For a 21st Century Metropolis

Sustainable Development – Towards a better management of our natural resources



INTRODUCTION

Society is transforming its outlook on the world as it moves from a short-term to a long-term vision. This view of continuance brings with it a change in habits involving both the community as well as the individual.

It is now vital that we work together so that our city may continue to flourish and thereby offer a better quality of life with a view to the long term and, more specifically, to sustainable development.

We would like to solicit your viewpoints and your recommendations for an improved handling of our natural resources; namely, through drinking water taxation, composting, and energy reclamation. We will also discuss waste-to-fuel conversion through biomethanation.

Today, use of the automobile no longer provides an adequate solution in light of the requirements of sustainable development. While the environmental advantages of public transit and active transportation (biking, walking) are strongly emphasized, the economic and social impacts of these transit methods are, on the other hand, less well known or perhaps less well understood by a majority of people for whom sustainable development is but an ecological lens through which our lifestyles are examined.

We also wish to better pinpoint the stakes of sustainable development by examining in detail the social and economic aspects of transportation in Montréal. We wish to highlight the advantages of public and active transportation modes in relation to the use of personal vehicles. This also means determining the stakes involved in the prolongation of the metro lines and the East end commuter train lines, etc.

What does Union Montréal want?

We wish to demystify for our militants the concept of sustainable development by uncovering all its features. The term "sustainable development" has been circulating since 1987, the year that saw the publication of the Report of the World Commission on Environment and Development entitled "Our Common Future." Experts agree that the expression is now exhausted. Yet, sustainable development isn't that hard to grasp. We need only take a closer look to realize that, already, we carry out certain daily gestures that fall in line with the steps necessary to making our lives, both now and in the future, healthier and much more mindful of our resources.

This workshop ought to help us realize, each in our own region, that our lifestyles affect society as a whole and, more pointedly, affect our community. We also wish to cull your recommendations so that the projects that most concern you as Montréalers represent your true needs. These recommendations will be tabled at the General Council on November 5th later this year.

In order to achieve the goals outlined above we will explore, over the course of these conferences, two great themes relating to sustainable development:

- Towards a better management of our resources
- Migratory dynamics and urban planning

SUSTAINABLE DEVELOPMENT

These days, there is much talk of sustainable development. But what is going on, exactly? For most people, it simply means that we must protect the environment. While this may be true, the notion of sustainable development encompasses much more than this single ecological ideal.

To act with a view to sustainable development entails that we be willing "to take the decisions needed to secure the resources to sustain this and coming generations." This definition hints at two key concepts; namely, the absolute necessity of answering to the needs of the impoverished and the taking into account of our technological advances and of their limits in relation to the environment's ability to meet the needs of everyone, both now and in the future.

Sustainable development henceforth encompasses four spheres of activity that are part and parcel of the concept itself, and those are the economic, social, cultural, and environmental spheres of society. These four facets of sustainable development are inherently interconnected and it is on all four, together, that the stakes will rest. It must be understood that the links between economic growth, social issues, cultural diversity, and the environment are inseparable. Trade-offs are less and less desirable or even possible.

In reality, "in order to be considered sustainable, development must create wealth, meet the social needs of the community, and be respectful of the carrying capacity of ecosystems so as to safeguard resources and the quality of the environment for the benefit of future generations."2»

"We may add that Montréal is the seat of the Convention on Biological Diversity, signed in Rio in 1992 and implemented the following year."³

¹ Brundtland Report

² Sustainable development reference framework. Arrondissement Saint-Laurent. July 2009. p. 3

³ Mathieu-Robert Sauvé, *Le futur prêt-à-porter : Comment la science va changer nos vies*.

Sustainable Development, Strong and Weak: What is the difference?

There exist two types of sustainable development, one strong (radical) and one weak (progressive). The first type, strong (radical), pleads for the integral preservation of our remaining natural capital and for ceasing its exploitation by relying instead upon the interests of our current natural capital. The second type, weak (progressive), relies upon investment in new technologies in order to remedy the loss of natural capital. In the latter view, new technologies serve as substitutes. We must create living spaces, cultural spaces, knowledge spaces, and transportation modes that suit the needs of individuals and contribute to economic growth while reducing the size of their ecological footprint. Technology must contribute to the replacement of the natural resources we consume.

