

AIR EMISSIONS

As you know the **Montreal Department of Public Health** issued their 2006 Annual Report based on **Traffic and Health** (authors Louis Drouin and Norman King) drawing on studies from across Canada and around the world. The conclusions and statistics of this report warn roughly ¼ of Montreal island households and families that the air we breathe, the water we drink and the soil we rely on is degraded significantly from automobile exhaust, rubber tire particulation (fine-particulate and molecular breakdown products in air), asbestos (most vehicles still on the road) from brake emissions and decomposition of asphalt surfaces is likely to produce illness in statistically measurable form.

RESPIRATORY DISEASE

The Turcot interchange has the worst concentrated traffic levels (260,000 cars per day) across Montreal but only represents a small part of this overall regional pattern of human and environmental health degradation by our manic use of the automobile. The **east-west traffic of highway 2-20 accumulates toxic emissions for 20 kilometres** (recognisable emissions build up across this distance) without adequate plant mitigation (production of oxygen & absorption of toxins). Populations living in LaSalle, Ville-Emard, Verdun, St-Henri, Pt-St-Charles, lower NDG, Montreal West and Ville-St-Pierre have their health compromised by vehicular emissions. Do we have other feasible urban economy, design, lifestyle and technological choices upon which our population can be supported?

BICYCLE COMMUTE THROUGH EMISSIONS

Commissioner Anne-Marie Parent asked me to make this submission to the BAPE Turcot. I live with my family in LaSalle (wife and 3 children) at Jardins LaSalle (the Heights) next to the Lachine canal, west by 1 ½ blocks from auto-route 138 to the Pont-Mercier. I travel to Montreal by means of the Lachine Canal bicycle path frequently for business and pleasure. However we realise we are breathing toxins from traffic congestion along the 20 and in the Turcot valley. As I have lived in Los Angeles, once suffering a week of breathing difficulty from bicycling in traffic, worked in pollution control and health and safety for both unions and companies (pulp, paper and forestry), I'm aware of specific contaminants, comparative pollution levels and hazards. I've attended two sessions of the BAPE Turcot, the last being on Monday, 11th May, 2009. I've worked with the Sustainable Development Corporation for 15 years now as coordinator of projects.

ERGONOMIC BIO-CYCLE

BIO-CYCLE with 13 ergonomic aspects from head to toe should be able to replace the car for most urban, suburban and rural personnel and medium goods transport in all 4 seasons. Concordia Mechanical Engineering Vehicular Ergonomics chair Subhash Rakheja, Quebec Lung Association Louis Drouin, Service de Police de la Ville de Montreal SPVM Cycle Patrol (250 patrollers) Jean-Francois Cimon Health & Safety CSST officer, Independent Messengers of Montreal Tom Ostreiko, Montreal Executive Committee member Andre Lavallee, LaSalle mayoress Manon Barbe, Ste-Anne-de-Bellevue mayor Bill Tierney and Bernie Shalinsky, Ergon Consulting are supporting the Bio-Cycle research among other engineers, designers, urban planners. Guru Bikes an advanced racing bike builder of Laval is interested to build the first prototype.

ECOLOGICAL-CULTURAL REMEDIATION

In recognition of this seemingly overwhelming degradation, that I am writing to share SDC-CDD's **ecological-cultural remediation** through elemental, ecological, economic and ergonomic design. We're a group of architects, engineers, urban planners, designers, professors and citizens of the greater Montreal region. As you can see from our letterhead, "*Building Livelihood for stronger communities*", that while we have environmental 'objectives' as an organisation, this is accomplished through our development of 'subjective' **livelihood** practices. We are concerned with how people can feasibly move forward with today's infrastructure, yet make a living in harmony with the environment.

MULTI-LEVEL ORCHARD ABUNDANCE

Transportation plays a role in our society by bringing goods, services & people from distant locations to compensate for failings in or enhance local resource capacities. Roughly 1/3rd of the former Montreal city limits are paved over by road and railway right-of-ways, 1/3rd by housing and other buildings with 1/3 available as nature. These ratios show transportation as a dependency artificially supporting cultural lack of ecological regeneration. First Nations of the Americas cultivated local resource capacity and circumvented destructive transportation through their cultivation of vertical (3-Dimensional) multi-level orchard and food producing plant species. The oak (Jacques Cartier remarked upon the size of Hochelaga acorns in his reports), butternut, cherry, peach, hickory, grape vines and hundreds of other tree or vertical species produced goods and services in abundance one hundred times that of 2-D 'agri'-culture (Latin = 'field').

