IEFS WORKSHOP

International Ecocity Framework and Standards (IEFS) Workshop

BCIT Downtown Campus
555 Seymour Street, Vancouver BC

Sponsored by

BCIT | SCHOOL OF CONSTRUCTION AND THE ENVIRONMENT

In collaboration with

ECOCITY BUILDERS

February 9, 2012

International Ecocity Framework & Standards Initiative (IEFS) Workshop, Feb 9, 2012 in Vancouver, BC

The International Ecocity Framework and Standards initiative seeks to provide an innovative vision for an ecologically-restorative human civilization as well as a practical methodology for assessing and guiding progress towards that goal (see Addendum 1).

The initiative is sponsored by the BCIT School of Construction and the Environment (www.bcit.ca/construction) and is led by Ecocity Builders (www.ecocitybuilders.org) who is developing the IEFS in collaboration with a core advisory team and an international panel of experts (www.ecocitystandards.org). There are fifteen conditions that establish the standards, and eight levels of performance. The framework helps the city assess its performance relative to the standards, with cumulative outcomes that range from unhealthy, through Green City 1, 2, 3 to Ecocity 1, 2, 3 and finally Gaia. The Gaia level represents a city that is in perfect alignment with the ecological function of its bioregion. The assumption is that a city that is sustainable within its bioregion will also be sustainable in the global ecosphere. This does not preclude trade but does require that trade be managed in a way that no-net negative impacts are incurred in either of the participating bio-region s.

The workshop built on the outcomes of a previous workshop held in Vancouver in 2010. At that time, the original concept of the IEFS was introduced and participants worked on establishing the fifteen conditions that now comprise the standards. Participants also identified the need to develop a guiding framework.

The 2012 workshop presents an opportunity to explore how the IEFS can be applied to the Vancouver context. Participants reviewed the progress made to date, including the first attempt by City of Vancouver staff, in 2011, to assess their City's performance using the IEFS (see Addendum 2). Important data gaps in the areas of soil fertility and food growing capacity were identified. Feedback from that first exercise is that the IEFS can be used to assess the City's performance, and the 2011 exercise helped to contribute to the ongoing development of ideas for how Vancouver can accelerate towards even greener goals.

Table 1

Ecocity Mapping Vancouver

This table comprised mostly City of Vancouver staff along with representatives from TransLink and BCIT. They practiced ecocity-mapping their metro area, moving from a sprawling urban agglomeration to an eco-tropolis, with tightly clustered nodes of development interspersed by naturally and agriculturally productive green space. They identified the region's major centers, small town centers, and neighborhood centers that could over time attract more density, are connected via public transit, bike and greenways, and allow for restoration of agricultural land, habitat corridors, urban streams and parks between and around them. The participants at this table reflected on climate change and forecasted impacts for the region, including along the Fraser River. Transferring development out of community locations that don't make sense to the areas identified for intense complete community development could be facilitated by a focus on development along notes and corridors that accommodate transit and jobs and connect along major trunks. Participants noted that a lot of this change is likely to happen naturally, e.g. given the forecasted challenges pertaining to climate change.

Table 2

Bio-Geophysical Conditions of the City and its Bioregion

This table was facilitated by Sebastian Moffatt, Principal, Consensus Institute and an author of Eco-2-Cities. The discussion focussed on the bio-geophysical conditions for the city as an organism. This includes finding the best ways to track and assess the urban metabolism of air, water, food, and material flows both to-and-from the city and its surrounding bio-region as well as within the city. Sebastian Moffatt presented his methodology of analyzing the material flows and forms through a Sankey diagram, an intuitive and accurate visual tool to measure exactly what goes in and what comes out of a complex system. Participants agreed that the use of flow metrics and tools such as the Sankey diagram would be valuable to ecocity development. There is also a need for simplified variables, especially due to issues of data quality. A challenge is that the material flows analysis and Sankey diagrams are good for analyzing the city's current situation, but do not define whether a city is following ecological principles of development.