According to Pierre-Olivier Pineau, Associate Professor at the HEC's Department of Management Science, it is important to find a balance between these two views. Neither option is tenable in its extreme version:

If, hypothetically, we want to commit to strong sustainable development, to this idea of a strong durability where we never touch our natural capital, we have to admit that, given the situation we're in, we must first go through a period of weak sustainable development because, as things now stand, we're not even able to compensate for our current impact on nature. The West, indeed the entire world, is gnawing away at its natural capital. Thus, our ecological footprint is such that the capacity of our ecosystems to provide breathable air, drinking water, nutritional bounty, and arable land is diminishing. We must first reach that point where we can prevent our ecosystem's ability to provide life's essentials from **declining**. This will require us to go through a weak sustainable development phase, that is, one where we lessen our squandering of natural capital and increase our ability to provide for ourselves through technological means, thus implying a greater investment in human and technological capital and a gradual path to ecosystem preservation. This is urgent. We must act very quickly but setting for ourselves an unattainable goal, one that we must reach right now, well, that's a bit discouraging and impossible to achieve anyway, so let's go step by step but let's start right now.⁴

⁴ Pierre-Olivier Pineau, in conversation at his HEC offices.

SUSTAINABLE DEVELOPMENT PLAN 2010-2015

VILLE DE MONTRÉAL

The 2010-2015 sustainable development plan is structured around the following five goals:

- Improving air quality and reducing greenhouse gas (GHG) emissions.
- Maintaining residential neighbourhood quality of life.
- Exercising responsible resource management.
- Adopting sustainable development best practices for industry, commerce, and institutions.
- Increasing protection of biodiversity, natural environments, and green spaces.

TOPIC

PUBLIC TRANSIT AND ACTIVE TRANSPORTATION

PUBLIC TRANSIT AND ACTIVE TRANSPORTATION

It is time to rethink and to revise our habits for we are now confronted with a level of greenhouse gas (GHG) production high enough to jeopardize all forms of life in the long term. In 2007, Montréal provided itself with a Transportation Plan whose aims are the development of public transit and active transportation, the curtailment of our reliance upon the automobile, and the enhancement of transportation safety. These aims are part of a firm resolve to significantly reduce GHG emissions so that we may bequeath upon future generations a healthier environment.

These greenhouse gas emissions are fraught with terrible consequences on public health, especially in children and the elderly whose quality of life is thereby mortgaged. **Montréal has pledged to reduce its GHG emissions by 30%** by the year 2020. The major sources of GHGs are, first, transportation, followed by the excessive energy consumption levels found in buildings. Montréal's Transportation Plan will first target our reliance upon the automobile.

One of the City's objectives over ten years in matters of transportation—21 Development Programs (according to the Transportation Plan):

- Provide optimal transportation conditions
- Improve resident quality of life
- Enhance the environment
- Support Montréal's economic vitality

It is unrealistic to believe that, starting tomorrow, we can all put away our cars in order to rely straightaway on public transit and active transportation modes. For some, automobile use remains unavoidable.

"Obviously, public transit will not suit everyone. Nevertheless, with the new services we wish to introduce, I am hoping that it may be made more accessible, given the needs of the population." —Michel Labrecque, President of the STM

Users and public transit

The facts

"In matters of public transit use, Montréal ranks first among Canadian and U.S. cities with an average of 140 public transit trips per person per year, a rate that is similar to, if not higher than, that found in many European cities."⁵

According to the Canadian Automobile Association, the annual cost of an automobile varies between \$6,500 and \$8,600 once the costs of fuel, registration, insurance, and depreciation are taken into account.

"The benefits [of public transit] are numerous: greater purchasing power for households, convenient mobility, lower congestion costs, and higher property values in the area."

Five requirements for an efficient public transit system:

- Punctuality (dependability)
- Frequency
- Security
- Comfort
- Cost

While the STM raised public transit fares several times over the past few years, it must be noted that current STM fares remain among the lowest in North America and that high quality services are the best foundations for successfully increasing ridership."⁷

10

⁵ Transport Plan 2007. p. 37

⁶ Board of Trade of Metropolitan Montreal. *Public Transit: At the heart of Montréal's economic development.* November 2010. p. 25

⁷ Transport Plan 2007. p. 35

Active transportation

Cities were designed around our use of the car. Infrastructures have long been built with this, our reliance upon the automobile, in mind. This is what makes walking and biking so difficult as transportation methods. We must adapt our infrastructures in order to make them more user-friendly to pedestrians and cyclists. In the same vein, Montréal must continue to develop public transit and active transportation in order to offer competitive alternatives to all.