IMPERIAL CONTROL THROUGH SCARCITY

'Field' or 'agri' culture, the foundation of colonial civilization since the days of Babylon, Semite, Egypt, Greece, Rome, Europe is based on cutting of 'indigenous' (Latin = 'self-generating') orchard abundance so as to control populations through scarcity. The destruction of Europe's once abundant multi-level orchards (the word 'Druid' means 'wisdom of the oak or tree') sylvalization (tree culture) of the Celtic peoples of France and England by Roman imperialism 'civilization' disturbed populations there to invade Quebec in search of resources. Hence 'exogenous' (Latin = 'other-generated') peoples destroy and cause subsequent populations to become destroyers. Canada is a net importer of food, because we don't handle our landscape productively. Our monoculture exploitation of third world communities and land is destroying eco-systems including water pollution, waste, desertification, air pollution and land sterilization (salination, toxification) etc.

MULTI-LEVEL ORCHARDS

Montreal island see map at <http://cbcd.geog.mcgill.ca/WIP.html> **Tsi Tetsionitiotiakon Sustainability Rooted in Heritage** was covered by 45 canoe passable rivers joining ten lakes. The orchard tree holds and develops the soil, retains water, produces oxygen, stores complex synthetic toxins for hundreds of years as the toxins break down into more inert forms and draws moisture laden winds from the sea and continental sources. Orchard forests attract warm moisture laden sea airs to 'cold' forested areas. Photosynthesis in multi-level orchards as characterised most of pre-Columbian Turtle-Island, North-America, absorbs 92 – 98% of solar energy. 60% % of moisture transfer from the sea to land is based in condensation on leaf and other bark surfaces. 40% of water comes as rain and then only if these photosynthesis induced climate patterns are 'bio'-induced (tree). When orchard-forest areas are cut for ship-building and agri-culture as colonists have done in Montreal and around the world, then fields only absorb 2 – 8% of solar energy. The reflected energy heats continental air and causes it to push outwards towards the sea. Orchard root systems pump water from as deep as the canopy is tall (10s of metres), mining substrate minerals to the surface and create nutrient colonies which feed the surface production.

CLIMATE RESOLUTION

Each tree multiplied by millions acts as a heat pump pumping excess summer heat into the ground through root systems and then drawing on this stored heat during winter and thus significantly moderating climate extremes. Agriculture and the suburban lawn send roots down only centimetres into the soil leaving the rest of the substrate to hard compact out of human and nature's benefit. It is significant that our education and cultural systems tell us the exact opposite maintaining agriculture as abundance rather than scarcity. We are hook-winked by our ignorance and a short sighted greed. Tall orchard forests moderate climate locally, continentally and globally. To mitigate climate extremes that are causing the worlds deserts to expand, we will produce food locally on trees and absorb the sun's energy through bio-mass in healthy bio-regions. Deserts do not afford this luxury directly.

BENEFICIAL TRANSPORTATION WITH NO ECOLOGICAL IMPACT

Through using the canoe, First Nations were able to cultivate the richness of the land for human and interspecies benefit and waterways without transportation impacts. Archaeology shows First Nations knew about the use of wheels as exemplified by toys with wheels but didn't use them. Canoes travel down with the current and travel back along the shoreline eddy-back-currents. I know this from years living and commuting by canoe on rivers and lakes. Before the conquest First Nations would hold canoe regattas with hundreds of canoes in synchronised water-dance spectacles. Through intimate canoe contact with water systems, indigenous peoples worldwide have been their stewards.

INTELLIGENT TRANSPORT SYSTEMS ITS

Today these choices are characterized by what is called '**Intelligent Transport Systems' ITS**, which plan and calculate transportation's role for the meeting of human needs. ITS reduces transportation through 'cultural-economic' urban and rural planning or practices. Transport represents movement of goods, services & human resources to satisfy livelihood, however from the previous discussion one understands that the factors involved are determined by a host of cultural factors and particularly the continuing colonial patterns we govern us. Trees produce food without continuing destruction of third world ecologies, lower our ecological footprint locally & abroad, mitigate water absorption and release (balance) into natural systems, humidify air, oxygenate air, absorb carbon dioxide / monoxide, burnt-hydro-carbons and other air-borne toxins, absorb water table and river toxins, build soil.

