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**Mike Harcourt** [Become a fan](#)  
Former Premier of British Columbia



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# Adapting To Climate Change Means Investing In The Right Infrastructure

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In the post-Paris world of climate action, there is a new imperative to focus on adaptation to climate change impacts in partnership with reducing greenhouse gas (GHG) emissions. It is clear now that we must plan for the changing climate we already have -- and for the challenges ahead.

According to [NASA](#), 2015 was the hottest year globally on record. As a northern country, Canada is now, and will continue to be, disproportionately impacted by the effects of climate change as warming progresses fastest closer to the poles.

We face country-wide challenges, some of which are region-specific, such as sea-level rise or thawing permafrost, and others that will affect all Canadians, such as the increasingly extreme weather events which are already elevating risk for our large network of roads, transmissions lines, municipal water systems, bridges, buildings and businesses, [costing cities, insurers and taxpayers billions](#).

Local governments in particular are on the front lines. The 2013 Calgary flood was the most expensive insurance event in Canada ever, costing more than [\\$1.7 billion in insured costs](#) -- not to mention the uninsured costs, loss of productivity from shutting downtown Calgary and all its businesses, and the personal time and effort spent by so many Calgarians in dealing with the floods and their aftermath.

We know that climate change will continue to have major impacts on Canadian infrastructure, which is already aging and in need of re-investment. The Federation of Canadian Municipalities estimates the current municipal infrastructure deficit to be around [\\$200 billion](#).

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**Ingenuity in how we fund and incentivize resilient, green infrastructure development is essential, starting now.**

Moreover, we will soon see a wave of new, renewable energy infrastructure being put into place across the country, and it is essential that these innovative developments be implemented with resilience to climate change impacts in mind.

One example is *Community Energy Planning: Getting to Implementation in Canada*, a collaborative initiative involving over 180 communities representing more than 50 percent of Canada's population, working to create smart energy, resilient communities in every Canadian city.

It's important to realize that, while climate change impacts can be costly, they can also drive opportunities. Fortunately, all levels of government are already recognizing the benefits of investing in infrastructure, and that doing so can help improve health and productivity, boost economic activity, and support the transition to a lower-carbon economy.

Proactive recognition of the risks we face offers Canadians the opportunity to direct policies and investment in ways that support a more resilient future. In order to do this effectively, we can draw upon a variety of tools located at different levels of government and authority.

For instance, the City of Whitehorse uses a mechanism called Local Improvement Charges (LICs) to raise funds for neighbourhood infrastructure improvements such as sewer services that may be overwhelmed with climate change-driven increases in major rain events.

Only those property owners who benefit pay and only if more than 50 per cent of them vote for the project to go ahead. Costs for work on public property are borne by the city, while property owners pay any costs inside their building.

This approach shares costs across all those who reap the benefits -- the city, the property owners and the broader taxpaying community -- pursuing innovation in local governance, while also achieving more modern, more resilient infrastructure.

In some cases, however, what Canada needs is not new pipes or physical infrastructure, but creative ways to protect the infrastructure we already have. Take the example of Corktown Common, a multi-use park in Toronto that eliminates flood risk for 210 hectares of real estate, including a portion of the financial district, and creates accessible green space within a 7.3-hectare park.

Situated on former industrial lands, the park has transformed an underutilized brownfield into a spectacular park and meeting place featuring a lush landscape of marsh, lawns, urban prairies, playground areas and park amenities. This has the added benefit of protecting ecosystem health -- an essential aspect of resilience in a changing climate.

In order to make the Corktown Common a reality, federal and provincial funding was needed. The good news is that the new federal government is allocating significant resources to resilient infrastructure planning and implementation. But cities should not solely rely on other levels of government.

There are innovative financial tools and other mechanisms at their disposal such as LICs, Green Bonds, creative stormwater levies, and structuring development plans and bylaws differently.

We should also consider restructuring taxation authority and distribution in favour of municipal governments and the disproportionate burden of costs they share, as their sole income from property tax both disincentivizes strategic floodplain development and will no longer be adequate in the face of ever-expanding disaster recovery costs.

Recent reports on carbon pricing and congestion charging, such as *Provincial Carbon Pricing and Competitiveness Pressures* and *We Can't Get There From Here* offer examples of how we could use such revenues to lower other taxes, invest in transit, and buffer low-income citizens and adversely affected businesses/industries.

Ingenuity in how we fund and incentivize resilient, green infrastructure development is essential, starting now. Part of adapting to climate change means adjusting the way governments make decisions, and create policies. [Sustainable Prosperity's](#) new [Tooling Up](#) initiative shows that many of these economic tools could be put to better use in Canada.

Ultimately, all levels of government have tools they can use to adapt to climate change and its effect on infrastructure, real estate, forestry, ecosystems and other vital components of our country's well-being.

The key to building resilience through adaptation to climate change is collaboration vertically between all levels of government and horizontally among residents, businesses and their municipal authorities. It's time for Canadians to think outside the usual government boxes, and get creative.

Luckily, we're good at that.

