

# Councilor Gord Baird:

## Report: Livable Cities Forum 2017

### Workshops Attended:

- Understanding Wildland Urban Interface Fire Risk in Canada
- Blue, Breen and Grey Infrastructure: Integrated solutions for low carbon resilience
- Creating Resilient Low Carbon Food Systems Using the Collective Impact Framework
- Managing Flood Risk: Extreme Rainfall, Overland Flooding & Sea Level Rise
- Innovative Approaches to Implementation
- Water, Water Everywhere... or Nowhere: Resilience in the Face of New Extremes
- Partners for Climate Protection (PCP) Interactive Discussion on Integrated Climate Action

### Conference Overview:

The conference was a gathering of individuals involved in public service including:

- Elected officials
- Local government administrative personnel (from departments of engineering, sustainability and planning, resilience, emergency response)
- Federal and Provincial government policy analysts
- Post-Secondary Institutions (researchers and directors of relevant departments)
- Private Sector (Insurance Bureau of Canada, Insurers, Research partners)

### Workshop Summaries

#### Understanding Wildland Urban Interface Fire Risk in Canada

Presenters -

- Steve Taylor, Research Scientist, Canadian Forest Service
- Kelly Johnston, Executive Director Partners in Protection Association (Firesmart)
- Doug Carey, Platoon Leader, Victoria Fire Department
- Steve Sakiyama, (retired) Air Science Specialist, BC MOE

Presentations and discussions focused around research on wildland fire including, fire behaviour, post-disaster outcomes, perspectives from frontline experience, and video evidence of fire spread. Wildfires quickly transition to urban conflagration fires and overwhelms resources. Communities often lack planning for the recovery process of the environment, infrastructure, economy and the social fabric.

No clear line defines the Wildland Urban Interface (WUI) – Recent wildfires have offered unprecedented observation of fire spread - experience shows that structures far from the WUI interface combust from ember transfer. Due to the nature of property ownership and lot sizing, the common buffer zones (crown fire buffer 30m, ground fire 10m) usually extend into neighbouring properties removing one's ability to fully manage risk.

Exposure risk – 27% of structures in Canada are within the 2km range of the Wildland Urban Interface (WUI) and thus at high risk of WUI fires. Most communities fail to understand their exposure risk as they define the

WUI in terms of metres not kilometres. Natural fire breaks using vegetation can be employed in planning to decrease the flammability of the WUI.

Transitioning forest tree species – Low combustible trees species (deciduous hardwoods) decrease risk and vulnerability by acting as a fire break; highly flammable coniferous forests increase risk. Hardwood forests (deciduous forests) and non-flammable vegetation (e.g. salal) should be considered as tools to create fire breaks and alter composition of WUI, and alter landscaping practices on private property.

Kamloops Fire Department maximum engagement - KFD has 110 full time fire staff, seven fire halls – a review was performed into how many structure fires the KFD could attend to at the same time if all resources were available for deployment – answer is **TWO**.

Social Health Implications - Research shows alcoholism, family violence and suicide drastically rise in communities impacted by fire (Slave Lake, Fort Mac); socioeconomic impacts from lost employment income impair ability to pay mortgages; smoke can lead to extended decrease in work attendance and performance long after fire. Catastrophic losses lead to the loss of key community professionals (e.g. Doctors) who move on to other areas leaving hole in the provision of health care.

### Take away points for Highlands

- 100% of structures in the DOH are at risk as all are situated within the 2km WUI.
- As a community, we need to be blunt about the risks, we need to continue public education.
- Risk assessment of the dying off Southern Coastal Doug Fir due to summer droughts (as iterated by Richard Hebda from RBCM) and highly visible through the District needs consideration.
- Neighbouring communities need to be aware of the risks of our dying forests; many of their residents are within 2 kms of our fuel source.
- Forest transition plans to repopulate with deciduous hardwoods for the changed (and further changing) climate need to be part of a risk assessment and adaptation plan.
- Mutual Aid Agreements need continued support – already the regions Fire Departments are well engaged, communicate effectively and thus highly functioning
- Engagement with Willis Point, Saanich, View Royal and Langford on the state of their Risk Assessment and Adaptation Plans to see if there are gaps in ours or theirs.
- Risk assessment plans need to account for the social implications such as mental health, economic implications due to decreased taxation revenues due to catastrophic property and the resulting impacts on continuation of services, and implications of loss of vegetation on our existing storm water flows which are predominately reliant on ecological integrity.

