



# A Green and Prosperous Pontiac

## Discussion Paper on Transitioning Pontiac Towards the Post-Carbon Future

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# A Green and Prosperous Pontiac

## I. Introduction

The extreme flooding in B.C. this November comes only months after wildfires in the province levelled the village of Lytton. The Lytton inferno laid bare how nature can turn our communities to ash. Across Canada citizens accept that climate change poses a threat, but few communities are prepared for the transition to a low carbon future. This paper advocates for the development of a strategic “framework” for the federal riding of Pontiac. If Canada is to reach its goal of net zero in 2050, Canada's climate strategy must include a strategy for local communities to navigate a pathway towards sustainable prosperity. Although not a jurisdiction, for diverse rural ridings, the Federal MP plays a unique mediating role that enables them to rally local entrepreneurs, officials, and citizens around the 2050 net-zero goal. A green plan for a household, farm, medium-sized enterprise, municipal government, or MRC will not be the same, but they do intersect, and could benefit from being synchronized to a shared vision and regional road map.

Some might question writing a paper focused upon a Federal riding. A riding is not a jurisdiction; it has no formal powers, funds to disburse, or responsibilities. Neither are riding boundaries stable; they are periodically redrawn. The fundamental duty of a Member of Parliament, however, is to serve their constituents. The process for creating this strategic framework must not override established jurisdictions. On the contrary, Pontiac’s great strength is the high caliber of its elected officials, the ingenuity of regional entrepreneurs and the engagement of its citizens. But in a riding spanning more than forty jurisdictions, deputies can empower their constituents by: mobilizing local actors to meet the net-zero challenge; helping overlapping jurisdictions to coordinate their policies for mutual advantage; drawing upon federal, provincial, and regional expertise and resources to increase the capacity of remote communities to develop more integrated strategic plans; and advocating for reforms to Federal programs that cut unnecessary red tape and secures public investment process to support keystone projects.

2030 represents a pivot point where a disruptive basket of technologies will coalesce into the green economy of the future. Key to getting Pontiac on a pathway towards sustainable prosperity is to empower local communities to craft integrated development plans that are better aligned with the conditions of the future. This also represent a golden opportunity for MRCs and local communities to revamp their 25-year master plans. Local engagement represents the key to devising innovative solutions that will enable Canada to meet its net-zero goal, and for building the political consensus to see us through the decades ahead. At the local level, environmentalists and entrepreneurs are neighbors and many local organizations cross party lines. A federal deputy serving all constituents can mobilize, empower, and coordinate regional planning efforts to smooth a pathway for sustainable prosperity.

After exposing the state of play, this paper proposes a three-pronged approach to lead our communities towards prosperity. First, a region-wide consultation process can unite key regional actors to discuss the risks and opportunities relative to the net-zero goal. Second, strategic working groups could translate local discussions into innovative projects and best practices that could be shared across the riding. Third, a “Green paper” could encapsulate our discussions and discoveries, and could serve as a practical guide to

our local leaders in drafting integrated plans to put their communities on the pathway to net-zero and seize opportunities for growth, while ensuring the welfare for all.

Although the challenges we face are great, our communities are strong, resilient and creative. Together, we can build a better future!

## 1. Defining the Challenge

### A. At a Tipping Point

A half degree Celsius is imperceptible in a bathtub. For complex systems like climate, small increments could prove catastrophic by pushing species into extinction or degrading fragile ecosystems into a less productive new normal.<sup>1</sup> Over the last decade, city managers have coped with the corrosive impact of climate change upon local parks, buildings and public infrastructure. Given an accelerating rise in atmospheric carbon, things will get worse.<sup>2</sup> Devastating wildfires will become more common, deadly heatwaves will intensify, invasive species like the gypsy moth, blue algae and grub will wreak havoc upon local environments. Recurring “storms of the century” will increase the costs of property damage and generate more catastrophic failures of infrastructure.<sup>3</sup>

Some businesses and many communities have started to include climate change and reducing carbon emissions into their formal plans, but this has mostly been incorporated as a cosmetic lens. Towns, businesses and households have not adequately priced in the inflationary shock of decarbonization.

The global economy evolves according to longer, roughly sixty-year Kondratieff cycles during which the production complex, resource inputs and technologies underpinning the economy shift. At the tail end of a cycle, productivity lags because input costs rise as the resources fueling the production complex run short, and global trade and investments become misaligned with the more productive sectors. Secular forces are already eroding the carbon sectors of the economy, and paving the road towards a greener and cleaner future. Most economists estimate that we have already reached the tipping point where the global

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<sup>1</sup> The principal threat of climate change is not rising temperatures but loss of biodiversity. Like a safety-net at Cirque du Soleil, when you cut too many links in the web, the system’s integrity fails. We stand at the tipping point where environmental problems manifest into economic shocks. For example, once the glaciers feeding the rivers of Northern India melts away, 200 million subsistence farmers will become refugees. Once Lake Powell runs dry, the Central Valley will no longer be able to provision our winter tables. We cannot overhaul our agricultural system overnight, so we need to take proactive measures in the window we have left. See Lester Brown, *World on the Edge: How to Prevent Environmental and Economic Collapse*. 1st ed. New York: W.W. Norton & Co., 2011.

<sup>2</sup> Two decades ago, climate scientists warned world leaders that 400 PPM represented a redline. International inaction resulted in the world blowing by this threshold in 2016. Currently we stand at 419, and this number will continue to rise even if we could transition to net-zero tomorrow. The most recent IPCC report sounded the alarm, noting an acceleration in the pace of global warming, which means that extreme weather events are likely to intensify and increase in frequency. See IPCC, “Climate change widespread, rapid, and intensifying,” Update, August 9, 2021. (Accessed November 10, 2021). <https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/>

<sup>3</sup> The goldilocks Earth that we grew up in is dead and gone. See Bill McKibben, *Eaarth: Making a Life on a Tough New Planet*. 1st ed. New York: Time Books, 2010.

costs of mediating natural disasters will start to exceed the massive sum necessary to decarbonize the economy.<sup>4</sup> If we fail to plan for the rising costs of climate mitigation, the infrastructural damage, crop losses, disruptions in the supply chain and a rising cost for doing business will exponentially grow in the decade ahead. One analysis regarding infrastructural maintenance revealed a 10:1 payoff in terms of insulating local infrastructure to prevent the high costs associated with catastrophic failure.<sup>5</sup> Increasing local resilience, adopting smart design principles and investing in clean technology are not policies motivated by environmental virtue, but cost-effective necessities to insulate our communities from future shock events.<sup>6</sup>

The table in annex profiles how climate change will ravage local lakes, structures and woodlands, as well as various mitigation strategies.

