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Lourdes Flores, PhD. is a professor at the Department of Territorial Planning, BUAP - Benemerita Universidad Autónoma de Puebla, Mexico.

PROGRESS TOWARDS SUSTAINABILITY IN URBAN PLANNING: SAN FRANCISCO AND MONTREAL

LOURDES FLORES

The most important paradigm shift for planning in this third millenium is towards a sustainable urban development. Lourdes Flores discusses some of the results of her research project in which she has the collaboration of the University of Montreal and Cal Poly's CRP. Through a comparative and qualitative approach, she investigated how the cities of San Francisco and Montreal are pursuing policies and management frameworks that support sustainability.

Throughout the world, cities are promoting sustainable urban development practices and experimenting with new forms of governance and resources conservation. This paper discusses our research on experiences in Montreal and San Francisco to assess progress in sustainable urban development practices.

There is a new vision of urban planning that advocates for compact and complex cities (CCC). Reviewing several authors, Da Cunha (2005) underlines the environmental, social and economic benefits of urban densification and land use diversification (housing, labor, infrastructure, recreation). According to these authors, CCCs create more coherent spaces that limit traffic and reduce energy consumption and pollution. These authors also agree that such spaces should be equipped to encourage pedestrian mobility (a walkable city) and increase greenways; that they should be enjoyable and accessible, (a livable city); and, last, that they should be distributed equitably throughout the city.

Sustainable urban development supports the CCC approach by discouraging car use (increasing car ownership and parking fees or taxing the access to central areas of the city), calming traffic (reducing the number of lanes for cars, installing speed reducers, etc.) and enhancing the use of public transport and other forms of less-polluting mobility such as cycling, motorcycling, walking, etc (Newman & Kenworthy, 1999).

In order to approach sustainable development, it is essential that all the stakeholders work together to build a city based on the common interests and needs of its inhabitants. As stated by Ascher (2007), the public decision making processes must consider the views of all stakeholders, at all stages, creating new ways of thinking for the implementation of these. Using this perspective, efforts are being made to operationalize the sustainable development through balanced actions agreed with all the stakeholders involved.

To examine aspects of this emerging framework we conducted a qualitative evaluation of progress towards sustainability through a comparative research project *Sustainable Urban Management and Planning in North American Cities*.¹ San Francisco and Montreal, two similarly populated cities, are pursuing policies through their urban plans to promote sustainable urban development. The objective of this paper is to present the main results of this research project. The principal references for the analysis were, in the case of San Francisco, the General Plan (1999) and the Climate Action Plan (2004) and, in the case of Montreal, the Urban Plan (2004) and the Strategic Plan for Sustainable Development (2005).

The methodology of the research

The study is based on three main elements: analysis of existing governmental documents -mainly the urban and environmental plans; semi-structured interviews with key stakeholders involved in the plan's elaboration and implementation processes; and direct observation of the characteristics of selected urban projects.

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¹ Project Sustainable Urban Management and Planning in North American Cities, registered at the Interinstitutional Studies Program on North America (PIERAN) of the El Colegio de México (COLMEX)

To evaluate the sustainability process we adopted Patricia Lombardi and Peter Brandon's multimodal evaluation procedures (2007: 47-64) regrouped into four dimensions: social, environment, economic and governance. The social (welfare) dimension refers to the social integration, social cohesion, and social exchanges in aesthetic, harmonic, attractive and safe spaces, offering services and facilities to meet all basic needs. This dimension includes the preservation and development of cultural and historic spaces, and the variety of alternative modes of mobility and accessibility. The environment dimension uses the principle that urban planning must take steps to reduce environmental pollution by means of the rational use of energy sources and renewable and non-renewable resources, and to promote and encourage the conservation, protection and regeneration of the environment. The economic dimension refers to the need for urban planning to evaluate the ways of financing projects and clearly define the distribution of burdens and benefits among the stakeholders, and moreover to optimize the land use and densities, promote proximity between housing, working, trading, leisure and cultural spaces. The governance dimension addresses authorities' responsibility and leadership to promote more democratic forms of governance. This is accomplished by creating transparent mechanisms supported by policies, laws, institutions, etc. that facilitate dialogue and communication between all the members of society on the actions proposed by the planning function.