Table 3

Bio-Geophysical Conditions of the City's Environment

This table was co-facilitated by Richard Register and Bill Rees. Although the City of Vancouver's development strategy is heading in the right direction, it is not possible to achieve the bio-geophysical conditions within the city in the absence of its bioregion. The City's intense urban development means it is not possible for most people to secure the food and other resources they need within the local area. Therefore, carrying capacity and distance are very important concepts. Lifecycle Assessment (LCA) is a tool that can be used to examine trade-offs between intensified development and resource dependencies that require trade with regional and international partners. A systemic approach to the analysis is needed, rather than just picking arbitrary initiatives or strategies, e.g. renewable, recyclable.

How might the framework within the IEFS apply? Sometimes the LCA data reveals counter-intuitive results. Total cost assessment is needed as the larger framework in which LCA should be undertaken. We would need a combination of lifecycle assessment and economic tools to help drive development and consumption patterns in the right direction. Global forces will help us move in the direction we want to go. Politicians and others will need to use this to accelerate the shift towards sustainability. Many incentives will automatically appear: suburbs will no longer be viable.

It is also important to establish benchmarks. For example, global ecological carrying capacity is important to know, as well as local carrying capacity. Just because things might look good at the local level doesn't meant that it is so globally. Similarly, full-cost pricing without substitution (i.e. strong sustainability) is important when assessing carrying capacity. Perhaps we should be considering the relocation of manufacturing (i.e. re-localization). We need to focus on what moves through our economy and how to reduce that flow-through.

Table 4

Socio – Cultural – Eco Citizenship

This table was facilitated by One Earth Initiative's Executive Director Vanessa Timmer. Discussion focused on the socio-cultural component of the ecocity — ecocitizens!

"We all agreed that the best indicator for the state of eco-citizenship is the strength of the community bond. While each community has their own particular culture and customs, common themes revolved around food, art, creativity, public spaces, education, easy access, and affordable housing."

It's important to remember that socio-cultural conditions are very much interrelated with physical conditions. For example, it's hard to engage with your community when there are no pedestrian areas and public spaces, but how do you get support for such infrastructure changes when everyone is used to driving their cars from their jobs to their garages? The answer is that you have to have temporary trials to show how much more fun and fulfilling life can be in closer contact with your neighbors. Convert one parking spot into a parklet and people will understand what it means to hang out in the street. Close down a street for a day and business owners will realize that it brings more people into their stores. In order to build growing eco-citizenship, changing physical spaces has to go hand-in-hand with changing mental spaces.

- Build community through architecture, planning and art that incorporates an element of surprise, special events, festivals and community events, create places where children can play (if people see it they will want more)
- Making the connection to place through history, culture. Planners and architects can engage people in the streets spontaneously as part of a community event.
- Enforceable design needs to be considered in light of relevance within the community – note one shoe fits all; adapt to different challenges
- Leadership and role models are needed across the board (e.g., economic, business, academic, political)
- Trust in indicators – e.g., Gross National Happiness indicators. Indicator qualities: credible, integrity, legitimacy. Need to capture interest by mainstream, not just more talking to converted.
- Education – alert to principles and concepts – integrate with schools
- How do we create affordable housing to support this?

Table 5

Assessment Metrics

This table was tasked with evaluating how the City of Vancouver — which has done an initial data search based on the 15 IEFS conditions (see Addendum 2) had fared in its assessment so far. An important learning from the City's early engagement in the IEFS is addressing the gaps as well as new insights that could be shared with other cities in the region. For example, data about soil fertility within the City is not well understood.

Economy-Ecology linkages are important. How could we make the relationship friendlier? We also need a way to measure and verify these factors. Perhaps we need to borrow some of the ideas currently brought forth by the economy?