The segment of the population considered overweight is such that the World Health Organization (WHO) now refers to an obesity epidemic. Thus, public health is a major factor in matters of transportation. Choosing active transportation such as walking and biking is a simple, accessible, and inexpensive way to increase physical activity and to keep obesity at bay.

Traffic congestion

According to Pierre-Olivier Pineau, of the HEC, car use is a true waste of productivity, in the widest sense of the term. Traffic congestion generates a waste of time that could otherwise be spent on leisure, rest, or work. Parents are robbed of quality time they could be spending with their children. Public transit, on the other hand, if its services are well structured, allows people to spend more time together and to socialize with one another.

Motorists coming from the "second suburbs," off-island, contribute to ever-growing traffic jams.

Despite the prolongation of the orange metro line to the Montmorency station and the AMT commuter train service, problems tied to automobile circulation are worsening.

Train schedules do not always meet the needs of users.

The same is true of those Montréalers living in the "first suburbs". The projected metro lines, as well as those currently being built, will offer citizens a better alternative.

Many households struggle through transportation and transit issues and through a dearth of quality time better spent on family and leisure.

TRANSPORTATION

The bus8:

- Overnight bus routes reviewed and amended;
- Maximum 10-minute wait along the 31 highest ridership routes between 6 am and 9 pm;
- 850 new bus shelters;
- Financial stake. It costs \$150 million per kilometre to build a metro rail whereas building a reserved bus lane costs only \$7 million per kilometre;
- Beginning in 2025, buses purchased by the STM will be zero-emission;
- Development of the local, 100% electrically-powered bus (STM);
- Reserved lanes and priority traffic signals for buses;
- Bus Rapid Transit (BRT) network that will allow buses to travel on reserved lanes, provide greater comfort, and use real-time intelligent transportation services;
- The first BRT service will begin operation in the Pie-IX corridor in 2013 and a second one, in the Henri-Bourassa corridor, is scheduled for 2018.

Why are you not choosing public transit and active transportation?

What is your general perception of those services you do use?

Can you suggest anything that would enhance services in your area?

How ought the development of collective transportation be funded?

Should we impose road-use fees (tolls, access permits)?

How could we best increase public awareness as to the benefits of public transit use?

13

⁸ cf. Strategic Plan 2020. Summary document, project for consultation. December 2010

The subway

The prolongation of metro lines:

- The blue line towards Anjou, in 2016, from the corner of Pie-IX and Jean-Talon to the boulevard des Galeries-d'Anjou;
- The orange line, in 2019, from the Côte-Vertu metro station to Bois-Franc;
- New MPM-10 subway cars;
- Coverage will extend to 97.2 million kilometres.

Wireless communications network to be installed in the entire subway system.

Are you satisfied with the current plan for your area?

If not, how could it be improved?

The train

East end commuter train

- In operation by summer 2012;
- Construction of a new 12-km trunk, for a total track length of 52 kilometres;
- Addition of 11 train stations connecting downtown Montréal to Mascouche;
- Transfer points towards the orange metro line at Bonaventure (Central Station) and Sauvé metro stations;
- Capacity of 5,500 passengers per peak hour, of which roughly 30% currently use their car;
- Estimated total cost of the project: \$435 million.

Are you satisfied with the current plan for your area?

If not, how could it be improved?

West end commuter train

- Preliminary studies under way;
- In operation by 2016;
- Will connect Hudson to downtown Montréal;
- No sharing of tracks with freight trains;
- Number of daily departures raised from 21 to 43;
- Average frequency of passage: 12 minutes at rush hour, 30 minutes during weekday off-peak hours;
- Estimated cost of the project: between \$870 million and a just over \$1 billion.

What are your expectations regarding this project?

How could it be improved?

The tramway

According to Pierre-Olivier Pineau, Associate Professor at the HEC's Department of Management Science, trams are a good idea if our aim is to revitalize a neighbourhood; the tramway has more to do with economic contingencies in a tourism context than it does with the notion of sustainable development. The tramway must complement other services.