### *B. The Challenges that Canadians Face*

Canada's contemporary prosperity is inextricably linked to fossil fuels. Only in 1887 did the joules extracted from carbon surpass those from biomass sources like wood and soil. After World War II, petroleum supplanted coal, and cheap oil supercharged a golden postwar recovery that made it possible to integrate working families into the ranks of the middle class and to offer both a safety net and universal access to health care, housing and public education. The petro-industrial complex is deeply embedded, not only in our economy, but also in how our cities are built, the machinery of modern government and how we think about our world. Canadians, of course, are aware that rapid population growth, *laissez-faire* development policies and reliance on fossil fuels has damaged the Earth's living systems.<sup>7</sup>

*Accepting climate change, however, does not mean that Pontiac's leaders have internalized the full ramifications of what "decarbonizing" the economy entails. Neither are most of entrepreneurs or households prepared for the inflationary shock that is about to hit our wallets. For those whose livelihood is closely tied to the petroleum complex, moreover, the transition to the green economy will prove painful.*

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<sup>4</sup> B. M. Sanderson and B. C. O'Neill, "Assessing the costs of historical inaction on climate change," *Sci Rep* **10**, 9173 (2020). <https://doi.org/10.1038/s41598-020-66275-4> and Simon Dietz, James Rising, Thomas Stoerk, and Gernot Wagner. "Economic Impacts of Tipping Points in the Climate System." Proceedings of the National Academy of Sciences - PNAS 118, no. 34 (2021): 1–. <https://doi.org/10.1073/pnas.2103081118>.

<sup>5</sup> ISSD, "Advancing the Climate Resilience of Canadian Infrastructure: A review of literature to inform the way forward," July 2021, (Accessed October 10, 2021). <https://www.iisd.org/system/files/2021-07/climate-resilience-canadian-infrastructure-en.pdf>

<sup>6</sup> The 'smart' design concept has overlapping dimensions from reducing the carbon footprint, to ecological resiliency, to incorporating technology for more effective monitoring to making our cities more vibrant and livable. See Angelakis Vangelis and Elias Tragos, Henrich C. Pöhls, Adam Kapovits, and Alessandro. Bassi. *Designing, Developing, and Facilitating Smart Cities Urban Design to IoT Solutions*. 1st ed. 2017. Cham: Springer International Publishing, 2017. <https://doi.org/10.1007/978-3-319-44924-1>.

<sup>7</sup> David Pimentel estimates that the contemporary economy already stands at 150% carrying capacity, meaning that we are exhausting renewable resources like fossil water, arable land, fishing stocks and old growth forests to meet the demands of current consumption. Overdrawing renewable resources leads to ecosystem collapse to a new less productive normal. See Pimentel, *World Soil Erosion and Conservation*. Cambridge: Cambridge University Press, 1993.

Fortunately, we stand at the brink of a major technological revolution that could dramatically accelerate productivity and even raise Canadian living standards in the decade to come. It is estimated that at least 80% of the technologies that we need to meet our net-zero target by 2050 already exist. The “green” challenge is, therefore, primarily a strategic one. Can we craft policies that enable us to not only decarbonize Canada’s economy, but also provides the support and runway necessary for small businesses and municipal governments in Pontiac to adjust?

While Canada’s 2050 net-zero goal will require a complete overhaul of our economy, history also reveals plenty of examples of societies that turned adversity into opportunity. Postwar Germany and South Korea inherited far worse situations and orchestrated economic miracles that unlocked decades of high growth.

In communities across Quebec, various green pilot projects are being deployed and many innovative solutions already exist. For local leaders strategic planning is familiar terrain, even if the scope of the current challenge is unique.

*City leaders, as masters of local dossiers, and intimately familiar with their communities, are **best placed to innovate** and **tap** overlapping provincial and federal **financing programs** to realize **milestone local projects** that could accelerate the process of decarbonizing the economy.*

Many citizens groups too, have developed innovative programs for protecting biodiversity, promoting communal well-being or addressing alimentary insecurities. What is often missing is plan that can coherently address the ecological, social and economic vectors that will disrupt our communities and necessitate a corresponding revolution in the structure of our governments. We are entering a decade of extraordinary change as three vectors will intensify in magnitude, and increasingly converge by 2030 into the green economy of the future:

1. Disruptive technologies (that is, innovative technologies that end up replacing dominant technologies) will coalesce into a new economic model that will supplant the petro-industrial complex and fundamentally change how things are produced, how citizens move, current patterns of trade and finance, contemporary patterns of work, even the fabric of our cities;
2. Rapidly rising costs for mitigating the adverse impacts of climate change will force consumers, businesses and governments to become more resilient and change how they consume, and how they operate and manage risk;
3. The 2050 net-zero goal will force politicians, entrepreneurs and citizens to reimagine their communities and collaborate to find innovative solutions that mediate between ecological, social and economic needs.

### *C. How will Pontiac be Impacted?*

For most rural areas, transitioning our economy away from carbon, making infrastructure more resilient and leveraging breakthrough technologies will require a coherent vision, a multidimensional strategy, and strong leadership.

*Building out the infrastructure for the green economy of the future will also require up-front investments inside a Federal system of government where **municipalities are already underfinanced**, are struggling to meet existing mandates and confronting traditional challenges like a lack of affordable housing and an aging population.*

Although local entrepreneurs have proven resilient in responding to a global epidemic, they also confront many barriers relative to accessing the skilled labor, critical technology and capital markets that will be necessary to align their businesses to the post-carbon future. Citizens of Pontiac, however, can take solace in the fact that we have been here before. Over the last two centuries we have lived through three structural revolutions, and we will meet the net-zero challenge as our ancestors survived the decline of the certain industries and adapt to emerging ones.

## 2. How Will Our Economy be Transformed?

2030 looms as critical pivot point where the world economy will flip from reliance on carbon to a more sustainable model. The winners in the economy of the future will be those that have prepared for this transition. Those left behind will confront a dim future of rising costs and insurmountable debt. Although local leaders do not have a crystal ball, we can engage in forecasting because many current trends have considerable momentum. Examining innovation in various technological clusters, incorporating data from climate models and consulting the timelines for international commitments and public financing for green infrastructure, enables us to discern the pillars of a greener economy predicated upon digital technologies, electrification, smart design and more localized production chains.

- **Electrification of Transport:** By 2030, electric vehicle sales in Canada will capture between 25-50% of the market. Subsequently, the internal combustion engine will be rapidly phased out as the electric vehicle revolution overhauls long-haul freight, public transportation and personal mobility, lowering costs, reducing congestion and improving rural access to services.<sup>8</sup>
- **Rollout of the Smart Grid:** By 2050 electricity consumption will double, so by 2030 pilot projects for the smart grid will have matured into significant programs for public investment that leverage advances in renewable energy, energetic efficiency, batteries, analytics and smart meters.<sup>9</sup>

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<sup>8</sup> The CEO of Mobileye predicted that robo-taxis will start disrupting urban transport by 2023 and autonomous driving would be scaled into private vehicles by 2030. Sensing technology and machine learning is advancing rapidly, even if the rollout of autonomous vehicles will obviously be shaped by regulation. See Frederico Cugurullo and A. Ransford, Maxime Gueriau, and Ivana Dusparic. “The Transition to Autonomous Cars, the Redesign of Cities and the Future of Urban Sustainability.” *Urban Geography* 42, no. 6 (July 3, 2021): 833–59 and McKinsey, “Urban commercial transport and the future of mobility,” McKinsey Report, September 13, 2017, (Accessed November 10, 2021) <https://www.mckinsey.com/~media/mckinsey/business%20functions/sustainability/our%20insights/urban%20commercial%20transport%20and%20the%20future%20of%20mobility/an-integrated-perspective-on-the-future-of-mobility.pdf>