INTERNATIONAL ECOCITY FRAMEWORK & STANDARDS

Annual Report to BCIT-SOCE

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Letter and Executive Summary

Jennie Moore
Director of Sustainability Development and Environmental Stewardship
BCIT School of Construction and Environment
3700 Willingdon Avenue - Burnaby, British Columbia, Canada, V5G 3H2

Dear Jennie Moore:

Ecocity Builders and the International Ecocity Framework and Standards Initiative (IEFS) would like to take this opportunity to extend our heartfelt gratitude to BCIT-SOCE for your leadership, vision, and willingness to "walk the talk" when it comes to important issues of how we build and live on this planet. Your support for and partnership with sustainability pioneers like Ecocity Builders will not go unrecognized. In fact, since BCIT-SOCE has engaged with Ecocity Builders and sponsored the IEFS, these core ideas and messages have emerged center stage on the global sustainability agenda. A Framework for sustainable development is now being called for at the highest levels, and the IEFS, with BCIT-SOCE as lead sponsor, is at the table and helping lead the discussions. So we thank you; your leadership by example and commitment to pioneering initiatives like the IEFS is helping to inform the discussions on how to make global sustainability concrete and actionable.

In this report you will find an overview of work to date on the IEFS along with outline plans for its further development. It is our hope that BCIT-SOCE will continue to be our primary partner in this initiative, and that you will furthermore consider increasing your engagement and association with the IEFS, so that together, we will more directly lead by example while furthering the goals and objectives of our organizations, including SOCE's Sustainability Framework agenda.

It is a true pleasure working with an organization that takes its commitment to the future seriously and in ways that provide inspiration to the current and next generation of city builders; in Canada, and now also throughout the world.

Sincerely,

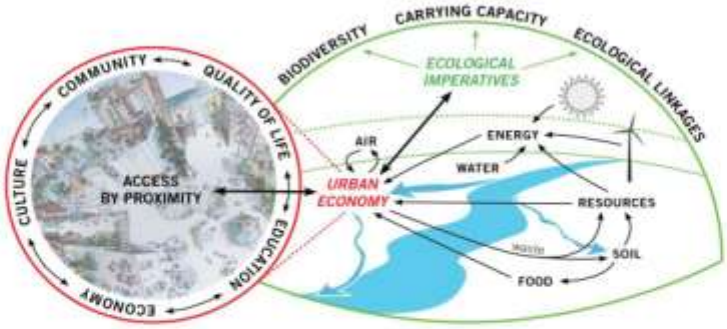
Kirstin Miller
Executive Director, Ecocity Builders
Lead Facilitator, IEFS Initiative

IEFS Executive Summary

The pathway taken by urban development over the next few decades will play a crucial role in worldwide greenhouse gas emissions and natural resource depletion which, in turn, will affect the fundamental health and well being of the human species and all life on earth. The vast majority of the world's population now lives in cities, towns and villages, and cities currently consume 60% to 80% of the world's energy production and natural resources[i]. These human settlements are rapidly degrading earth's living systems and are the major source of CO2 and other factors impacting climate change. Therefore, ideas about how to combine urbanization and sustainability are of critical and immediate importance.

However disproportionate cities, towns and villages areas are in causing these problems, their layout, design and planning produce extremely wide variation of impacts on environment and people, with some urban development consuming many times the land and energy of others per person. The guidance from the perspective of ecological principles and appropriate measures — understanding the differences between cities, towns and villages and better understanding their full potential for healthy development and functioning — is of crucial importance for a healthy future. With a thorough approach seeking what works, it is possible for cities to build soil and maintain biodiversity while consuming considerably less land and running on a very small amount of energy, all of it from healthy sources. The implication of design and planning for cities informed by ecology is profound.

The International Ecocity Framework and Standards (IEFS) Initiative, a project of United Nations accredited nonprofit Ecocity Builders with Lead Sponsor, British Columbia Institute of Technology – School of Construction and the Environment, in collaboration with an international Advisory Committee, takes a down-to-earth approach to establishing and maintaining health of both human and natural systems — by understanding and managing human settlements (cities, towns and villages) as "urban ecosystems," where a city's complete urban ecosystem includes its concentrations of people and the built environment as well as the productive ecosystems generating the energy and matter required to sustain the whole.[ii] The IEFS is predicated on over 30 years of concept development, research and practice by some of the world's leading experts and practitioners in this arena.