### Blue, Green, Gray Infrastructure

Presenters –

- Steve Winkleman, Founder, Green Resilience Strategies
- Luke Sales, Director of Planning, town of Qualicum Beach
- Doug Doyle (UBC Municipal Engineering) and Dean Gregory (UBC Architect Campus and Community Planning)
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This series covered topics of community engagement around the planning of Blue Green Gray Infrastructure (BGGI), lessons learned from UBC's attempt to address increasing impacts of storm water flows, and a review of options to be considered in the built environment.

Green Roofs – 50%-60% decrease in storm water runoff, 40% longer lifespan, 15%-45% energy savings

Trees as a natural asset– net value per tree per year in terms of services provided \$30-\$90 in cooling (shading) and decreased heating by blocking wind; greater values are attached for soil stabilization and water infiltration as they mitigate and replace the requirement for expensive infrastructure.

Qualicum Planning for the foreshore renewal - Qualicum realized their foreshore was failing and needed to address the erosion. They stumbled into a process that turned out to work very well. Initial information was

collected on ideas around the foreshore, that immediately became overwhelming. Due to this, the ideas were set aside and not reviewed, and instead collected all the values people held in the community, collected modelling of wave/tide/wind influences on shoreline, inclusive of historical changes to observe the past to the present. They then pulled out the “stockpile” of ideas (2 years later) and compared them to the values and used a “values based” approach to define the plan for the shoreline.

UBC storm water management – UBC presented on their failures around engineered storm water management. Lessons learned were that they overdesigned systems (large systems) to handle runoff, which were not resilient, and that incorporating multiple Low Impact Development systems (rain gardens, bio-swales), demonstrated more resilience, though much less fancy. Multiple small LIDs blend well with social functions.

#### Take away points

- Clearly define the problem
- Understand the values of the citizens and organizations affected
- Set clear goals and evaluate the criteria
- Develop a range of creative alternatives
- Evaluate Alternatives
- Make explicit and transparent choices
- keep design consistent with the level of operation.

Regionally we are exceptionally lucky to have a resource created by the City of Victoria that addresses BGGI on a property by property basis, the Victoria Rain Water Rewards Program. This program’s materials would heavily influence the design of an Aquifer Protection DPA.

## Creating Resilient Low Carbon Food Systems Using the Collective Impact Framework

Presenters –

- Paris Marshall Smith, Sustainability Coordinator, Regional District of Central Kootenay
- Deirdre Goudriaan, The Surrey/White Rock Food Action Coalition
- Jenn Meilleur, North Shore Table Matters Network

This discussion centered around food though it could be argued the take away was around the Collective Impact Framework and its applicability across many initiatives.

“Collective Impact is a framework to tackle deeply entrenched and [complex social problems](#). It is an innovative and structured approach to making collaboration work across government, business, philanthropy, non-profit organizations and citizens to achieve significant and lasting social change. The Collective Impact approach is premised on the belief that no single policy, government department, organization or program can tackle or solve the increasingly complex social problems we face as a society. The approach calls for multiple organizations or entities from different sectors to abandon their own agenda in favour of a common agenda, shared measurement and alignment of effort. Unlike collaboration or partnership, Collective Impact initiatives have centralized infrastructure – known as a backbone organization – with dedicated staff whose role is to help participating organizations shift from acting alone to acting in concert.”

#### Take away

- Some organizations in the CRD are part of the CI framework (e.g. CR Fair)
- The larger centers like Saanich and Victoria seem to appreciate this proactive approach
- Staff and policy makers should at least become aware of this framework as we are likely to see opportunities arise as new organizations emerge to tackle regional issues.
- Reinforces an emerging pattern of “don’t think in a silo”.