<sup>9</sup> Given the decarbonization of freight and industrial sectors of the economy, electric consumption will double by 2050, necessitating major public investment in electric grids, their modernization and their redesign to a distributed



- **Rural Gentrification:** By 2030, the digital divide between the rural and urban communities will evaporate as fiber optic lines, cellular towers and satellites bring a denser network of high speed communications to remote communities, while a culture of teleworking, will accelerate the gentrification trend from rim communities like Chelsea and Luskville, towards Fort-Coulonge and Maniwaki, raising municipal tax revenue, but also requiring strategic investment and disrupting local property markets.
- **Rising Costs of Climate Mitigation:** By 2030, extreme weather events will necessitate higher public investment to repair infrastructure, more sophisticated post-disaster response mechanisms and investments to make local infrastructure more resilient.
- **Food Insecurity:** By 2050, global fresh water shortages, changing rainfall patterns, extreme weather events and soil exhaustion will cause a rise in the price of agricultural land and commodity prices.
- **Shrinking Supply Chains:** By 2030, geopolitical turbulence, unstable global supply chains, new production methods and the sharing economic model will combine to revolutionize the transportation, construction and manufacturing sectors of Canada's economy, while rendering many professions connected to the carbon production complex obsolete, forcing workers to renew their skillset.<sup>10</sup>
- **Carbon price:** By 2030, the rising price of carbon will force established industries like agriculture, forestry, construction, and light industry to adjust their business models in order to prosper, but small business owners, clean tech innovators and those connected tourism will see their prospects brighten.

### 3. Key Risks, Uncertainties and Questions

A key element in *strategic planning* is aligning current policies with the secular trends that will reshape society, the economy and our environment. But history shows that many policy initiatives die upon the shoals of local shores for failing to secure local buy-in. Successful *implementation* recognizes that local leaders are best placed to identify key risks and opportunities, and respond to emerging threats and opportunities. In imagining the future and crafting strategic plans, local leaders will need to negotiate eight key challenges and risks:

1. **Decarbonizing Local Businesses:** Adopting cleaner technologies and less-intensive methods will be expensive and require local entrepreneurs to innovate, tap investment capital, and draw upon a workforce with a 21st century skillset to revamp their business. Will local

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power model. See US Department of Energy, "Vision for a Smart Grid," DOE White Paper, June 2009. (Accessed November 10, 2021) [https://netl.doe.gov/sites/default/files/Smartgrid/Whitepaper\\_The-Modern-Grid-Vision\\_APPROVED\\_2009\\_06\\_18.pdf](https://netl.doe.gov/sites/default/files/Smartgrid/Whitepaper_The-Modern-Grid-Vision_APPROVED_2009_06_18.pdf)

<sup>10</sup> Travis Buholz and Alissa Burger, Sue Gander, Brad Nelson, Ben Prochazka, Natalia Swalni, "Electrifying Freight: Pathways to Accelerating the Transition," <https://www.electrificationcoalition.org/wp-content/uploads/2020/11/Electrifying-Freight-Pathways-to-Accelerating-the-Transition.pdf>

- entrepreneurs, workers and future generations benefit from technological trends or will foreign investors, big tech corporations and foreign engineers reap all the rewards?
2. **Affordable Housing:** Without affordable housing in the near term, entrepreneurs in rural communities will not be able to attract workers, expand their businesses or retool their enterprises.
  3. **Reconciliation with Indigenous Communities:** Indigenous communities confront overlapping barriers that impede their acclimation to the post-carbon economy. How can they participate in regional planning and benefit from unique financing streams? How can reconciliation and decarbonization be linked?
  4. **Supply Chain Disruption:** Rising costs tied to the disruption of the Covid epidemic, as well as structural problems in industrial food and Post-Fordist production chain, risks disrupting local strategic plans. Not getting affordable access to green technology represents an acute risk particularly for poor households and small enterprises lacking capital reserves, access to credit or financing.
  5. **Food Security:** Much of the food on our tables comes from farms thousands of miles away. Higher prices are an early warning that this industrial food production system predicated upon limited arable land and fresh water is reaching an immediate limit, that it is vulnerable to climate shocks, and that our food supply is insecure. In the case of inevitable alimentary shock events, prices will climb and our poorest citizens will be the hard pressed.
  6. **Insufficient Capacity:** Various Federal and Provincial regulatory mandates are likely to increase the burden upon small communities and without improving financial resources or capacity they may struggle to implement innovative policies.
  7. **Access to Financing:** Local homeowners, entrepreneurs and municipal governments may struggle to access financing for the green transition because these programs are not transparent enough, or the process of applying for these funds is too onerous.
  8. **Populist Backlash:** Without adequate consultation, or sufficiently rigorous programs for retraining, environmental policies could suffer a populist backlash.

#### 4. “We're Not in Kansas Anymore!”<sup>11</sup>

Technological and climate change will transform our social and economic landscapes; it will be necessary to show resilience and solidarity, and to change our strategies in order to quickly adapt to this new reality. Some could question the consequences of environmental policies on the economy.<sup>12</sup> In truth, carbon

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<sup>11</sup> Dorothy's new environment after a tornado brought her to the Oz's world was completely different from her native Kansas. This classic American literature and cinematography speaks of resilience (this deep capacity to adapt to difficult situations and grow) and human solidarity.

<sup>12</sup> This politics works because of an engrained perception about a tradeoff between environmental protection and economic growth; a duality promoted by the neoliberal rules written into the economic system. See F. Dodds Michael Strauss, and Maurice F. Strong. *Only One Earth: the Long Road via Rio to Sustainable Development*. Abingdon, Oxon: Routledge, 2012.



pricing is only a mechanism to accelerate a secular trend towards decarbonization that is already well underway. Regardless of what policies Canada will adopt over the next decade, the new technologies at the heart of what some may call the Fourth Industrial Revolution will converge in the “green economy”.<sup>13</sup> Rooted in their local community, certain local leaders may view the future solely in terms the local community and the most pressing issue, but may be ignoring that we stand at the cusp of a structural revolution that will shift how we live, work and move. Successful local leaders need to anticipate how disruptive technologies and emerging trends will combine to provide their communities with strategic opportunities to reduce costs, accelerate certain forms of development and provide more efficient ways to deliver critical services.

Already new technologies and new methods and materials are disrupting the construction, transportation, agriculture and energy sectors of the economy. Over the next decade innovation in multiple sectors will start to converge into the infrastructure of the “green economy”. This is because when disruptive technologies are rolled out at scale, costs rapidly plummet, they accelerate economic productivity and revolutionize the structure of how we make things, live and work. For Pontiac to be in a position to benefit from such secular trends, however, we need to reimagine current challenges more squarely in the context of the vectors that will reshape the cities of the future. With limited capital, success will be measured relative to investments that align with future trends rather than sticking to business as normal and risk sinking precious funds into projects that have no future. Given that our current economy, machinery of government and process of planning is in subtle ways implicated with the petro-industrial complex, imaginative and bold steps are necessary to reorient our communities towards future trends. If we do not act decisively and soon, the degree of misalignment between our current policies and the landscape of the future will accelerate, as will the costs for transition.