A complete Urban Ecosystem as seen through the 15 dimensions of the IEFS.

Working in collaboration with like-minded organizations and institutions, the IEFS initiative is currently developing a set of internationally applicable indicators for ecocity standards covering urban design, bio-geo-physical conditions, ecological imperatives and socio-cultural conditions. The design of a companion IEFS mapping and reporting tool, enabling cities to verify, measure and track progress on urban ecosystem health under the IEFS is also underway.

The IEFS will allow cities to more efficiently and cost-effectively plan for and implement integrated, whole systems projects and plans meant to increase the overall healthy performance of the city-system — with the IEFS mapping tool facilitating measurement and verification of progress toward the goal while helping decision makers better quantify projected impacts, costs and benefits of sustainable development initiatives and investments. The IEFS Ecocity Network will additionally serve as a platform for cities to report out progress, share sustainable solution sets and learn from other cities. Widespread adoption of the IEFS approach could likely help inform and drive the global 'green economy', including major sustainable development policy frameworks and corresponding investment in sustainable infrastructure projects.

There are other urban sustainability initiatives currently active in the cities marketplace. But unlike the others, the IEFS will provide an internationally applicable, locally adaptable, whole-systems, integrated and verifiable approach to sustainable development, addressing root causes of global problems with a process to inform systemic solutions at the regional, local and hyperlocal level.

With multiple earth systems currently experiencing dangerous decline, we now have a lot more than CO2 emissions and global climate change to be worried about, as further explained by reports on Planetary Boundaries issued by the Stockholm Resilience Center[ii]. According the Center's research and analysis, there are 9 known planetary boundaries — stratospheric ozone, land use change, freshwater use, biological diversity, ocean acidification, nitrogen and phosphorus inputs to the biosphere and oceans,

aerosol loading and chemical pollution — that altogether form a safe operating space for humanity. To date, humanity has crossed at least 3 of the 9 interdependent boundaries,[iv] already putting healthy conditions for human life on earth in serious danger, as transgressing one or more could trigger non-linear, abrupt environmental change to the entire life-supporting earth-system. To tackle this alarming and urgent global emergency, the IEFS addresses the full suite of conditions that govern the health of earth systems and human systems in an integrated approach to long-term sustainability.

The IEFS Initiative is backed by an experienced Executive Director, Management Team and Advisory Committee, and joined by high-level partner organizations and supporters, making the IEFS well positioned to succeed. The Executive Director has worked in the field for over fifteen years and has led successful public-private initiatives engaged in ecological city planning, design and development involving multiple stakeholders and creative partnerships. She is joined by a Management Team with decades of experience in management, policy, finance, sustainability frameworks, indicator development and international coalition building. The IEFS Advisory Committee represents some of the most highly respected theorists, practitioners and experts in urban sustainability and specialty areas related to the IEFS standards and criteria.

When completed, the IEFS will offer ecocity services to local and regional government agencies, community developers, nonprofit and community-based organizations, and international agencies.

IEFS Overview

International Ecocity Framework and Standards (IEFS) Initiative

According to Ecocity Builders and the IEFS Advisory Committee, *"An ecocity is a human settlement modeled on the self-sustaining resilient structure and function of natural ecosystems. An ecocity seeks to provide healthy abundance to its inhabitants without consuming more renewable resources than it replaces in its bioregion. It seeks to function without producing more waste than it can assimilate or recycle for new uses or than nature can dilute and absorb harmlessly, and without being toxic to itself or neighboring ecosystems. Its inhabitants' ecological impacts reflect planetary supportive lifestyles; its social order reflects fundamental principles of fairness, justice, reasonable equity and consensus at ample levels of happiness."*

Based on this definition, the IEFS initiative has identified 15 essential conditions for healthy cities and civilization in balance with earth systems[v] organized through 4 fundamental urban arenas (urban design, bio-geo-physical conditions, ecological imperatives and socio-cultural conditions). The 15 conditions will be supported by corresponding sustainability indicators for health; altogether addressing the full range of

The IEFS will chart a city's steps forward in each of 15 conditions — from existing conditions to "threshold" ecocity status and beyond, with the ultimate ideal condition of complete harmony between people and nature represented as the "Gaia"-Level. Since all measures are important, a city will only reach full ecocity status when it achieves a positive score (ecocity level or above) in all categories.

