Living Well in Montreal with Less Energy: How the Transition Movement, Permaculture, and Systems Thinking Can Help

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We are a group of citizens who embrace the vision of building resilience and thrivability into our neighbourhood in response to the challenges of our times. We are guided by the belief that positive, creative actions based on localizing many services and resources can lead to a healthy, better-connected, low-footprint community able to adapt to economic and environmental stresses. We strive to empower citizens to connect and collaborate on projects and ways of being in the world that promote community resilience, empathic and cooperative relationships, and respect for the eco-systems upon which all life is dependent.

-Transition NDG Mission Statement

"We all need a sense of community. And we all need to believe that we have agency —a sense that we can make choices that will affect our lives."
Stuart Comstock-Gay, Vermont Community Foundation

This report is presented in seven sections:

I. Introduction

What We Face: Everything is Connected

We are convening as residents of Montreal through VertMtl and OCPM. We all share concern about climate change and its impacts on everything we hold dear. In doing so, we would be wise to broaden our gaze and take stock of a complex of interrelated problems that together threaten not only our community but human civilization. It is important to note that all of the following crises are intricately linked to one another and that for us to address the threat of climate change, we must first understand the causes and effects of the entire system.

What we can be certain of is a future in which change, sometimes rapid and extreme, becomes the norm. Post Carbon Institute has identified four sets of crises that face our global community:

- **Ecological:** Humans have rapidly consumed far more resources than our ecosystems can naturally replenish and at the same time we've produced far more waste than they can absorb. Because of this, we face crises in our soils, freshwater and biodiversity as well as the clear and growing danger of climate change. Now it takes the equivalent of 4 earths to sustain the current North American standard of living. Climate change is forcing the global community to transition away from fossil fuels with a growing sense of urgency. An important new report suggests that we are facing 10,000 years of human-caused climate instability (Consequences of 21st Century Policy for Multi-Millennial Climate and Sea Level Change).

- **Energy:** The end of cheap, easily extractable energy is over. Plentiful fossil fuels are what have allowed our systems to grow past sustainable levels, from our population, economy and consumption to the waste and pollution we leave behind. Renewable energy will play an important role in transitioning to a post fossil fuel world but it is presently not sufficient to satisfy our current and growing energy needs.

- **Economic:** Petroleum is what has fuelled the unprecedented growth in our economy. With the inevitable phasing out of fossil fuels because of both climate change and depletion, what will provide the energy for a perpetual growth economy? In addition, debt has risen exponentially which presents real danger to the economy.

- **Equity:** We have seen rapidly growing inequality in the past two decades in social, economic and political power. The middle class has shrunk while a small percentage of super rich have amassed unimaginable wealth. A sure sign of a declining civilization historically has been such disparities of wealth and power.

II. The Montreal Context

Taking Stock of our Intellectual, Social, and Ecological Resources

Montreal and its surrounding bioregion are full of valuable resources that can greatly help us reduce our carbon footprint if used wisely.

The 100-mile radius around the city can celebrate its abundance of water, hydropower and transportation waterways; fertile land for growing food and other materials; undeveloped land and nature preserves as well as its network of small scale growers and towns. It encompasses longstanding indigenous communities that preserve traditional know-how. This will become crucial as we learn more about this place and what has preserved life here for the millennia before the industrialized model took over.

The city itself is known for innovation and creativity; it has entrepreneurs, diverse cultures and languages as well as financial capital and infrastructure. It has rich intellectual resources and is home to a number of universities and research facilities. Cities actually turn out to be surprisingly green. They are dense, pool resources, and promote complex social interactions that make things happen more quickly and at a larger scale than in smaller, isolated communities. Cities are dynamic!

Quebec also has a long history of advocating for self determination, wealth equity and social safety nets that insure the common good. One example is the cooperative movement.

Local Transition communities and other related systems-based models abound in our area. Montreal has the beginnings of a thriving Transition movement. Villeray en Transition is a vibrant example of Transition. The group has organized multiple projects and events including asset mapping and developing lists of local resources, creating edible community gardens, worm composting circles, film groups and fruit gleaning events.

Another example of a transitioning neighbourhood is Transition NDG (TNDG). A central focus of the group is to increase the availability of local, fresh, healthy food. Toward that end, the group has developed edible community planters and gardens along commercial streets in collaboration with Action Communauterre and the NDG Food Depot.

They have also started to collaborate with the Concordia food community, Hudson Food Collective, area farmers, and Protecterre in exploring possibilities for innovative models, including cooperative ownership of farmland and land trusts, for developing local food security.

Other collaborators that together form a web of resilience resources are P3 Permaculture, Coop La Maison Verte, Ferme Zephyr, Ferme Melilot, Helios Maker Space, NDG Food Depot, Cycle Alimentaire, Compost Montreal, the NDG Community Council and many others.

III. Individual Solutions

How We Respond: Relocalize!