A key element in long-range planning is distinguishing between what we know for certain, from trends that we cannot quantify, and outlier events which we cannot anticipate.

*Successful implementation requires strategic plans with clear objectives, concrete metrics, and the agility to respond to emerging threats and opportunities.*

## **II. An implementation strategy for Pontiac**

Necessity is the mother of invention. The Lytton fire appears to have opened a window where municipal leaders, farmers and entrepreneurs have accepted that we can no longer afford business as usual. While Canada is an old and stable democracy, navigating towards a net-zero economy will be complicated by regional disparities and the national economy’s reliance on carbon. While the green economy of the future could ultimately deliver a higher standard of living, over the immediate term, the demise of the petro-

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<sup>13</sup> Economic historians have disputed whether we are at the cusp of the Fourth Industrial Revolution or entering the next stage of the Third. Regardless, the next decade represents a period of ‘revolution’ in the sense that clean technologies will not only supplant those of the petro-industrial complex, but will engender a social transformation in terms of how we live, work and relate to nature. For a more in depth discussion, see Klaus Schwab, *The Fourth Industrial Revolution*. First U.S. edition. New York: Crown Business, 2016 and Jeremy Rifkin, *The Third Industrial Revolution : How Lateral Power Is Transforming Energy, the Economy, and the World*. 1st Palgrave Macmillan pbk. ed. New York: Palgrave Macmillan, 2013.

industrial complex will disproportionately hit rural communities, poor households and workers and businesses in the oil sector.

## **1. A regional coalition around Canada's climate plan**

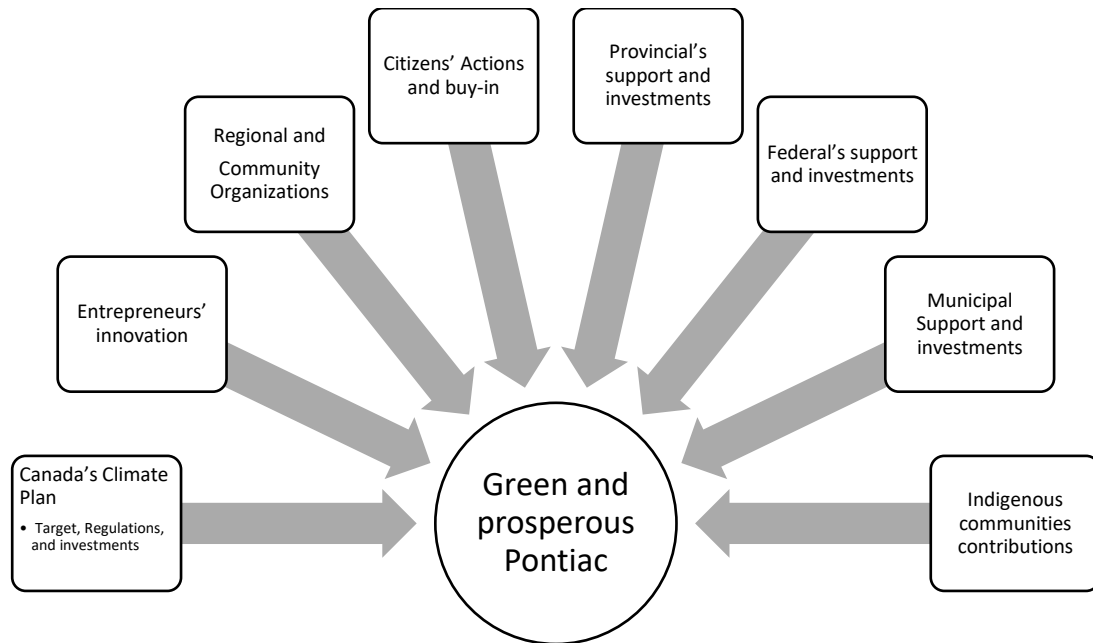
For Canada to navigate towards a net-zero economy, politicians need to build coalitions around a coherent program for restructuring, clearly spelling out the rationale for substantial upfront investments, and calling for the sacrifices necessary to reap future productivity gains many years down the line. The same logic applies at the riding level. Navigating a pathway to net-zero will depend upon rallying City Councils, the Chambers of Commerce, farmers and indigenous communities around the collective goal of prosperity. To win support for “green” reforms in isolated communities, it is important to frame policy concepts into everyday language and contour it better to the realities on Main Street, highlighting the irreversible and secular nature of technological change and strategic opportunities for investment. Another important dimension of branding reform is to incorporate strategic planning into the moral vision of the Canadian ideal. To preserve the Canadian welfare programs and ensure a better future for our children we need to meet the 2050 challenge.

## **2. Why at the level of a federal riding?**

Some might question writing a paper focused upon a Federal riding. A riding is not a jurisdiction; it has no formal powers, funds to disburse, or responsibilities. Neither are riding boundaries stable; they are periodically redrawn. The fundamental duty of a Member of Parliament, however, is to serve their constituents. Certainly, no MP can encroach upon the authority and responsibilities of local officials or municipal governments. On the contrary, Pontiac's great strength is the high caliber of its elected officials, the ingenuity of regional entrepreneurs and the engagement of its citizens. But in a riding spanning more than forty jurisdictions, deputies can empower their constituents by:

- mobilizing local actors to meet the net-zero challenge;
- helping overlapping jurisdictions to coordinate their policies for mutual advantage;
- drawing upon federal, provincial, and regional expertise and resources to increase the capacity of remote communities to develop more integrated strategic plans;
- advocating for reforms to Federal programs that cut unnecessary red tape and secures public investment process to help constituents realize keystone projects.

## An integrated approach to implement Canada's climate plan and post-covid economy recovery



### 3. The Challenge of Regional Implementation

Implementation represents the next critical step in Canada's transition to the post-Carbon future. Reorienting local economies to meet the 2050 net-zero goal will not be easy. To navigate the shocks of climate, post-pandemic recovery, technological disruption and the rising price of carbon, our communities need to take decisive, early action to put local institutions on a pathway towards sustainable prosperity. Given that Pontiac is diverse and features many small municipalities, our riding could particularly benefit from a strategic framework that would enable our communities to move from reacting to crises to anticipating them and proactively seizing opportunities.<sup>14</sup>

Across our riding there are already a thousand points of light; entrepreneurs, visionary officials, ambitious students and world-renowned experts that are already finding solutions for the complex problems of the

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<sup>14</sup> More than half of Pontiac's population lives in Northern suburbs or exurban communities like Chelsea, Cantley, Luskville and Cantley that are quite tightly linked to the National Capital Region. Most of the rest of the riding could be defined as 'rural' with economies focused on small towns. Pontiac also contains over 900 PhDs and nearly 20% are below the poverty lines. See Statcan, « Census Profile, 2016 Census : Pontiac, Municipalité régionale de comté [Census division], Quebec and Quebec [Province], (accessed November 14, 2021) <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CD&Code1=2484&Geo2=PR&Code2=24&SearchText=Pontiac&SearchType=Begin&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=2484&TABID=1&type=0>

future.<sup>15</sup> A strategic framework could bring focus to our efforts, enabling us to share best practices and pool our resources for mutual advantage.