Cities and citizens can move toward greater ecosystem health and sustainability by working at various levels and scales, from designing their neighborhoods for improved form and function to developing city-wide Action Plans based on their evaluation of conditions, to grappling with regional or country-wide programs that address broader policy and structural (i.e. educational, economic) impediments to creating ecocities. Utilizing the Ecocity mapping and reporting tool and ecocity Framework, cities can plan for and show how making a significant improvement in one of the most fundamental of the 15 ecocity dimensions, such as Urban Design, can lead to multiple cascading benefits and the improvement in the entire urban system[vi]

Through the creation of an international framework and standards that are both globally relevant and sensitive and responsive to local and regional conditions, the IEFS will be able to support and guide a worldwide network of cities developing and implementing ecocity projects, plans, and policies. The Ecocity Network will allow cities and citizens to share information, ideas, best practices, innovation and solutions across an integrated platform that speaks to the collective health and well-being of human civilization and earth systems.

IEFS Additional Anticipated Uses

- A yardstick for city- and region-wide transportation, land use, housing, catchment management, agriculture, resources management, climate change, and other urban and development strategies
- Developing community, neighborhood, district, city, metropolitan, regional, bioregional and national sustainable development and evaluation development plans

- Evaluating development proposals seeking approvals and evaluating existing development for retrofit and redevelopment
- Providing a comprehensive framework for partnership development
- Building awareness around the nexus of cities, humanity, and nature
- Enabling all stakeholders' and facilitating their participation in collective decision-making

To date, the IEFS has attracted the interest of a number of leading sustainability organizations and NPOs, including ICLEI -- Local Governments for Sustainability, The World Bank's Eco2Cities Initiative, the US Department of Energy, the United National Environmental Program (UNEP), the United Nations Department of Economic and Social Development (DESA), URBIS (international, multi-organization urban biodiversity research group), the Global Forum on Human Settlements (China), HealthBridge and the Livable Cities Network, Cornell University, University of British Columbia, University of California at Berkeley, McGill University, The Scientific and Technical Center for Building in Paris, and Sustainable Cities International. In addition to sustainability experts and city leaders in Vancouver, Canada, where the IEFS was launched in 2010, cities currently interested in further piloting the IEFS in the Early Partner City Program include Montreal; Kirtipur, Nepal; Pafos, Cyprus; Curitiba, Brazil; and discussion are underway with various cities in Africa, and a consortium of cities in China and South Asia.

Ecocity Builders' goal is to announce work to date on IEFS at the upcoming Rio+20 United Nations Earth Summit in Rio de Janerio in June, 2012, and finish work on Version 1 of the IEFS in time for its debut at the 10th International Ecocity Conference in Nantes, France, in 2013. From there, we intend to continue to refine and test the IEFS indicators within our Early Partner City Program. By 2015, we envision the IEFS Initiative to have grown to a point whereby it becomes a stand-alone organization, an IEFS Institute.

Ecocity Builders and IEFS + BCIT SOCE Timeline

2009:

Ecocity Builders contracts with BCIT-SOCE to produce the BCIT SOCE Visioning Charrette as part of Gaining Ground. The Sustainability Precinct report delivered to BCIT-SOCE was the culmination of a collaboration that includes detailed research and analysis into the Burnaby campus, the BCIT-SOCE Sustainability Framework and goals and objectives of BCIT-SOCE as it pertains to its training programs and curriculum, in addition to applied research and visioning for the campus as a "Living Laboratory of Sustainability". A plan was developed to work towards the goal by implementing "immediate actions" followed by a "factor 4" and a "factor 10" reduction in energy and materials within the Sustainability Precinct on campus – what the science is telling us is needed to seriously address climate change and global sustainability issues.