LAC À LA LOUTRE (OTTER OR BEAVER LAKE) HOCHELAGA

While it is difficult to remove ourselves from an artificial style of living during Turcot's rush our, we can imagine its beginnings. The valley of the Turcot held a lake 7 kilometres in length and ½ km wide at the foot of the Falaise St-Jacques and Cote-St-Remi escarpments. Lac-a-la-Loutre is 7 km from its termination at Atwater Market (so named because of the lake) to its Ville-St-Pierre beginning. From the western side of Mount-Royal Westmount including Notre-Dame-de-grace, Cote-St-Luc, Montreal West, Ville-St-Pierre streams culminated first westwards and then south into riviere-St-Pierre eastwards down past VSP into the valley of the Turcot and into Lac-a-la-Loutre, which then flowed by canals eastwards to the port of Montreal and a branch leading south towards Iles-des-soeurs. Beaver Lake's & riviere-St-Pierre's westward end connected by canals as well to Lac-St-Louis so as to provide a calm canoe bypass of the Lachine Rapids. The south-facing escarpment represents a typical priority building site on which First Nations gave priority to developing their main communities across North America. According to J. Cartier's estimates of Hochelaga's distance from the St-Lawrence river, the long south facing St-Jacques escarpment is a highly likely site for the ancient city given the A) highly productive lake, B) continental transport link, C) south-facing building site, D) rich soils (estimated at 85 feet deep) and Montreal island's continental confluence of the Ottawa, St-Lawrence Chateauguay and Richelieu rivers, E) One translation of 'Hochelaga' from the Iroquois as 'At the beaver dam', F) This site on Montreal island being its warmest climate and for all of Quebec.

We give our full support to Jean Fortier's plans to redevelop Lac-a-la-Loutre as a park and recreation facility for a renewed spiritual heart for Turcot valley, Montreal island and the new hospital center.

CONTINUING THE VILLE-MARIE TUNNEL TO VILLE-ST-PIERRE

The Turcot is only an effect of motorized lifestyle used to compensate for colonial scarcity. We have few opportunities if we continue to subsidize this unproductive earth and human livelihood capacity destroying motorized lifestyle. Build highways and drivers will drive more in greater numbers. The reconstruction of the Turcot can be done at less cost and greater benefit. If the present plan to build a step design of highways and sound-barriers next to the St-Jacques escarpment is converted to a two story highway east on top of west-bound and a roof on top of the east-bound, or two tubes like the Ville-Marie then, we will benefit from a highway that needs no salt application and no ploughing during winter months. Montreal's Ville-Marie is an early successful example of a world-wide movement towards restoring human health and recapturing history and neighbourhoods. The Ville-Marie would be continued single or double story from its present tunnel west to the Decarie and then west to Ville-St-Pierre. There are plans to tunnel the Decarie autoroute further increasing public health.

WORLDWIDE TUNNELLING OF HIGHWAYS

In Boston http://boston.com/beyond_bigdig/ &

Paris http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VH3-3Y1CDY4-G&_user=458507&_rdoc=1&_fmt=&_orig=search&_sort=d&_view=c&_acct=C000022002&_version=1&_urlVersion=0&_userid=458507&_md5=8927ec6c5be6f3271dcae0b38c5d5f3c major tunnelling of highways are converting open-air highways into hidden arteries. Building tunnelled highways along hillsides employs the structure of the hill to lessen structural reinforcements (compared with open air construction). Operation and maintenance costs of maintaining the tunnels are expected to pay for themselves within 10 years compared with continual degradation on open air highways. Car drivers faced with their own emissions will soon be looking to convert to electric and hybrid vehicles. The many hundred of thousands of people who live adjacent to the 2-20 highways from the Ville-Marie to Ville-St-Pierre will recover health and a healthy environment. Orchard trees can be planted on top of the tunnels, Lac-a-la-Loutre redeveloped and the key territory of Montreal's urban geometry can be restored and make Montreal back into a flourishing city again. Within a decade as the following program of ITS cultural-economy is developed, traffic will greatly diminish by as much as 90%. At this point part of the tunnels are converted into Metro or tunnelled Street-car public transport tracks.