Although there are already hundreds of industry reports, master plans and papers addressing a range of topics from climate change, to electric vehicles and food security and public transportation, this paper is focused on empowering local communities in Pontiac to adapt to the post-carbon future.

For Canada to meet its 2050 net-zero goal, remote communities, small business owners and rural municipalities will need to navigate this transition towards a post-carbon future. In diverse ridings like Pontiac, this will require an integrated approach that links economic, social and environmental goals, that leverages diverse Federal and Provincial financing programs, and empowers local governments and small businesses to meet the challenge of new regulations, higher prices and a disruptive basket of technologies.

The good news is that we do not need to reinvent the wheel. We are surrounded by innovative ideas, programs and politics. The goal of this paper is to survey the best practices employed in communities across Quebec and Canada, to draw lessons from history, to dig into secular economic trends and to reconcile these insights with the concrete realities of Pontiac. Although the challenges we face are great, our communities are strong, resilient and creative. Together, we can build a better future!

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#### **4. Green Transition for Pontiac: Prosperity, not Poverty!**

For ridings like Pontiac, the importance of adopting an inclusive framework for collective prosperity is magnified given that the riding contains many marginalized communities, two indigenous communities, an aging population, many economic sectors connected to intensive fossil fuel use, and a disproportionate number of citizens living near the poverty line. Without a concrete plan to offset the high upfront costs for decarbonization, or a coherent political strategy for adapting local business and institutions, climate policies risk amplifying current disparities and may trigger a gilets jaunes style backlash that could paralyze structural reform, or even bring it to a halt.<sup>16</sup>

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<sup>15</sup> All across Pontiac people are tapping into the climate crisis and devising solutions. See Jonathan Dekel, “This small town wants to become Canada’s first net-zero smart community — but first it has to tackle its energy challenge,” Mars Blog, September 28, 2021 (Accessed November 10, 2021) <https://www.marsdd.com/news/this-small-town-wants-to-become-canadas-first-net-zero-smart-community-but-first-it-has-tackle-its-energy-challenge/> And FCM “One mayor’s approach to managing his community’s assets: The small municipality of Pointe-Fortune, Quebec, takes asset management seriously,” FCM Blog (Accessed October 9, 2021) [https://fcm.ca/en/case-study/mamp/one-mayors-approach-managing-his-communitys-assets?\\_cldee=Yy5ncmVlBkBJaGVsc2VhLmNh&recipientid=contact-e7c43922ded9e61181c0005056bc2daa-187e004c6f4c4ae5a9c69a9d9880ddc1&utm\\_source=ClickDimensions&utm\\_medium=email&utm\\_campaign=FCM%20Voice&esid=9c0b61ae-ad40-ec11-80da-005056bc7996](https://fcm.ca/en/case-study/mamp/one-mayors-approach-managing-his-communitys-assets?_cldee=Yy5ncmVlBkBJaGVsc2VhLmNh&recipientid=contact-e7c43922ded9e61181c0005056bc2daa-187e004c6f4c4ae5a9c69a9d9880ddc1&utm_source=ClickDimensions&utm_medium=email&utm_campaign=FCM%20Voice&esid=9c0b61ae-ad40-ec11-80da-005056bc7996)

<sup>16</sup> The Federal and Provincial policies to buildout the infrastructure of the future still need to be put into place. Given the Federal system of government, investment for the green transition will take various forms ranging from public investment for infrastructure, to tax incentives, subsidies and accessing private capital markets. “The trillion dollar climate finance challenge (and opportunity),” 27 June, 2021. (accessed October 11, 2021) <https://news.un.org/en/story/2021/06/1094762>

The key dimensions of an inclusive prosperity are the following:

- **Fairness.** How can the cost for structural transformation be equitably distributed between the three levels of governments; what subsidies are necessary so that the poor meet their obligations; what the tax measures could help the wealthiest to contribute to our collective prosperity?
- **Affordable housing.** How can future strategic plans be supplemented to ensure that growth does not leave the poor behind and that affordable housing units are constructed and that everyone has the dignity of having a home.
- **Safety net.** Strategic plans need to provide mechanisms that enable every citizen basic access to food, schooling, and health care.
- **Re-training.** Strategic plans need to anticipate disruption in the labor market by providing vocational training for in demand fields.
- **Indigenous Inclusion.** Strategic plans need to incorporate indigenous communities in the fabric of regional planning.
- **Reconciliation.** Strategic plans to overhaul government and the economy, need to account for historic injustices and not aggravate existing disparities.

### III. Roadmap for a Strategic Framework

For Pontiac to reach sustainable prosperity, important decisions need to be made now. In particular local actors need to devise strategies to seize strategic opportunities and profit from the 2030 pivot point where the vectors driving green economy will reach critical mass. The diversity of our riding provides an additional rationale for a more coherent strategic framework that could help local stakeholders to better identify the challenges ahead, to assess future risks, and scout out potential opportunities.<sup>17</sup> Strategic planning isn't a new concept. All communities have longer range goals, the MRCs have master plans, and communities like la Pêche have already devised integrated plans that creatively link the economic, social and ecological dimensions of development.<sup>18</sup>

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<sup>17</sup> Given the high upfront costs for green transition, the 1/3 apportionment formula will probably not be adequate for municipal communities. See Global Cities Council, "PLANNING FOR AN URBAN FUTURE OUR CALL FOR A NATIONAL URBAN STRATEGY FOR CANADA, FEBRUARY 2018, 32p. (Accessed November 10, 2021). <https://globalcitiescouncil.ca/wp-content/uploads/2018/02/CGCC-National-Urban-Strategy-Report.pdf>

<sup>18</sup> See, for example, MRC Pontiac, "Pontiac Vision 2020; Strategic Plan," [http://www.mrcpontiac.qc.ca/wp-content/uploads/Diagnostic-MRC-de-Pontiac\\_en.pdf](http://www.mrcpontiac.qc.ca/wp-content/uploads/Diagnostic-MRC-de-Pontiac_en.pdf) and MRC des Collines, "Transcollines Strategic Plan 2019-2023," 16p. (Accessed November 10, 2021). [https://transcollines.ca/wp-content/uploads/2019/07/Planif\\_Strategique\\_synthe%CC%80se\\_AN.pdf](https://transcollines.ca/wp-content/uploads/2019/07/Planif_Strategique_synthe%CC%80se_AN.pdf). Most masterplans are short-term and topically focused. The municipality of La Pêche is quite unique in featuring a more sophisticated integrated plan linking ecological, economic, social and cultural goals, but the plan is largely aspirational and theoretical rather than identifying specific projects or laying out concrete metrics. See « 2019-2022 Strategic Plan, » 21p. (Accessed October 12, 2021) <http://www.villelapeche.qc.ca/downloads/Politiques/2019-09-18-plan-strategique-an-web.pdf>. Gatineau covers just under half of the riding's population, but only recently adopted a climate plan that is general and does not factor in the future increase in the price of carbon or climate mitigation.