Following the example of Lombardi and Brandon, we evaluated all the dimensions with the PICABUE³ criteria: futurity, equity and environment. However, unlike Lombardi and Brandon, we did not consider public participation for the three dimensions of sustainable development, but integrated it into the dimension of governance. With this adjustment, we avoided redundancy and emphasized the importance of public participation in the governance process.

It is worth noticing that separating the urban sustainability elements in order to evaluate them represented a great challenge, as the interrelationship between them is very close. The issue of mobility, for example, addresses environmental elements (air pollution, noise, use of natural resources, etc.), social elements (accessibility to different means of transport), and economic elements (the reduction of non-renewable resources use has economic benefits).

Results of the research

Both cities have achieved a significant breakthrough in sustainable urban city development, especially in environmental matters. Concerns over climate change are present in their urban policies and environmental plans that seek primarily to reduce emissions of greenhouse gases and increase recycling and use of renewable energy.

San Francisco has made outstanding efforts regarding environmental issues. One of the most prominent has been the formalization of the Green Building Ordinance - GBO (2008) whose precedent was the LEED certification, that imposed strict new green building requirements on newly-constructed residential and commercial buildings, and renovations to existing buildings. Before such requirements, one of the biggest challenges remaining is to transform existing buildings into green buildings (Crowfoot: 2008).

Another notable San Francisco effort has been the development of the Electricity Resource Plan (2002) and the Climate Action Plan (2004), whose main goal is to reduce emissions to 7.2 million tons ECO₂ by 2012 (20% below 1990 levels) (City of San Francisco 2004, ES-4). This goal has led San Francisco to develop and update policies for sustainable mobility in order to increase pedestrian and bicycle routes, and encourage public transport use, ridesharing, green cars, etc. Despite the steep topography of San Francisco, its bicycle plan of 1997 was updated this year (2009). Moreover, alternative technologies use, among them, photovoltaic

³ PICABUE is a model of sustainable urban development that includes four analytical dimensions: ecological integrity or quality of the environment, equity of access to resources, public participation or the ability to influence decisions and futurity or the future implications of decisions made in the present. The PICABUE model derives its name from the seven steps that must be followed on the indicators construction (Mitchell et al 1995, apud Bahia, 2009)



Figure 1
Solar cells at Plaza
Apartments, San Francisco.

panels use, in places such as the Plaza Apartments (Fig. 1), is encouraged through policies that offer rebates for the installation of solar electric systems.

San Francisco currently recycles 70% of what it produces and has set the ambitious goal of zero waste by 2020 (City of San Francisco 2004, 3-35). To achieve this goal, the Environment department has developed and is implementing innovative city-wide recycling and composting programs. In addition, each department of the City of San Francisco has its own energy budget.

Meanwhile, in 2007 Montreal developed the Transport Plan to discourage car use. Among its most notable achievements is the construction of 140 km (87.5 miles)

of bicycle routes (City of Montreal, 2009 a & b) and the implementation of the BIXI system that offers 1,815 rental bicycles and 300 bicycle parking spaces, so that within two years the use of bicycles in Montreal will have increased dramatically. Currently, the city of Montreal is elaborating a plan for the management of residual materials 2010-2014, establishing as a key objective the reduction of waste materials (currently, the island recycles only 30% of its solid waste) (City of Montreal 2008: 17).⁴

Montreal promotes green-city living through various policies among them the Tree Policy and the Protection and Valorisation of Natural Resources Policy. The city also has nine eco-territories on the island intended to generate a regional network of natural parks, and also encourages the development of eco-neighborhoods through a program consisting of financial support to community organizations wishing to realize, at the neighborhood and district level, activities of various kinds: cleaning, environmentally sound management of solid waste, and the embellishment and improvement of biodiversity heritage (City of Montreal: 2002).⁵

Public awareness on environment care has been a central concern in both cities. San Francisco implemented several educational campaigns focused on raising awareness among vulnerable groups about environment care (Chien, 2008). Meanwhile, Montreal made outstanding efforts on this issue which is the topic of two of the ten guidelines of the Strategic Plan for Sustainable Development. The first relates to mobilizing Montreal organizations and residents to work toward sustainable development of the metropolitan area, and the second to maintaining the action of those involved in education and environmental awareness. Campaigns like a Day without Cars, the Fair of the Bicycle, the Day of the Clean Air, and the guided tours offered by the St. Michel Environmental Complex to disclose, among other things, the solid wastes recycling process, have been well received by Montrealers.