ORGANISING COMMUNITY WELCOME

Welcoming inclusive relational economy planned collaboration & governance among ourselves entails a deliberate plan of cultural-economic development. Welcome allows humanity to work together in peace and ecological harmony. The Sustainable Development Corporation has developed a program of cultural generation through the following projects:

1. **EXTENDING OUR WELCOME CONNECTED MULTIFAMILY CO-HOUSING** Proximity empowers communications & resources use. **'Indigenous' (Latin = 'self-generating') economy** facilitated by accounting recognition & values in currency, capital, condolence-social security, conveyance-diplomatic, collegial apprenticeship, communication recognition. 'A-part-of' rather than 'a-part-ment'
2. **HOLISTIC RELATIONAL ARCHITECTURE Ste-Anne-de-Bellevue Water Tower** 1st Nation Student Residence living language and cultural center. Elemental Design retrofit into ecological self-sufficient building commissioned by city. Funded by Canadian Mortgage & Housing Corporation.

3. **RELATIONAL ECONOMY: PETITIONS OF SUPPORT:** LaSalle-Verdun Uniting family buying and investments to support Grocery, Supermarket and Restaurants, Frequent Buyer Programs for local business through Consumer Associations.
4. **BOTH SIDES NOW, EQUAL – TIME RECORDED–DIALOGUES** for family business, institutions, groups & organisations based in dialectic exchanges among researchers & individuals in Research & Conflict Resolution. . Published dialogues provide a formal interpersonal and community channel for grievance resolution and an alternative to war.
5. **NON-PROFIT CANADIAN PARTICIPATORY MULTI-STAKEHOLDER INCORPORATION** Recognition & distinction for Founder, Worker, Supplier and Consumer member contributions. Four groups rebuilding connected intelligence for responsible social economic contracts in holistic economy.
6. **GREEN ELEMENTAL, ECOLOGICAL, ECONOMIC, ERGONOMIC DESIGN** Participatory multi-stakeholder business & organisations achieving integrated products & processes. Responsible owner-member invest-ment for corporate governance. A. Ergonomic Bio-Cycle with 13 aspects at Concordia University Mechanical Engineering. B. Modular Room Divider Multi-functional Wall Panel desk, cupboard, shelves, drawers, seats dispensers. C. Super-efficient fridge. D. Green plant, vermi, bacteria, Bio-digestion urine-fecal separating no-flush composting toilet. E. Coconut shell bird flock houses. F. Stridewheels for local transport. G. Gravity-fed dry food dispensers.
7. **FOOD SECURITY THROUGH INDIGENOUS WELCOME & ORCHARD FOOD PRODUCTION EFFICIENCIES** 3-dimensional orchard production is 100 times more abundant than 2-D ‘agri’ – (Latin meaning ‘field’) culture for a range of ecological services. The multi-level canopies of orchards absorb between 92 – 98% of solar energy while field crops only absorb 2 – 8%. Tree roots descend 10s & 100s of feet into the substrate while field crops only descend inches to short feet.
8. **INDIVIDUAL/ COMMUNITY LIVELIHOOD SOLIDARITY “Becoming the change that we want to see in the world”, Mohandas Gandhi.** Welcoming each other, through our diverse labours & joining our strengths together for livelihood through share systems, building solidarity, inclusive economy, community & housing where everybody can give & receive.
9. **ECO-MONTREAL TIOHTIAKE GREEN MAPPING** since 1994 www.eco-montreal.mcgill.ca Canada’s first greenmap part of the worldwide www.greenmap.org with 500 communities.
- 10.1ST **NATION PLACENAME MAPPING TIOHTIAKE (Greater Montreal region).** ‘Tsi Tetsiontiotiakon Sustainability Rooted in Heritage’ mapping baseline ecology <http://cbed.geog.mcgill.ca/WIP.html>
11. **MAPPING COMMUNITY HEALTH & ENVIRONMENT** example: New Brunswick Climate Change HUB & Lung Association www.nbhub.org with the NB Lung Association since 1999.
12. **ECO - INDUSTRIAL EFFICIENCIES** Members working in Canadian industries are engaged in implementing a whole range of ecological design & environmental governance processes

We hope the BAPE will add cultural welcoming factors to planning for the Turcot interchange as well as an Intelligent Transport System for the greater region of Montreal called Tiohtiake in Mohawk for Montreal archipelago ‘Place where the nations and their rivers unite and divide’.