Says Pr. Pineau: "In principle the tramway is a good idea, especially if huge financial resources are available. The problem is this, that we are currently experiencing a financial crisis, a crisis in public finances. Also, the capacity of households to increase their payment load to governments is very much limited. Thus, we cannot secure funds sufficient to invest in the tramway while the improvement of public transit ought to remain a priority."

What are your own thoughts on the tramway?

The Pedestrian Charter⁹

Montréal provided itself with a Pedestrian Charter as part of its aim to improve harmonization of its public transit services.

- Integral part of the City's Transportation Plan;
- Strictly enforces the Highway Safety Code and encourages the adoption of safe behaviours;
- "The Charter will:
 - focus efforts by the municipalities and boroughs on improving the safety and user-friendliness of the pedestrian experience;
 - consider the role that pedestrians play in the economy by prioritizing them in the design and conception of the public domain;
 - ensure that streets once again serve as settings for meetings and social interaction."¹⁰
- Installation of digital-countdown traffic signals giving pedestrians more time to cross;
- Increase in the number of police officers on traffic detail;
- Monitoring of vehicle speeds;
- Inclusion of pedestrian needs in new infrastructures design;
- Campaigns to make pedestrians aware of their rights and responsibilities.

Do you consider motorists, cyclists, and pedestrians to be respectful of one another?

Do you think that increasing sidewalk width would make pedestrians feel safer?

Would it be a good idea to further raise Montréalers' awareness of the Pedestrian Charter?

⁹ cf. The Pedestrian Charter. June 2008.

¹⁰ cf. The Pedestrian Charter. June 2008, p. 42

BIXI¹¹

Bixis are a powerful symbol of Montréal. This pioneering active transportation mode won many prestigious international prizes. In 2009, the BIXI bike system won both the Edison Gold Award in the *Energy and Sustainability* category and the IDSA International Design Excellence Bronze Award in the *Transportation* category.

- TIME Magazine ranked the system 19th in its list of the 50 best inventions of 2009, even before the system became operational;
- The service is accessible to all;
- 24 hours a day, seven days a week;
- Three seasons a year, from April to November;
- 405 solar-powered stations;
- Available in 11 boroughs (new for 2011 : Notre-Dame-de-Grâce, Ahuntsic, and Verdun);
- Bike maintenance performed by CycloChrome, a social economy enterprise helping to combat the academic dropout rate;
- Corporate programs available;
- STM and BIXI combo.

You have BIXIs. What do you think of this service? Could it be improved?

Do you want BIXIs? If so, where and why?

_

[&]quot; cf. www.bixi.com

Car-sharing

Communauto¹²

- Business founded in 1994;
- Ranked 19th in L'Actualité's 2007 Les Leaders de la croissance list with a growth rate of 332% over five years;
- Adults aged 25 to 44 constitute 65% of Communauto's Montréal clientele;
- One Communauto car on the road means eight fewer personal vehicles on the road;
- 30 to 40 percent reduction in kilometres traveled;
- 60% reduction in CO₂ emissions per person per year;
- Savings of \$5,900 per year per subscriber over the cost of private vehicle ownership;
- Reduction of parking space needs;
- Corporate program available;
- STM, BIXI and/or Communauto combos available;
- Under consideration: "En ville, je PEP ma voiture." PEP: Prêt Entre Personnes (Private vehicle interpersonal loans).

Are you sufficiently familiar with car-sharing and how to participate in it?

¹² cf. Le projet auto+bus. Évaluation d'initiatives de mobilité combinée dans les villes canadiennes. Telsuc. June 2006.

Universal Accessibility

The aim of universal accessibility is to foster personal autonomy and citizen participation. La Ville de Montréal « souhaite que tous les utilisateurs, peu importe leurs capacités, puissent profiter, de manière comparable, des possibilités offertes par un bâtiment, un espace urbain, un programme, un service ou une information··· Conséquemment la Ville de Montréal vise à réduire les obstacles, à les éliminer ou à offrir des alternatives facilitantes. [1] » (The City of Montréal wants all users, regardless of functional ability, to enjoy equal opportunity access to buildings, public spaces, programs, services, and communications. Consequently, the City of Montréal intends to minimize or eliminate obstacles or to offer helpful alternatives.)