## 1. Mobilizing Local Leaders

To catalyze longer range thinking and a more holistic approach to strategic planning, the first challenge is to mobilize local stakeholders. Most entrepreneurs, city councilors and citizens are aware of climate change, technological disruption and the business of government, but a process of consultation could help them to see how current challenges constitute an existential crisis that will require an urgent, focused and robust response. The MP, by networking with prefects and mayors, tapping experts such as *Conseil régional de l'environnement et du développement durable de l'Outaouais* (CREDDO), reaching out to citizens, and engaging local and advocacy groups can serve as the catalyst for defining what is important, for reimagining our communities and taking more concerted action. Citizens already keenly aware of local challenges, but few current master plans fully capture the broader context of climate change, technological change or federal net-zero policies.<sup>19</sup> During the mobilization phase, local stakeholders need to be invited to think outside-the-box, to consider how climate change, higher carbon costs and new technologies will disrupt how they traditionally do business. To catalyze the strategic planning process, the MP could partner with the MRC wardens to organize a series of consultation tables (Pontiac, Vallée-de-la-Gatineau, des Collines as well as Kitigan Zibi). The purpose of these consultations would be to initiate a dialogue between local stakeholders with experts in various portfolios like affordable housing, agriculture and public transportation so that local communities could get a clearer picture of the deeper sectoral trends reshaping the energy, construction, transportation, and agricultural sectors of the economy.<sup>20</sup> Simultaneously, local stakeholders could illuminate the challenges and opportunities within their particular communities, bringing renewed focus to strategic planning and creating conditions for innovative solutions that fit the local community.

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See Gatineau, “A Green City in you’re the Palm of Your Hand,” 24p. (Accessed November 10, 2021) <http://www.villelapeche.qc.ca/downloads/Politiques/2019-09-18-plan-strategique-an-web.pdf>

<sup>19</sup> See, for example, MRC Pontiac, “Pontiac Vision 2020; Strategic Plan,” [http://www.mrcpontiac.qc.ca/wp-content/uploads/Diagnostic-MRC-de-Pontiac\\_en.pdf](http://www.mrcpontiac.qc.ca/wp-content/uploads/Diagnostic-MRC-de-Pontiac_en.pdf) and MRC des Collines, “Transcollines Strategic Plan 2019-2023,” 16p. (Accessed November 10, 2021). [https://transcollines.ca/wp-content/uploads/2019/07/Planif\\_Strategique\\_synthe%CC%80se\\_AN.pdf](https://transcollines.ca/wp-content/uploads/2019/07/Planif_Strategique_synthe%CC%80se_AN.pdf). Most masterplans are short-term and topically focused. The municipality of La Pêche is quite unique in featuring a more sophisticated integrated plan linking ecological, economic, social and cultural goals, but the plan is largely aspirational and theoretical rather than identifying specific projects or laying out concrete metrics. See « 2019-2022 Strategic Plan, » 21p. (Accessed October 12, 2021) <http://www.villelapeche.qc.ca/downloads/Politiques/2019-09-18-plan-strategique-an-web.pdf>. Gatineau covers just under half of the riding’s population, but only recently adopted a climate plan that is general and does not factor in the future increase in the price of carbon or climate mitigation. See Gatineau, “A Green City in you’re the Palm of Your Hand,” 24p. (Accessed November 10, 2021) <http://www.villelapeche.qc.ca/downloads/Politiques/2019-09-18-plan-strategique-an-web.pdf>

<sup>20</sup> Current master plans, like those for Cantley and Chelsea, neighbors but very different sociologically, do have a focus on the natural environment, but only make cosmetic reference to the challenge of climate change and do not incorporate the impacts of rising carbon prices, new subsidies or major public investments in green infrastructure. See Cantley (municipality), “2005 Masterplan Summary,” (accessed October 12, 2021) <https://www.cantley.ca/sites/default/files/docs/summarymasterplan2005.pdf> and Chelsea (municipality), “Masterplan and Bylaws,” (accessed November 12, 2021) <https://www.chelsea.ca/en/residents/service-municipaux/planning/by-laws>



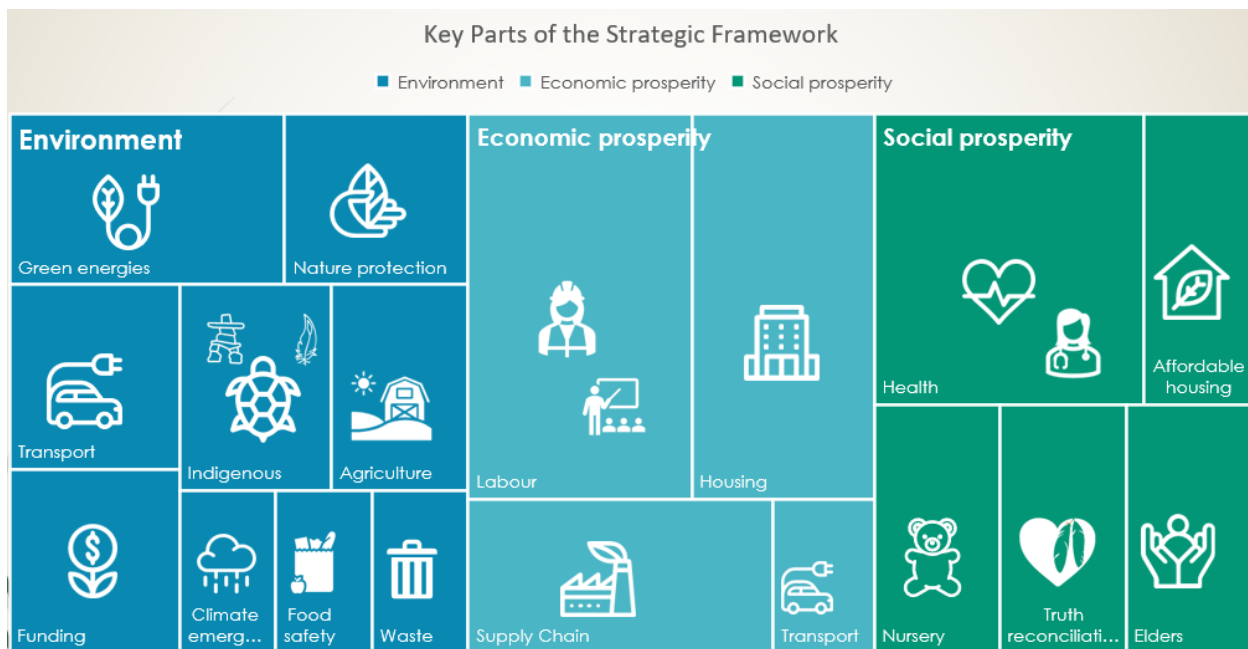
## 2. Form Strategic Advisory Groups

Second, following the consultation process, the MP would work with key regional players, like the MRCs to commit to a new round of planning to align different masterplans with the 2050 net-zero goal. Pontiac has abundant expertise. Various citizen groups, environmental organizations, advocacy groups and consultants are at the forefront of the innovation and could partner with city officials augment the capacity of local communities. At the MRC level, it might be beneficial to assemble a formal strategic advisory group with experts from complementary fields like construction, agriculture and fluvial engineering to assemble tool kits to abet strategic planning, build portfolios of innovative projects and help local leaders craft innovative projects uniquely tailored to their community.<sup>21</sup>

## 3. Prepare a Holistic Regional Framework

Third, the MP can form a select committee, perhaps drawing from the work of strategic advisory groups, to prepare a holistic regional framework that highlights innovative solutions in various communities, and illuminates strategic opportunities for regional development. Although not a plan in the sense of being binding, this framework could help local governments, entrepreneurs and stakeholders to synchronize their investments as they adapt to a lower carbon environment on a regional scale that often falls between the cracks of the existing structure of government. Given multiple jurisdictions, this strategic framework could also help to illuminate potential sources for financing, smoothing inter-jurisdictional collaboration and identifying strategic opportunities for regional investment.