2010:

Ecocity Builders, with BCIT-SOCE and our international Advisory, launches the International Ecocity Framework and Standards Initiative in Vancouver. Ecocity Builders and BCIT lead an "expert advisors" workshop on the IEFS at the BCIT downtown campus with dozens of experts and sustainability leaders from industry, academia, nonprofits, and local government in attendance.

2011:

BCIT-SOCE joins the IEFS as Lead Sponsor. Ecocity Builders and BCIT-SOCE begin working towards developing an Ecocity Building Module for the school. Jennie Moore and BCIT-SOCE begin a regular column in the Ecocities Emerging newsletter, and BCIT-SOCE is further branded as lead sponsor of the IEFS. Collaboration continues in the development of the IEFS initiative and world representation.

2012:

Ecocity Builders and the IEFS partner with BCIT-SOCE at Buildex/Gaining Ground with a series of talks, workshops and meetings, including a focused workshop on the IEFS with industry partners, and a workshop at the Burnaby campus to review collaborative work to date on the Campus as Living Laboratory of Sustainability agenda, along with the Ecocity School/Ecocity Building Module. Next steps are outlined and discussed.

IEFS Programs and Services Currently Under Development

1. IEFS Framework, Standards and Indicators for Sustainable Development. The International Ecocity Framework (IEFS) will allow city officials and other community members to analyze and evaluate their city in an integrated framework that supports systemic thinking and solutions.

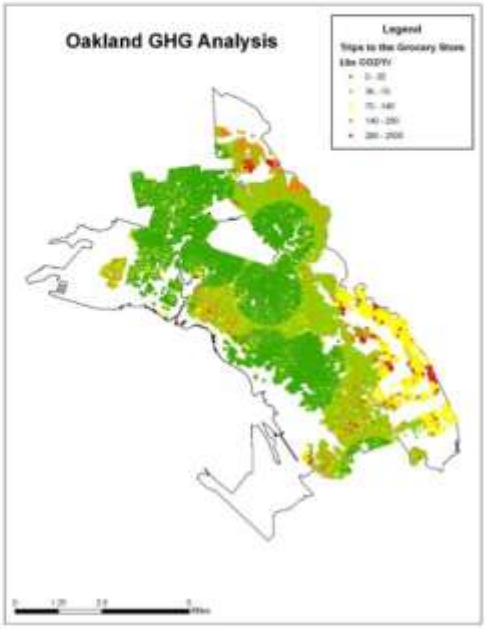
	UNHEALTHY	GREENER CITY 1	GREENER CITY 2	GREENER CITY 3	ECOCITY 1	ECOCITY 2	ECOCITY 3	GAIA LEVEL
Primary Urban Design Feature	-10	-7.5	-5	-2.5	2.5	5	7.5	10
Access by Proximity	Low - amenities not within walking distance/car dependent							Complete + sustainable
Bio Physical Features								
Air	Pollutes							Purifies
Biodiversity	Endangered							Abundant
Carrying Capacity	Overshoot							Within the biosphere's limits
Ecological Linkages	Weak, unhealthy							Strong, restorative
Energy	Non-renewable							Clean and Renewable
Food	Does not provide							Nutritious and Abundant
Resources - Materials	Depletes							Sustains
Soil	Destroys							Restores
Water	Pollutes - wastes							Purifies
Socio Cultural Features								
Culture	Unsupported							Nurtured
Community Capacity and Participation	Non cooperative/ Not well organized							Highly well organized /Highly cooperative
Economy	Destroys nature's economy							Restores nature's economy
Education	Not provided							Provided for all
Wellbeing	Violent, unjust							Justice, peace + contentment
TOTAL SCORE =								

Draft IEFS framework

Current Stage of Development: Through the process of deconstructing, or "unpacking" the 15 Ecocity 1 level definitions, IEFS has determined preliminary findings and made recommendations on individual candidate indicator readiness based on availability, efficacy, and elegance and funding potential. Specific indicators were assessed in light of collaborative co-funding opportunities with high-potential partners, including the United Nations, World Bank, World Health Organization, World Economic Forum, and European Union. Continued in-depth analysis on indicators, including implementation prioritization and expected cost for development is currently ongoing.