Here, we may call to mind the pedibus (pedestrian bus) for toddlers, elevator access to the metro for persons with reduced mobility, traffic-calming measures, the Montréal *Recreational Activities Assistance Program for persons living with a disability,* the Publiphone (a service broadcasting City press releases and municipal news over the phone), and more.

Moreover, in a city where the population is growing older, it is crucial to rethink urban planning so as to promote a better quality of life for the elderly. Traffic-calming measures near elderly care homes and facilities, longer street-crossing delays, and wider sidewalks are all deemed necessary steps in the integration of people of all ages into the life of the city.

_

^[1] L'accessibilité universelle : Un engagement de la Ville de Montréal. 2010 edition, p. 7

TOPIC

TOWARDS A BETTER MANAGEMENT OF OUR NATURAL RESOURCES

ENERGY FUND

The creation of the Energy Fund is the first step taken in the context of the Climate Protection Corporate Action Plan whose aim is to reduce the City's greenhouse gas (GHG) emissions by 20% by the year 2012. This fund finances, through interest-free loans, energy efficiency projects undertaken by municipal services and the boroughs.

The Energy Fund is a vital tool in the implementation of municipal building GHG emissions reduction. This initiative, similar to an internal bank, has a three million dollar budget at its disposal in order to fund energy efficiency projects undertaken by municipal services and the boroughs.

On June 2010, the Energy Fund won a *Phénix de l'environnement* prize in the "Municipalités et organismes municipaux – Adaptation et lutte aux changements climatiques" category. Since its creation in 2008, the Fund has awarded two million dollars in grants to eight projects which, together, led to a CO₂e reduction of nearly 800 tons.

Among the projects financed by the Energy Fund, are the following:

- Construction of an indoor swimming pool at the Centre Jean-Claude-Malépart in the borough of Ville-Marie (a contribution of \$300 000).
- A heating system replacement project (oil to natural gas conversion through a high efficiency boiler) at the Centre Lafond in the borough of Rosemont—La Petite-Patrie (a contribution of \$120 000).
- Repair of the mechanical and lighting systems of the Martin-Lapointe arena in the borough of Lachine (a contribution of \$300 000).
- The Biodôme, the Muséums nature de Montréal, the Montreal Jewish General Hospital, the Montreal General Hospital.

These are important investments whose short-term returns-upon-investment are impressive, both in the sense of energy efficiency and in the financial sense.

Should we establish a set energy waste-reduction standard for municipal, governmental, and industrial buildings? Should we provide ourselves with a renovation-and-construction policy that would compel industries to plan for low-energy-consumption buildings?

COMPOSTING AND BIOMETHANATION

By the year 2020, all of Québec will have to implement composting in order to meet the requirements of the new Residual Materials Management Policy. All organic waste will have to be composted as it will be forbidden, from that moment on, to dispose of it in landfills. This policy aims to recycle 60% of putrescible organic waste by the year 2015. The City of Montréal has already begun investing in the construction of two composting facilities, located in St-Michel and Dorval, scheduled to begin operations by 2014. In 2009, a mere 10% of these waste materials were recycled.

Composting will help reduce greenhouse gases (GHGs) and significantly diminish the amount of liquid waste, thus preventing contamination of the water table. Some people pay to have their organic waste materials recycled. There are some organizations in Montréal that meet the needs of those who already wish to see their putrescible waste recycled. The advantages of composting are obvious: garbage cans become smaller, cleaner, less fetid, and the compost can be used as fertilizer.

Organic waste represents 47% of the garbage bag contents of Montréalers.

Montréal innovates once more in environmental matters by proceeding to install biomethanation plants that will, in the near future, help us transform our residual materials into fuels cleaner than petrochemicals.

The search for suitable sites now over, the City is in the process of studying the ones chosen. These studies will serve as a foundation for the establishment schedule of the processing plants and for the choice of that layout blueprint that will best insure their integration into their surroundings. Also, the studies will measure the impact these plants will have on noise levels and traffic circulation.

Biomethanation plants will be located in Montréal-Est and LaSalle.

Before beginning construction of the four plants, the City will submit its projects to a public consultation led by the Office de consultation publique de Montréal (OCPM). According to data available to the City, biomethanation plants will be able to

process 60,000 tons of residual foodstuffs. As to the composting facilities, they will handle 79,000 tons of organic matter.