## Chief Resiliency Officer admin position

Presenters-

- Christine Arthurs, Deputy CRO, City of Calgary
- Stewart Dutfield, Deputy CRO, City of Toronto
- Katie McPherson, CRO, City of Vancouver
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This plenary introduced the experimental concept of the creation and implantation of a new public administration position of a Chief Resilience Officer. The 100 Resilient Cities (international) program recognized that with urbanization and climate change there is increasing shocks and stressors that impact the resilience of a community or region. Communities/regions need to develop and implement a resilience strategy in order to withstand shocks and stresses, and the administrative position to manage this is a Chief Resilience Officer (CRO). The CRO is a top-level administrator that works across all departments, engages community and reports directly to the Mayor.

Four Canadian cities are participating in this trial – Vancouver, Calgary, Montreal & Toronto. Most of the cities became involved in response to major disasters:

*Calgary* – not until impacted by the flood did they realize they were at risk of flooding; recovery plans were initiated at the same time first-responding was occurring (social supports)

*Toronto* – Resiliency planning was a response to floods and ice storms;

*Vancouver* – Resiliency positioned derived out of the Emergency Management field and added the application of a “resiliency lens”

The program connects participating cities to special resources for external research, connecting and communicating, monitoring and reporting. A key point was that Sustainability and resilience are not one in the same.

Takeaway:

- Act now rather than later.
- Actions and monies spent upfront save costs of responding to crisis at a ratio of 1:10.
- Acting early, before a crisis, not only is cheaper but also allows the local government (city) to apply a sustainability lens to the action.
- Acting in response to a crisis forces rash decisions to be made in a vacuum where the “sustainability lens” is not applied, and cost 10X more.
- Acting in response also creates results more prone to compound future risk.
- It is hard to convince people to spend \$1 million now, is much easier to convince them to spend \$10 million after
- Administrative staff struggle with the elected officials on the topic of resilience as policy is often driven by acute interests in the community and re-election.
- Passion and interest of the administration to convey to the policy makers the importance around resiliency initiatives is critical and controversial.

## Managing Flood Risk: Extreme Rainfall, Overland Flooding and Sea Level Rise Risk Across Canada

Presenters –

- Gordon McBean, **Addressing Climate Change Adaptation and Risk Reduction: Moving from Planning to Action** – Professor, University of Western Ontario
- Barbara Turley-McIntyre, **The Role of Insurance in Managing Flood Risk** – VP, Sustainability & Citizenship, The Co-Operators
- Dan Sandink, **Urban and Basement Flood Risk: Critical Issues and Adaptation Resources** – Director of Research, Institute for Catastrophic Loss Reduction

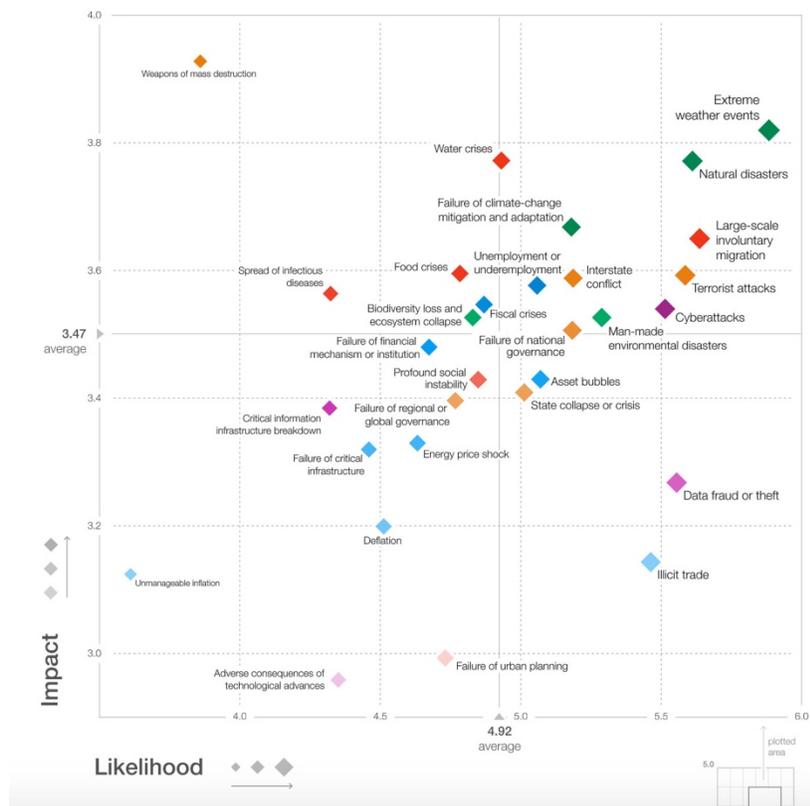
- Carrie Baron, **Multilevel Approach to Comprehensive Climate Change Adaptation** – Manager of Drainage and Environment, Engineering Dept., City of Surrey
- Angela Danyluk, **Preparing for Sea Level Rise in the City of Vancouver** – Sustainability Specialist, City of Vancouver