In crisis is opportunity. We now have the chance to re-imagine the way we live. In fact, we must. Given the enormity of what we face, can we pause to reflect for a moment? What do we value most? What makes our life meaningful? Person by person, can we hold the intention to make better choices? Can we strive to take action not only to help the world but to improve our own day-to-day lives?

There is certainly a place for large, systemic transformations such as globally phasing out the use of fossil fuels. The problem is that this process is very slow and is fraught with political, socio-cultural and financial constraints.

We must invest in renewable energy systems. **But renewables alone are not enough. It is now evident that in addition, we must learn to live with less energy.**

What if we decided to take responsibility for our own well-being and that of our neighbours? We can indeed make small changes in how we live at the local level, street by street. The irony is that this low cost, low-tech transformation that can be controlled by us--the inhabitants and stakeholders-- just might lead us back to what we most yearn for.

There are a growing number of communities around the world who have done this work. They show us by example the promise of:

- renewed connections with those who we share our time and place,
- more time to find meaningful work and ways to be useful to our loved ones and neighbours,
- a reinvigorated local economy where our resources and money stay put,
- a less polluted, greener and healthier place to live,
- enough (not too much) to equitably sustain ourselves and those around us.
- last but not least, localization solves many energy problems (minimizing transporting of long-distance goods for example) and thus is an essential part of a carbon neutral future.

This is what we mean by transition.

IV: Community-based Solutions

A New Paradigm Emerges: Resilience

Resilience can be defined as the ability of a system to bounce back from an insult of some kind. In ecology, a resilient system can absorb a disturbance and still retain its basic identity and function. Resilience thinking can be thought of as the next generation: encompassing, yet going beyond, the discipline of sustainability.

In the new science of resilience, "a community and the ecosystem it makes use of are together considered a unified socio-ecological system. The system's adaptability is a function of general characteristics like diversity, innovation, and feedback, as well as its ability to cope with vulnerabilities specific to its situation and to make deeper transformations if needed. Importantly, the system is understood to be a 'complex adaptive system' that is not static but is constantly adapting to change—change that is often unpredictable." (*Six Foundations for Building Community Resilience* by Post Carbon Institute)

Another important feature of building community resilience is "scalability." By starting with small changes at a very local level, we can take into account the social, economic and environmental resources and vulnerabilities particular to that place. It also gives the stakeholders there a direct role and power over decisions. This offers a great advantage because it is the inhabitants of a place who hold the most knowledge and understanding about it and who care the most for it.

Once a resilient system--or neighbourhood--has been established it can then be replicated, always taking into account the particulars of the new location. Replication, along with equipping new communities with the know-how for transitioning, make resilient systems scalable so they can sprout up throughout, for example, a larger metropolitan area or bioregion. All these sprouts can form connections of their own and interact by sharing social and natural resources. This type of interaction creates a truly robust way of living together.

Two powerful and interconnected models in particular are helping us understand what it means to be resilient as a community and giving us the tools and knowledge to transform.

Permaculture is a systems-based approach that rose out of observing how nature designs her own dynamic, adaptive systems. Bill Mollison, one of the founders of the movement said, nature's "patterns are created in response to flows of energy. Permaculture observes them, speeds them up, replicates them and enhances them." This way of thinking implies that instead of working *against* nature's patterns, we can instead work *with* them.

Imagine that humans could actually learn to be of benefit to the earth instead of being a destructive force.

The Transition Movement arose out of permaculture and uses the same type of self-sustaining, dynamic systems of nature for modelling the social networks and infrastructure of our towns and neighbourhoods. The Transition Network based in the UK plays and educational and organizational role to inspire, encourage, connect, support and train communities throughout the world as they self-organize around the Transition model, creating initiatives that rebuild resilience and reduce CO2 emissions.

The growing web of over 3000 transition communities worldwide and the free, accessible and deeply connected information network they share give communities everywhere a valuable model and the necessary encouragement for change.

Creating an energy descent plan for a neighbourhood means taking responsibility at the local level for basic human needs such as food, water, shelter, energy and waste management. It also includes social needs like health, justice, and community connectedness. Examples of projects might include wholesale group buying of rooftop solar panels or creating a "commons," a meeting place where people can come together to learn skills, create art or farmstead crafts, or just have fun.

V: A Local Case Study

Transition in Action: Steps toward Building a Community Food System

To illustrate by example, Transition NDG is at the beginning stages of creating what we hope will become a thriving local community food system. We will not do this alone but in collaboration with the multitude of other community stakeholders listed above.

A community food system is defined as a network of food growers, transporters, distributers, processors, consumers and waste managers both inside the neighbourhood and also in peri urban areas that have more space. A key element is that the neighbourhood and its inhabitants participate in and/or direct all aspects of the systems. Community members in collaboration with local government make decisions on the land and water tenure as well in order to insure greater food security.

In line with resilience thinking, the overarching plan for building our local system has five elements.