However, while sustainable mobility is one of the most addressed issues in the urban plans of both cities, the increasing car use remains one of its biggest challenges. In San Francisco, according to General Plan 1999, the ratio of car use relative to other means of transport increased from 38.5% to 40% between 1990 and 2000, while in Montreal it increased by 3% during the period 2004-2008 (City of Montreal, 2009a: 85)

Both in Montreal and San Francisco, affordable housing is driven by strategies and policies. Both cities require developers to build 30% of affordable housing within their projects (from 200 homes on, in Montreal) and encourage this housing to be eco-energetic.

⁴ This plan proposes 49 actions to improve management practices of waste materials with emphasis on reducing the consumption of resources, recycling and composting. It also suggests increasing the number of eco-centers (collective equipment for recycling and composting).

⁵ There are currently nine eco-neighborhoods in Montreal

The plans of both cities contain guidelines to encourage mixed-land use, densification, urban recycling, environmental preservation, etc., measures that, in addition to improvement of the quality of life for residents, help optimize economic efficiency. The projects seek to follow the guidelines of the plan: recycling, affordable housing, mixed use of land, public spaces, and public participation in the project design process.

In some projects the three elements of urban sustainability have been integrated as in the case of Benny Farm (Fig. 2) in Montreal and the Plaza Apartments in San Francisco. In Benny Farm, buildings were constructed following the principles of ecological construction, reusing and recycling as much as possible the demolition materials.

The buildings are also equipped with a geothermal system and solar panels allowing 75% of energy to be transformed in situ and then redistributed by shared green infrastructure. Besides, the formula of cooperatives ensures the accessibility of housing and allows the residents to participate in the administration and in the management of their cooperative, and the introduction of a second mortgage limits the speculation in case of resale of the affordable housing. (Ayadi, 2008). In San Francisco the old and deteriorating Plaza Hotel was demolished and replaced by a new mixed-use building: Plaza Apartments, aimed at residents with the lowest income. This building contains 106 affordable new mini-studio-apartments, support services, residential amenities, commercial space and a entertainment community theater (Friedman, 2007).

Nevertheless, one major challenge for policymakers is the financing of projects. According to Ducas (2008), in Montreal, an economic strategy is needed to finance projects and set priorities for their implementation. In the case of San Francisco, the Redevelopment Agency (responsible for implementing urban renewal projects) gets most of its funding from the property taxes (using a tax-increment method allowed under state law), but in economic circumstances like the current global economic crisis, the situation gets complicated. Added to this, the increased cost of construction and the long decision-making processes⁵ make the projects more expensive and difficult to obtain financing (Evan, 2008).

The opening of communication links to bring the healthy governance and participation of all actors in decision making arises in the plans as a means to achieve a more sustainable city. In this perspective, Montreal has developed various tools to encourage citizen participation⁶ and has a Public Consultation Office (OCPM by its French acronym) responsible for carrying out the mandates of public consultation concerning the City of Montreal, in addition to the public consultations undertaken by districts and some promoters. San Francisco, instead, does not have a specific agency for the formalization of public consultation, but public participation, involving the public sector and the private partnerships, is still very important. Although there are no specific instruments, the Government Code 65583 (c) (7) provides that “the local government shall make efforts to achieve public participation of all economic segments of the community in developing the housing element, and [that] the program shall describe this effort” (City of San Francisco, 2009a). However, in both San Francisco and Montreal, several interviewees expressed reservations regarding the fact that encouraging everyone to give their opinion, negotiating until most stakeholders have agreed, tends to foment bureaucratization, but at the same time there is an awareness that this is the best way to work and promote democratic planning.



Figure 2
In the foreground, community garden (with vegetables for local consumption), and in the background eco-energetic buildings at Benny Farm Neighborhood.