### **Mike Harcourt and Deborah Harford**

*Mike Harcourt is the former Mayor of Vancouver and Premier of British Columbia. Presently, he is Chair of QUEST (Quality Urban Energy Systems of Tomorrow) and a member of Canada's Ecofiscal Commission's Advisory Committee.*

*Deborah Harford is Executive Director of ACT (the Adaptation to Climate Change Team) at Simon Fraser University. Deborah directed development of ACT's June 2015 report: *Paying for Urban Infrastructure Adaptation in Canada*, produced with the support of Natural Resources Canada through Canada's Adaptation Platform, the Cowichan Valley Regional District, the Pacific Institute for Climate Solutions and the Real Estate Foundation of BC. The ACT report has informed "*Tooling Up for Climate Change: Economic Instruments for Adaptation*", a new project led by Sustainable Prosperity to share knowledge and policy findings to decision-makers across Canada on economic instruments for adaptation.*

*Image Source: Eric Sehr, Flickr*

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**Paul Merrifield** · Comedian at Actor/Comedian

CO2=Y2K<sup>2</sup>

Were your science gods also only 99% certain the planet isn't flat? The last 35 years of climate action failure, tipping point dealines and global debate proves why science couldn't agree it was; "as real as smoking causing cancer".

35 more years is certain and unstoppable, no matter how much you eager "believers" exaggerate and abuse vague climate science.

Like · Reply · 1 · Feb 16, 2016 4:18pm · Edited

D

**Derek Speed** · Graphic Designer at Massmediafx

Human population growth in the last 24 hours, 200 000, that means, you the human race birth and build a city, the size of Rochester New York, EVERYDAY. How big is the city you live in? How long have you lived there?

Human population growth in the year 2015, 82 million, that means, you the human race birth and build a country, the size of Germany, EVERY YEAR. Here's some vague climate science for you OK, Paul. Oldest known cave paintings made by man, scientifically radio and carbon dated, to approximately 40 000 years ago. The same science concludes, that there were less than half billion p... See More

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**Francis T. Manns** · University of Toronto

Derek Speed If you had to you could pack all of the current population into Spain and have room left over. The Planet is not crowded. More people above the poverty line and starvation line every year. Earth's issue is the HUBRIS of the current interventionist and populist leaders and intellectuals who seem to tell us what is best for us without really knowing anything about real facts.

Like · Reply · 2 · Feb 17, 2016 6:57am



**Paul Merrifield** · Comedian at Actor/Comedian

Derek Speed

This is the best time in human history to be alive as we are living longer now than at any time as a species and Smog Warning Days have been rare for decades in most of N. America and now fracking's bounty is ending the oil wars with possible world peace and affordable energy for countless generations to come. Let's evolve and spread love not cave man like fear.

Like · Reply · 1 · Feb 17, 2016 7:08am · Edited

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D

**Derek Speed** · Graphic Designer at Massmediafx

Mike Harcourt ,Deborah Harford . I'm going to make this a simple as I can, for the complete meatballs of earth. Economic Growth, is the leading cause of Global Warming, and Climate Change. Infrastructure,development? The oil industry has collapsed, and CP rail, will be laying off hundreds and even thousands of people, why, because their is NO USE for the infrastructure, that's why.

You build roads, so people can get from point A, to point B. If I'm at point A, and their are no jobs at point B, I won't be using that infrastructure, will I.

Like · Reply · Feb 17, 2016 6:33am



**Francis T. Manns** · University of Toronto

And your solution is back to the cave. Prosperity has always led to

smaller families and solid sustainable growth. The environmental lobby groups are friction preventing sustainable growth and hurt the poor first. .

Like · Reply · Feb 17, 2016 7:00am



**Paul Merrifield** · Comedian at Actor/Comedian

This is the best time in human history to be alive as we are living longer now than at any time as a species and Smog Warning Days have been rare for decades in most of N. America and now fracking's bounty is ending the oil wars with possible world peace and affordable energy for countless generations to come. Let's evolve and spread love not cave man like fear.

Like · Reply · Feb 17, 2016 7:11am



**Greg Hooper** · Calgary, Alberta

Francis T. Manns, nobody's suggesting we go back to any caves. It's pretty simple really: keep denying the problem exists until the consequences hit us where it hurts, or use our brains to invest in a workable future. Choosing economic growth at any cost, when we can predict the outcome of that policy, is not the sustainable option.

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**Robert Dean Arthur Cameron**

So Derek, we are being born, any stats on us dying? or are we simply increasing in population?

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**Jubal Wright**

the population was 3billion in 1960 and is now over 7 billion, a 3 second google search could have told you that

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**Contrarian Guy** · Investor at Activist investor

**CLIMATE CHANGE GOAL IS DOOMED TO FAIL & EARTH IS DONE**

NASA, President Obama, David Suzuki, Al Gore, Environmentalist & Climate Change proponents are fighting a losing battle.

Big Oil, Koch Brothers, David Tepper, paid off analysts, paid off lawyers & aggressive Short Sellers are working overtime to kill companies like SunEdison the largest global renewable energy company in the world.

Ironically, SUNE tanked with the price of oil tanking when demand for oil is going down but demand for electricity is going up.

Their stock tanked from \$33.45 to \$1.50 within 6 months due to oil price tanking... [See More](#)

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