The strategic framework for a green and prosperous Pontiac will have three parts: green transition; economic prosperity; and social prosperity.



<sup>21</sup> See the remarkable, useful resource prepared by the [UMQ, "Plateforme municipale pour le climat," 45p. \(Accessed October 11, 2021\) plateforme-municipale-climat-8avril21.pdf \(umq.qc.ca\)](https://umq.qc.ca/plateforme-municipale-climat-8avril21.pdf)

### *A. A Green Pontiac*

Under the umbrella of a green Pontiac, many topics can be broach, such as:

- **Water Protection:** The Ottawa and Gatineau River Valleys traverse multiple jurisdictions requiring an integrated approach relative to environmental monitoring, enforcing regulations and managing recreational use to maintain water quality and shoreline protection. Will climate change and increasing tourism and development require the development of a more robust structure of governance?
- **Ecological Restoration:** Global warming and increasing recreational use will put increasing pressure on particular ecosystems including lakes, the Parc de Gatineau. How can all levels of government collaborate to protect wetlands, other centers of biodiversity and create corridors that strike a better balance between nature and human activity, while also implementing smart design principles that mimic nature to reduce costs, suppress fires, limit wind damage and control flooding?
- **Park de Gatineau:** A vast natural reserve close to a densely populated NCR, this national jewel attracts millions of visitors but the vast majority visit a small part of the Eastern side of Gatineau Park, from Aylmer to Wakefield creating congestion, pollution and erosion. How can the weight of human activity and tourist dollars be more evenly distributed inside the park and across the riding?
- **Integrated Disaster Response:** Extreme weather events will intensify and accelerate infrastructural damage so to what extent can the Pontiac riding pool its resources to build a more effective response to fire, storm and flood damage?
- **Reforestation and Carbon Capture:** Most of Pontiac was once forest and reforestation represents the most economical strategy for carbon capture and the financing for such initiatives is likely to accelerate in the upcoming decade. How can MRCs and communities develop a comprehensive land-use plans that facilitates reforestation with sustainable forestry, more intensive tourism, more intensive recreation and development, with ecological preservation?

### *B. An Economically Prosperous Pontiac*

A green economy needs to tackle key issues such as labor shortage and infrastructure. For example:

- **Infrastructural Investment:** Not only Federal and provincial financing, but more significantly private investment will fuel the overhaul of Pontiac's economy. How can local entrepreneurs, communities and workers profit from this investment in cleaner energy, electrification of freight, buildout of the smart grid and zero emission construction?
- **Intra-Regional Transportation:** The public transportation network is currently more effective at connecting Northern Gatineau suburbs to offices in downtown Ottawa, poor

at connecting commuters between Aylmer, Hull, Gatineau, Chelsea and Val de Monts and poor at linking outlying areas like Shawville, Low, Maniwaki and Fort Coulonges to the NCR. How can emerging trends in electrification, big data analytics and autonomous vehicles and car-pooling systems be harnessed to promote more effective mobility?

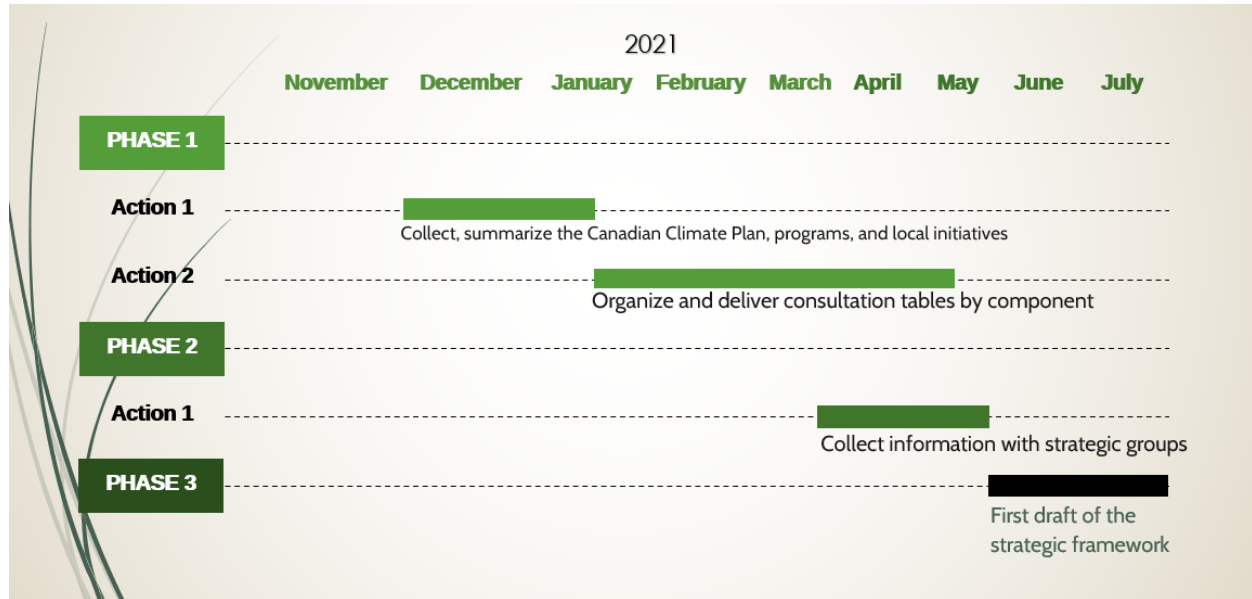
- **Piloting Demographic Trends:** The smart-grid and broadband rollout, along with teleworking will accelerate a trend of wealthy outmigration from expensive urban areas towards more remote areas. How can this migration be channeled to meet the net-zero challenge, fuel economic development in more remote communities and be reconciled with a pressing need for more affordable housing?
- **Education and Vocational Training:** The workforce of the future will require new skills and the NCR features many top-ranked Cegeps, colleges and universities. How can the urban footing of educational institutions be retooled with distance learning technologies to promote next generation skills that will be in high demand inside high schools and apprenticeship programs with entrepreneurs in remote communities?
- **Tourism Network:** Tourism will be a growing industry and Pontiac's nature and history are attractive and within range. How could investments in the three MRCs be better coordinated to provide better branding and integration to attract more visitors from the NRC, appeal to the tastes of new migrants and create critical spans to spur a cycle of new business investment particularly in remoter areas that have not fully benefited from this secular trend?
- **Labor Shortage and Immigration:** The Canadian economy is showing signs of a strong recovery, but the boom in construction has led to a shortage in skilled workers. We need a stronger plan and common action to welcome talented workers to our communities, find them affordable housing, and ensure their integration into our communities.