This was the most impactful and informative workshop I attended.

Discussions were broad ranging and very frank, covering risk, responsibility, liability, political leadership, involving exceptional commentary from the audience discussion that drew upon input from the Insurance Bureau of Canada, and Professional responsibilities (APs, QPs, RPs), and Legal Professionals.

Take away points:

- All risk encompasses measureable and unmeasurable relationships and decisions need to occur even without all the information
- Risk likelihood in order from highest impact to lower – Extreme Weather; Natural Disaster; Mass Migration; Food Crisis; social breakdown from these impacts – below 2017 Global Risk World Economic Forum



- A resource for governments is IRDR (Integrated Research on Disaster Risk) <http://www.irdrinternational.org>
- Need to ASSESS Risk, then need an ADAPTATION PLAN otherwise you will make wrong decisions when under extreme duress of a crisis and response.
- Policy makers MUST SAY NO to re-developing in areas of high risk – too often it is a scenario of FLOOD – RINSE – REPEAT. Too often there is not leadership in the elected body to say “No, you will not rebuild here again”.
- Two conditions the Insurance industry says that MUST OCCUR (1) citizens need to be informed of their risk (e.g. risk of flood and what happens in the aftermath) (2) “decision makers” understand risk and make informed decisions

- Flood maps need to be released to the public despite the impact it may have on property values and municipal taxation - failure to do so is quickly becoming seen as potential liability.
- Insurance Industry is finding new subdivisions are NOT being inspected properly and potentially placing the local government as liable – need proper diligence
- The “1 in 100” and “1 in 200” year events are beginning to happen 2 times per year in areas, thus you cannot ever design infrastructure to keep pace with climate change **“We cannot ever catch up”!!!**
- Make policy that states the risk even if you cannot manage the risk (e.g. We know risk X exists but we can’t afford to do Y and won’t do Z to manage for X).
  - More specifically (as an example) in terms of grey infrastructure, it is important to specifically state you cannot afford to maintain infrastructure to a level to handle for climate change, and recognize catastrophic floods will occur
  - *Liability* – a changing pattern is beginning to emerge. The IBC (Insurance Bureau of Canada) is studying emerging case law. If you (local government) know of a risk and are unwilling to communicate it then the LG is liable.
  - IF you know there is risk and do not have the resources to address the risk, stating such in policy removes the liability of the LG.
  - Communicating risk informs the public, it is a public duty.
- Design to fail safe – Recognize grey design limits and plan for their failure with systems that minimize risk to life and property.
- Speed of science – “You cannot catch up” - Don’t rely on the data from higher levels of government as the speed at which it is outdated and not relevant is increasing with the speed of new science.