⁵ “In some ways, sometimes, we are overly democratic about things that don’t matter that much [...] we actually agree on 98% of a plan but we spent two years arguing about the last 2%” (Evan, 2008)

⁶ Among which the Charter of the city of Montreal (updated in 2006), the Toolkit for private, public and collective developers, the public participation and consultation policy of the city of Montreal (updated in 2002) and the Declaration of Principles of the Montréal community regarding sustainable development (2003)

Moreover, we noticed a lack of communication between government departments and between the authorities on the different scales of planning. In San Francisco, members of different departments acknowledge that they ignore the work being done by other departments and that it would, in theory, be important to perform teamwork, but that it is, in everyday practice, a major difficulty. To be able to articulate urban projects with regional planning, coordination among relevant authorities is a condition; however in practice it is almost nonexistent. According to Ducas (2008), in Montreal, there is no coordination at the regional level; each municipality conducts its own projects independently. However, respondents from both cities agreed that the Internet is at least a means to learn about the work of other departments and what other cities are doing.

In San Francisco there seems not to be very much interest in the monitoring of plans as in Montreal. Currently the City of Montreal has developed ten indicators for monitoring the plan.⁷ According to Lessard (2008), in Montreal, the city has already begun monitoring but still needs to go further in following up the projects with more effective measurement tools for understanding “where we were, where we are, and where we go”. In San Francisco, there is no specific monitoring for the actions of the plans. According to Tam (2008), the administration is more concerned about securing what is in progress and making sure that actions are implemented as quickly as possible. However, interviewees in San Francisco agreed that a useful tool would be to evaluate the projects and decisions made.

⁷ The ten indicators are: population, new housing, affordable housing, private rental housing, jobs, travel by public transport, provision of mass transit services, automobiles and light trucks, bike lanes, and transportation of goods.

We can say that progress toward sustainability in both cities has focused its actions on reducing the effects of climate change, with a real care for nature conservation and awareness that nature is the main capital to the healthy development of cities. San Francisco with its bold environmental policies and Montreal with its stealth policies are moving away from conventional planning practices and moving towards the desired sustainable urban development. Table 1 presents the four assessment dimension scores using a weak to strong scale. Eight of the fourteen categories received a strong score for both cities. There were no weak scores given. Overall this is a very good report for the cities and provides a baseline for them which can be used for future assessment of progress.

Although in both cities urban planning does take into account the fragility of the natural environment and can employ highly qualified groups for the preparation of plans and execution of projects, the long-term perspective is often blurred by the unpredictability of contextual situations. Ultimately, implementation of projects depends on momentum, actor’s awareness and influence, and economic and political conditions.

We believe that one of the key challenges for both cities and their progress towards urban sustainability is to strengthen and develop the means to improve communication so as to achieve a more active social participation on the one hand, and a more integrative work within and outside the government administration, on the other. It is clear that we are in a time of change based on promoting a new form of culture that seeks harmony between city and nature in a spirit of equity and democracy. This research reinforces a central idea that sustainability is the balance between societal needs and nature’s capacity to meet these needs.

Table 1: Sustainability assessment of urban planning in San Francisco and Montreal

Dimension	Sub dimension	San Francisco	Montreal
Ecology	Biological (biodiversity, biomass, protection to ecosystems)	+++	+++
	Physical (energy, water, soils, land reserves)	+++	++
Social	Basic needs (home, health, education)	++	++
	Socialization	+++	+++
	Environmental perception	+++	+++
	Historical	++	++
	Mobility	+++	+++
Economic	Economy (efficacy and efficiency)	++	++
	Spatial (density, land use, proximity, mix use, localization)	+++	+++
Governance	Responsibility, leadership, commitment, vision	++	++
	Social participation	+++	+++
	Communication (diffusion and accessibility to information, communication between departments and scales of planning)	++	++
	Monitoring	+	+++
	Analysis, development and knowledge (science role)	+++	+++

Scoring

+++	Strong. There are objectives, actions, policies and planning and management tools for concrete proposals
++	Medium. There are objectives, actions and/or policies without planning and management tools for concrete proposals
+	Weak. There are no objectives or actions or policies or planning and management tools.

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