### *C. A Socially Prosperous Pontiac*

- **Affordable housing:** Canadians see owning a home as key to building their future and joining the middle class. But with rent increasing and housing prices continuing to rise, too many young people don't see a clear path to affording the same lives their parents had. Everyone should have a home to call their own if we want a stable economy environment in our communities and attract workers. Covid-19 pandemic has further exposed the acute need for safe and affordable housing in Indigenous communities that were already facing housing shortages, overcrowding, and a critical need for repairs.
- **Healthcare:** Lots of rural communities are facing a shortage of doctors, nurse practitioners, and other health care and social service workers that keep communities strong. Everyone should have access to primary care.
- **Food Security:** The global food system will experience major turbulence in the upcoming decade and extreme weather patterns will cause more crop failures, creating a need for more local supplier, better risk mitigation and more coordinated programs for

food banks. How can local farmers, consumers and governments collaborate to meet this mounting challenge?

## IV. Calendar



## V. Conclusion: A Framework for a Green and Prosperous Pontiac

This paper has sought to paint the challenges and opportunities ahead for this riding's diverse constituents, businesses and communities. While Pontiac is not a jurisdiction, the MP, representing various constituencies, is in a unique position to mobilize local stakeholders. The goal of this framework is to facilitate the implementation of Canada's climate, economic and social plan, to reconcile this plan with the concrete realities of the Pontiac. It would do so by identifying the best practices used in communities across Quebec and Canada, developing a toolkit to abet smaller communities with long-range planning, helping local actors to better anticipate the shocks ahead, effectively tapping subsidies for decarbonization, and collaborating across jurisdictions and to reimagine our communities.

One overriding principle of the green new deal concept is that no citizen can be left behind. While the challenges are great, if we work together and pool our strengths, we can re-engineer our economy to build a prosperous Pontiac for our children. What we do in the next few years matters. Today's leaders will shape the structure of our communities for the next sixty years. Will future generations be overwhelmed by the rising tide of climate change, unemployment and high food costs, or will our children live long and prosperous lives in vibrant communities?

# Annex

## Advancing the Climate Resilience of Canadian Infrastructure: A review of literature to inform the way forward, IISD REPORT

**Source :** Darren Swanson et al. “Advancing the Climate Resilience of Canadian Infrastructure,” <https://www.iisd.org/system/files/2021-07/climate-resilience-canadian-infrastructure-en.pdf>

**Table ES1.** Climate hazards, impacts, and resilience options for Canada’s built infrastructure

Infrastructure type	Climate hazard	Examples of infrastructure impacts	Examples of resilience options
Land transportation	Heat	<ul style="list-style-type: none"> <li>• Pavement softening, rutting, and bleeding</li> <li>• Thermal rail expansion (buckling due to heat)</li> </ul>	<ul style="list-style-type: none"> <li>• Use heat-tolerant pavement mixtures</li> <li>• Use low-solar absorption rail coatings</li> </ul>
	Changing precipitation patterns	<ul style="list-style-type: none"> <li>• Increased risk of critical events (e.g., washouts)</li> <li>• Increased ice accretion on cable-stayed bridges</li> </ul>	<ul style="list-style-type: none"> <li>• Increase culvert capacities</li> <li>• Use of cable coverings to shed accreted ice</li> </ul>
	Seasonal temperatures changes	<ul style="list-style-type: none"> <li>• Shortened winter ice road season</li> <li>• Soil and slope instability plus ground movement/settlement</li> </ul>	<ul style="list-style-type: none"> <li>• Transform ice roads into all-season roads</li> <li>• Install geotextiles</li> </ul>
	Storm surges	<ul style="list-style-type: none"> <li>• Causeways, bridges, and low-lying roads inundated or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Build riprap and dikes</li> </ul>
	High winds	<ul style="list-style-type: none"> <li>• Blocked roads, bridges, and railways due to debris or snow</li> </ul>	<ul style="list-style-type: none"> <li>• Update vegetation management-related standards (e.g., plant different trees species along roads)</li> </ul>

Infrastructure type	Climate hazard	Examples of infrastructure impacts	Examples of resilience options
<b>Buildings</b>	Heat	<ul style="list-style-type: none"> <li>Increased indoor air temperature and reliance on cooling systems</li> <li>Accelerated ageing of building materials</li> </ul>	<ul style="list-style-type: none"> <li>Upgrade ventilation systems and install window shades</li> <li>Install thermally reflective material for the roof and facades of buildings</li> </ul>
	Changing precipitation patterns	<ul style="list-style-type: none"> <li>Increased risk of flooded structures</li> <li>Roof collapse from heavier snow loads on roofs</li> </ul>	<ul style="list-style-type: none"> <li>Install backwater valves, sump pumps; redesignate no-build areas in high-risk flood zones</li> <li>Retrofit at-risk structures to a higher standard and monitor/remove snow accumulation</li> </ul>
	Seasonal temperature changes	<ul style="list-style-type: none"> <li>Foundation and building damage from changes in freeze/thaw patterns and drying of soils</li> </ul>	<ul style="list-style-type: none"> <li>Select concrete mixture aggregates that perform better in freeze-thaw cycles</li> </ul>
	Permafrost degradation	<ul style="list-style-type: none"> <li>Subsidence and buckling can damage foundations</li> <li>Loss of strength in building</li> </ul>	<ul style="list-style-type: none"> <li>Improve ventilation and adjustable structural posts</li> <li>Best design practices for foundations</li> </ul>
	Storm surges	<ul style="list-style-type: none"> <li>Erosion compromises the integrity of foundations</li> <li>Increased corrosion of metals</li> </ul>	<ul style="list-style-type: none"> <li>Protective structures/dikes/seawalls</li> <li>Metal product components with enhanced resistance to corrosion</li> </ul>
	High winds	<ul style="list-style-type: none"> <li>Loss of roof sheathing</li> <li>Windborne debris can shatter windows and damage exteriors and facades</li> </ul>	<ul style="list-style-type: none"> <li>Reinforce roofs/hurricane straps and additional fasteners</li> <li>Install impact-resistant glass</li> </ul>
<b>Water supply infrastructure</b>	Changing precipitation patterns	<ul style="list-style-type: none"> <li>Power outages due to electrical storms affecting pumping stations</li> <li>Reduced structural integrity and/or accelerated deterioration of dams</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced and redundant backup power supplies</li> <li>Adopt structural adaptations to dams, weirs, and drainage canals</li> </ul>
	Permafrost degradation	<ul style="list-style-type: none"> <li>Rupture of water lines and storage tanks</li> </ul>	<ul style="list-style-type: none"> <li>Use of polystyrene insulation beneath roads</li> </ul>
	Storm surges and sea level rise	<ul style="list-style-type: none"> <li>Flooding of treatment plant infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Seawalls, dikes, floodwalls, levees, local surge barriers, etc.</li> </ul>
	Drought	<ul style="list-style-type: none"> <li>Reduced source of potable water</li> <li>Cracking of earthen dams, increasing flood risk</li> </ul>	<ul style="list-style-type: none"> <li>Demand management and use of natural infrastructure such as bioswales, constructed wetlands, rain gardens, and bioretention systems</li> <li>Structural adaptations to dams, weirs, and drainage canals</li> </ul>



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