1. **Asset Mapping:** the process starts by describing and locating our specific resources. For example gardens, close-by farmers, local food-related businesses, neighbourhood fruit trees, bee hives, non-profits, government organisations, cooperatives, restaurants and individuals that contribute to our food and waste systems.
2. **Identify Problems, Gaps and Vulnerabilities:** We first listen and learn from our local experts. Who are the farmers? What are their constraints and concerns? How can we support what they do? What percentage of our food is transported from thousands of miles away? What would happen if that flow of outside food were to stop? The same goes for our understanding our food waste, food distribution, etc.
3. **Make a Plan:** Equipped with knowledge of the assets and vulnerabilities of our system, we plan for how we can cultivate more resilience and stability. Perhaps we decide to support and educate backyard gardeners, create a community garden in a food desert or create a land trust to support local, small scale, organic farmers.
4. **Continuously Learn and Adapt:** The process is never ending. With each season and every project completion, we re assess and improve our system.
5. **Build and Grow Relationships:** throughout the process, we maintain and build equitable, respectful relationships with inhabitants, organisations and governments. We might decide to have a harvest celebration for the entire community or teach a local elementary classroom how to grow their own gar-

den. The bedrock of complex systems is relationships and the heart of a Transition community is its interconnected people.

These steps can be followed to create any type of resilient system, whether it be to address our energy needs to weather the next ice storm, or to develop a thriving local economy that encourages small, close-by shops and tradespeople and keeps our resources circulating inside our area rather than leaking out through the local big box store. In Totnes, the UK's first transition town, they went so far as create their own local currency, the Totnes pound, that could be traded between locally owned businesses and townspeople.

In remembering that all of the systems that support us are interconnected, our quest for building a resilient community that can better withstand the shock of climate change will not end with food security. We will need to address all of our other needs as well, such as our need for more energy efficient houses and buildings.

Our personal experience in working together at Transition NDG has been that the whole process, rather than being laborious and stress filled, has instead given each of us a renewed sense of hope, purpose, meaning and connectedness to the place we live.

In summary, Post Carbon Institute reminds us that "we can offer an alternative to the current 'growth at all costs' story, one in which taking control of our basic needs locally has multiple benefits by:

- creating new enterprises and meaningful work,
- increasing well-being rather than GDP.
- reducing green house gas emissions and dependence on fossil fuel.
- addressing social and economic inequities
- building the social cohesion necessary to withstand periods of crisis.
- Most importantly, *showing a different way* of living, interacting with each other, and respecting the social and ecological systems that sustain us."

"Hope is…an ability to work for something because it is good, not because it stands a chance to succeed… It is not the conviction that something will turn out well, but the certainty that something makes sense regardless of how it turns out."

-Vaclav Havel

VI: Recommendations for the City

We call on Mayor Denis Coderre and our City government to be our partners in building resilient neighbourhoods. We ask him to acknowledge the cost effectiveness, good sense and necessity of localizing our communities' needs as part of transitioning to a fossil free Montreal. We request support for ourselves, the inhabitants, as we take responsibility for our collective wellbeing so we can better withstand the shocks of climate change, one neighbourhood at a time. Before embarking on this transition and breaking ground on the numerous plans and projects that will enable it, we need to agree collectively on a specific destination. As such, we join our voices with those of the Montreal Climate Coalition in recommending that Montreal join the

Carbon Neutral Cities Alliance and adopt an ambitious vision: carbon neutrality for our 400th anniversary in 2042.

To operationalize this vision, we ask for economic, regulatory and technical support for:

1. Providing education about the Transition Model and replicating it throughout the metropolitan area.
2. Rural-urban partnerships that build on the symbiotic relationships between different parts of our bioregion.
3. Prioritizing zoning for green spaces and nature, and for food production. Economic incentives for urban farmers as well as small-scale organic farmers in the peri urban area.
4. More "commons" everywhere: gardens, Transition centres, maker/arts/ homesteading workshops and studios, farmers markets, and inclusive multi-generational centres in every sector of the city.
5. Establishing edible plants and shrubs in public spaces and in private gardens.
6. Creating closed-loop food systems that take into account every part of the cycle from soil to seed to produce to waste to soil.
7. Community food systems in every neighbourhood.
8. Building other local resilient systems such as for diversified electricity, energy efficient shelter, and vibrant neighbourhood commerce.

VII. Resources

The Transition Network, Rob Hopkins, et al:
https://www.transitionnetwork.org/about
https://www.transitionnetwork.org/books

The Post Carbon Institute, Richard Heinberg, Asher Miller et al:
http://www.postcarbon.org/about-us/
http://www.postcarbon.org/publications/le-climat-apres-la-croissance/

The Permaculture City, Toby Hemenway:
http://tobyhemenway.com/book/the-permaculture-city/
http://www.chelseagreen.com/the-permaculture-city

The Permaculture Institute
http://www.permaculture.org/

Transition NDG
https://www.facebook.com/TransitionTownNdg/
https://ttndg.wordpress.com/

Villeray en Transition
http://www.villerayentransition.info/

Mid Atlantic Transition Hub (MATH)
https://midatlantictransition.org/

Consequences of 21st Century Policy for Multi-Millennial Climate & Sea Level Change
http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate2923.html

The 12 Principles of Permaculture