## Water Water Everywhere... or nowhere: Resilience in the face of weather extremes

Presenters –

- Isabella Polenghi-Gross, **Climate Change and Municipal Water Security**; Senior Environmental Scientist, Amec Foster Wheeler Environment & Infrastructure
- Peter Nimmrichter, **Infrastructure Resilience for an Uncertain Future**; Climate Resilience Program Lead for Canada, Amec Foster Wheeler Environment & Infrastructure
- Jonas Roberts, **Next Generation Forecasting: Extreme Weather and Flooding**; Climate Change Consultant, Amec Foster Wheeler Environment & Infrastructure

A very technical review of modelling, prediction, impacts to water scarcity and poor groundwater management. Costs of LID infrastructure to manage water is cheaper than the more intensive and impactful grey designs to service impervious landscapes. LID also results in less expensive modeling cost as design for smaller grey infrastructure is simpler to model. To fail safe, design for overland flows to compensate for infrastructure that just can’t handle extreme events.

## Innovative Approaches to Implementation

Presenters –

- John Madden, Director of Sustainability and Engineering, UBC
- Mark Bostrom, Director of City Environmental Strategies, Director of Economic and Environmental Sustainability, City of Edmonton
- Karina Richters, Supervisor Environmental Sustainability and Climate Change, City of Windsor
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The most relevant conversations came from the two administrative staff presenters. Policy makers have not been the drivers towards addressing changes, staff has had to lead. This is tough as policy makers (elected officials) have their focus on the acute issues in the community and not a dedication to long term resiliency. This has made implementation hard.

### The take away

- It is imperative develop and support a functional knowledge and understanding of the significance of climate change and risks in administration,
- Administrators need to be innovative in supporting/informing policy-makers on the topic,
- Corporate Policy needs to support the continuance of corporate knowledge through time and changes.

## Partners for Climate Protection (PCP) Interactive Fishbowl on Integrated Climate Action

### Multiple Participants

This was an interactive debate that began around the topic of Human Change vs Climate Change. Ultimately discussions focused on economic incentives to promote human change, leadership in administration to ensure the short-term views of elected officials did not sideline the risk/adaptation portfolio, and that cultural constructs of individualism, distraction, lack of connection to place and community all impair actions around climate change.

### Takeaway

- We as a community and as a mix of citizens, administrators and elected officials need to engage on the topic of risk, climate change, fears, and adaptation.
- This has to be open engagement and become an overarching cultural norm.
- Engagement and collaboration from all groups is necessary.

## Summary of Takeaway points for our Community

- It is critically clear that Highlands is not addressing risks associated to climate change, is not considering adaption plans, is not informed of liability associated with ignoring these issues, and is not pro-actively engaging all parties on the topic.
- It was made clear that we must implement policies that limit risk even if those policies state we cannot act on issues that threaten life or property; these policies at least publicly inform citizens.
- Beyond the requirements of the Province, we should be keenly aware that the science is updating quicker and with more sizeable impacts than provincial policy can keep us informed of, thus it is imperative to design for risks beyond that of the Provincial requirements so as to not waste monies – this includes:
  - managing for extreme rain events,
  - changing forest ecology and promoting the replacement of high hazard and dying species with forest cover that promotes fire safety and ecological integrity,
  - designing infrastructure to fail safe (overland flows and LID),
  - demand higher standards from developments in relation to carbon and GHGe/flood mitigation/LID and energy and water use.
- Elected officials are often seen as barriers to implementation and administrative leadership becomes imperative to drive these files as best they can;
- Administrators are the primary information gatherers and need to be supported in the area of risk, adaptation and climate change.
- Structurally build climate change risk assessment, resiliency, mitigation & adaptation into the culture of reporting.
  - Example – Create/modify an updated staff report template to include the topic heading “Climate: Resiliency, Risks, Mitigation & Adaptation”. All staff reports coming to council, even if staff doesn’t populate information under this heading, allows a discussion opportunity to occur, and begins to create a cultural norm among staff, council and the public.

- More consistent application of our decision making tool needs to occur - decisions must be evaluated through this “Sustainable Highlands” lens, and consistent across all facets of the organization.
- We presently have a sustainability framework in place but we lack a resiliency lens.
- We need to do a RISK assessment and ADAPTATION plan, and adjust corporate practices and decision making tools to accommodate such.
- Do not delay, act now, everyone must lead.