"We do not regret having taken the plunge," said Aldo Lermieri, Pro-Mayor of Pointe-Claire. "We have a list of people waiting to benefit from [organic waste] collection and those that already do love us for it."

"We currently live in the Golden Age of the personal automobile. Over the next few years, 30 years at the most, we will go through a deep energy crisis when petroleum ceases to be a plentiful resource." —Au bout du pétrole, Normand Mousseau.

"We are therefore witnessing the dying years of a combustible fuel that made the West prosperous and upon which we based our culture and our lifestyle. And what of the electric car? Converting 800 million cars to electricity is unthinkable. According to Normand Mousseau, Canada Research Chair in Computational Physics of Complex Materials, the next century will see transportation in a very different light than that in which we do today. We will have learned to structure our transit methods around renewable resources and we will make use of technology as often as possible in order to avoid travelling—for example, we will opt for virtual meetings rather than hold international conferences. Public transit as well as walking and biking, with or without motorized assistance, will become the order of the day. One of two things will happen, says Gérard Beaudet, Director of Urban Studies at the Université de Montréal: either we will have discovered new means of propulsion for our vehicles or the idea of a personal car will be abandoned altogether, in which case the great suburban areas, particularly those more than 30 kilometres from the downtown core, will be forsaken. The two-car families of the distant suburbs will have sold—at a loss—their home and established themselves closer to their workplace. Progress, perhaps, for enemies of the automobile, but a hard blow to the economy. We are given to think that humankind will have learned to adapt before reaching that point." -Normand Mousseau, Au bout du pétrole; Mathieu-Robert Sauvé, Le futur prêt-à-porter: Comment la science va changer nos vies.

What do you think of composting?

Would you support the financing of composting facilities through a residual materials collection and haulage fee?

Do you think such a fee ought to be established according to the volume of your waste materials? Or would you prefer a fixed, flat-rate fee for all households?

WATER CONSUMPTION

Land of 4,500 rivers, Canada is a great water consumer. Abundance seems to make us forget that not all are so lucky, and that this resource must be protected. A huge 25% of the world's cities have no access to safe drinking water or to decontamination facilities. These unsanitary conditions are the first cause of mortality in the world. We must manage our water resources responsibly so that the greatest number of people may benefit from them.

For this reason, the Québec government will implement measures aiming to reduce water consumption by 25% by the year 2017. In order to achieve this goal, it asks that municipalities do their part. Starting early next year, the provincial government will require municipalities to provide both a water consumption assessment and a water consumption reduction plan. It also intends to impose mandatory installation of water meters on industries, businesses, and institutions should it fail to meet its goal by 2017.

In France, average water consumption is 150 litres per person per day. The French are billed on average 312.37 € for 120 m³ of water. In Nancy, for instance, people pay 3.32 € per cubic metre. At a rate of 800 litres per day per person, Quebeckers are the second largest group of water consumers in the world. If we wish to commit to sustainable development so that future generations may enjoy a good quality of life, we have to better regulate our water consumption. Montréal, like every other municipality, must find a way to do this.

What strategies have you got in mind to reduce water consumption?

ANNEX

ACHIEVEMENTS—HONOURS, PRIZES, AND AWARDS

- Montréal Transportation Plan Copenhagen Climactic Leadership Prize;
- Lachine Canal bike path ranked 3rd best in the world by Time Magazine;
- STM ranked one of the best transit authorities in the world (2010)
- In 2009, BIXI won the Edison Gold Award for most innovative product in the Energy and Sustainability category and the IDSA International Design Excellence Bronze Award in the Transportation category;
- Lowest fares in North America, high ridership;
- Ridership leader in Canadian and U.S. cities, with 140 trips per person per year;
- Personal vehicle ownership index of 0.4 vehicles per person (lower than in the
 U.S.A. and other Canadian cities but higher than in Europe);
- Car-sharing: "Montréal relies on the presence of one of the leading car-sharing enterprises in the world, ranked first in North America, with 12,000 subscribers."¹³;
- #747 Express bus service between Montréal-Trudeau International Airport and downtown Montréal;
- "Between Stops" service;
- Lowering of speed limit in residential areas to 40km/h.

-

¹³ *Transport Plan* 2007. p. 37