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Cartographie Écologique Eco-Montreal Tiohtiake Green Map www.eco-montreal.mcgill.ca
Tsi Tetsionitiakon Sustainability Rooted in Heritage <http://cbed.geog.mcgill.ca/WIP.html>
Sustainable Development Corporation: website part of the Ecoplan site: <http://ecoplan.mcgill.ca>

-----Message d'origine-----

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À : Gélinas, Monique (BAPE)

Objet : Turcot, Systemes de transport intelligent

J'espère que nos SDC-CDD démarches multi-disciplinaire peuvent supporter les mêmes approches de la commission vers un science naturel de la culture humaine multi-lateral incluant le transport comme un aspet à intégrer mais de ne pas créer dépendence physique comme un solution aux laçunes systématique.

1. En offrant nos bienvenus éco-habitations connecté <http://ecoplan.mcgill.ca>
2. Architecture relationnel holistique. Maintenant à Ste-Anne-de-Bellevue nous avons un projet de convertir le vieux Tour d'eau de la ville en résidence pour les étudiants autochtones des Iroquois (Mohawk, Wendat etc), Algonquiens (Cree, Ojibway, Abenaki etc.) et Inuit ou ils peuvent pratiqué leurs langues et culture aussi que influencer les curriculums de leurs CÉGEPs et Universités.
3. Économies relationnels, inscriptions de support pour affilier les consommateurs en fidelité (Programmes d'acheteurs fréquante) avec leur épiceries, supermarchés et restaurants.
4. Les deux côtés ensembles, dialogues raccordé à temps égales pour faciliter la recherche communautaire et résolutions des conflits.
5. Incorporation de participation multi-parti-prénants à but non-lucratif pour rejoindre les forces des parti-prénants en communauté. [Indigène en partage de notre gagne-pain.](#)
6. Design verte élémentale, écologique, économique et ergonomique **incluant:** Bio-Cycle ergonomique avec 13 aspets tête à pieds au département génie mécanique université Concordia. B. Panneaux murs modulaire en dévision des chambres multi-fonctionelles avec bureau, armoires, tablettes, tiroirs, sièges, distributeurs alimentaires par gravités. C. Réfrigération super-éfficace. D. Plantes verte, vermi, bacterie Bio-digestion urine-fécal séparant sans l'eau d'évacuation toilet de compostage. E. Nid oiseaux fabriqué des noix de Coco nut shell bird flock houses. F. Roues en cours Stridewheels pour un transport locale & plus.
7. Sécurité alimentaire fourni par la production efficace des vergers à plusieurs niveaux et l'accueille indigène.
8. Cartographie des noms des lieux indigènes Avant l'invasion des Européens, la vallée du Turcot était couvrée (lien en bas sur [Tsi Tetsiontiakon Sustainability Rooted in Heritage](#)) par un [lac à la Loutre](#) 5 kilometres par 1/2 km qui a drainé la territoire de Ville St-Pierre,

Montréal Ouest, NDG, Côte St-Luc, Westmount par rivière St-Pierre. Un traduction important pour le nom de la ville Hochelaga est 'proche du barrage du castor'. Le mot 'loutre' était utilisé pour appelé le 'castor' à cet époque (1535). Avec le lien par canot entre la port de Montréal et lac St-Louis. Montréal était couvré par 45 rivières et 10 lacs (<http://cbed.geog.mcgill.ca> Sustainability Rooted in Heritage) a cause de la politique alimentaire autochtone fourni par la cultivation des grandes arbres avec noix (glans des chaines etc.), fruits (cerises, peches, prunes etc.), raisins etc. Les arbres ont produisé un abondance de nourriture, sol, conservation de l'eau et production de climate stable.

9. Cartographie Éco-Montréal Tiohtiake www.eco-montreal@mcgill.ca qui appartiens du système mondiale Green Map System www.greenmap.org

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Cartographie Écologique Éco-Montréal / Eco-Montreal Tiohtiake Green Map

www.eco-montreal.mcgill.ca

Tsi Tetsionitotiaakon Sustainability Rooted in Heritage

<http://cbed.geog.mcgill.ca/WIP.html>

Sustainable Development Corporation: website part of the Ecoplan site: <http://ecoplan.mcgill.ca>