Collaboration is critical. Our sociological and human systems, public and private sectors, levels of government and multilateral interoperability are all essential – **it's the whole global system that we need to worry about.** In BC, we need to reduce greenhouse gases, build our innovation ecosystem, drive GDP through exports and promote the adoption and dispersion of new innovation in our natural resource sector.

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The City of Kelowna has a collaborative partnership with UBC Okanagan in order to access data gathered by its researchers. It's now taking all that data from the last 20, 30 years and is using AI to try and guess when a flood is going to happen. But without an intergovernmental agency or committee, **how does it make the right decisions?**

## 2. THE PROMISE OF VAST TROVES OF DATA IS THAT WE CAN BETTER MONITOR, ASSESS AND RESPOND TO CLIMATE CHANGE. HOW DO WE ACCELERATE INSIGHTS USING THAT DATA?

**Climate data should be treated as essential to good governance, and collaborations between governments must become the norm.**

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*For the public sector to be able to respond to the existential threat of climate change, **geospatial systems need to be a core piece of infrastructure.** This is fundamental to the functioning of government.*

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*Imagine a world **where climate data is just as common as financial data** in any policy development or decision.*

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*As extreme weather events get more severe and more frequent, **it's really going to be up to us,** as groups within public sector institutions, to try to figure out how we can react to those better so that we're increasing our resilience.*

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**The challenge is response.** First, we must get the data; then, we must establish some degree of predictability; and then, we must work on a shared response to an event like a forest fire and its potential effects beyond the site of the event. We're part of the lower Fraser River flood hazard management collective, and that's going to be pretty valuable. There's now less segmentation across local governments and operations in the Lower Mainland, but we could do more.



# 3. WHAT ARE THE PAIN POINTS WITHIN VARIOUS LEVELS OF GOVERNMENT WHEN IT COMES TO PUTTING DATA TO WORK FOR IMPROVED DECISION-MAKING AND IMPLEMENTATION?

**The old model of government being slow-moving, monolithic and self-serving needs a reboot. Joint efforts will help.**

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**We can't just rely on standards of the past** because obviously things are going to look very different in the decades ahead. The Standards Council of Canada is working with Environment Canada and Natural Resources Canada on standardizing flood mapping, for example, but it's very contentious. How do you define floodplains, floodway, floor fringe? Because depending how you define those things, it affects how you draw the maps and that affects people's properties and the interests of homeowners and developers.

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Super-high resolution flood maps can be produced using LIDAR to provide one-in-10, one-in-100 and one-in-500 year flooding return periods, and they are shockingly inexpensive. **The challenge is political** – are there going to be economic incentives to not publish flood maps because they're going to cause too much political damage?

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It really just comes down to political will, and honestly, maybe it's something where the private sector has to jump in and say, "**We're just going to skip all the political fighting over flood mapping and we'll just take the initiative and do it.**"

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**We have a huge number of things in front of us that we can do**, and we have all the pieces we need in order to do them. The real risks are in terms of getting the people working together with the right kind of platforms and the right access to data.



# 4.

## HOW IS DATA DRIVING INSIGHTS AND DECISION-MAKING IN THE OCEAN COMMUNITY?

**Data helps us monitor what's going on underneath the waves and the broader impact of changes in the ocean.**

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*There's a huge gap in terms of data about what's happening below the ocean. So Defence Research and Development Canada (DARPA) has a new program called the Ocean Internet of Things that's using cross sensors to try and understand the ocean much better.*

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*Ocean warming is critical to understanding and reducing the uncertainty about forecasting weather systems. The warm blob that happened in BC waters caused drought, fires and had a **huge economic impact** on North America, so understanding those things will be important.*

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*At Ocean Networks Canada, we need to make sure we invest in digital infrastructure and physical infrastructure to deliver sensors of data beneath the sea floor. **Sea level rise, storm surge, ocean acidification and ocean warming are all areas of concern.***

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*On the northwest coast of Vancouver Island, we're installing an earthquake early warning system, because these big earthquakes happen in the ocean. So Ocean Networks Canada has been working with BC Hydro and Fortis, and **there's an algorithm data product that sends small amounts of information** to the operators of infrastructure to do things like slow down the train so people don't get killed.*



# 5. WHAT OTHER COLLABORATIONS ARE HAPPENING ON THIS FRONT?

**BC universities like UBC and SFU, public agencies, and Google are some of the resources that governments and public and private sector companies can potentially call upon to provide information and support.**

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**UBC is very active in greenhouse gas emissions and decarbonization.** There are about 300 researchers and 20 different centres there who often work with people at SFU in the fields of climate action and natural hazards like flooding and wildfires. That's a huge resource that would really like to engage with the government more fully.

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UBC has two separate entrepreneurial programs, a climate venture studio that builds companies that can address climate issues, and **a creative destruction lab with a climate stream.**

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We all agree on the need for improved decision-making and the importance of the human in the loop in that decision-making. It's not about automation making decisions on its own, **it's about the humans** and the processes that are associated with doing that, and it's about partnerships.

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**Google's view is that everybody has a part to play in sustainability.** We need to make sure that we all do our part and government is probably the only place that can bring all the different parties together for the betterment of society.