2. IEFS verification and reporting tool linked to IEFS indicators and metrics. IEFS indicator mapping and assessment represents a critical technical element of the IEFS. Using bioregional/ecocity mapping and assessment, IEFS evaluation and implementation can be optimized to measure and verify progress on IEFS indicators and

to update the assessment so it can track regional and city performance toward ecocity conditions over time along the 15 dimensions.



Example of previous mapping work by Ecocity Builders for the Bay Area Air Quality Management District. This figure visually represents the amount of CO2 emitted per year by each residential parcel in Oakland California as a result of grocery store trips.

Current Stage of Development: Ecocity Builders is building upon our past work with the University of California and the Bay Area Air Quality Management District to develop an initial IEFS mapping and assessment model. Based on this model and after testing the initial suite of IEFS indicators selected by IEFS Advisory Committee, the model will then be cross-tested and piloted within the network of IEFS Early Partner Cities for further refinement and development.

3. Early Partner City Program. The involvement of IEFS Early Partner Cities (EPC) is a critical feedback loop in terms of developing local capacity for IEFS adoption. The Early Partner City Program supports IEFS development, and invites participation from other interested networks such as ICLEI's international partner networks and the HealthBridge Livable Cities Alliance in South East Asia.

HELPING TO TEST AND DEVELOP INTERNATIONAL STANDARDS FOR ECOCITIES

Current Stage of Development: Under the IEFS initiative, Ecocity Builders is developing a voluntary process to assist Early Partner Cities (EPC) as they engage with the draft IEFS system. Called EPC Step-Wise, this guidance and support will be available to EPCs to help them facilitate their internal communication with respect to the EPC process and build capacity for undertaking the mapping and data gathering that will allow them to complete the process. This version of Step-Wise focuses on the EPC process; future versions of Step-Wise will provide additional tools and resources to municipalities as they plan and carry out action programs to move towards their ecocity goals.

4. Ecocity Network. The Ecocity Network is a collaboration platform that will partner with multiple sectors to build an engaged global network of cities, citizens and economies around the world moving towards ecocity conditions. The Ecocity Network will operate in collaboration with multilevel governance initiatives pursuing complementary GHG and sustainable development activities, including the United Nations and networks of sub-national government bodies, including ICLEI, Local Governments for Sustainability.

INTERNATIONAL
ECOCITY
NETWORK

Current Stage of Development: Ecocity Builders is currently under discussion with several existing city networks, including ICLEI – Local Governments for Sustainability, the Livable Cities Network, the International Sustainable Cities Alliance and the C40 Cities, to discuss a collaborative partnership to further develop and build a worldwide Ecocity Network. An Internet domain has been reserved and a logo developed, building on the IEFS and Ecocity Builders' identity. Current plans are under development to announce the launch of the Ecocity Network at the upcoming Rio+20 United Nations Earth Summit in Rio de Janeiro in June, 2012.

5. IEFS Events. An IEFS bi-annual meeting will be convened in coordination and collaboration with the ongoing and established International Ecocity Conference Series. Members will report on progress made with IEFS evaluation and certification and discuss issues and ideas for improving the process. (The Montreal 9th International Ecocity Conference Series in 2011 garnered feedback for the IEFS from an audience consisting of representatives of more than 70 nations, including mayors and city leaders from five continents.) The IEFS will be have its own track at this conference series, with cities "reporting out" their progress on IEFS, sharing experiences, ideas and information with other cities around the world working on similar goals through the Ecocity Network and IEFS.

8th International Ecocity Conference, Istanbul, Turkey

Current Stage of Development: Ecocity Builders and the IEFS Management Team and Advisory Committee are currently planning the 2013 events and IEFS track with the local International Ecocity Conference Series host committee in Nantes, France.

Market Analysis

Market Statistics & Trends

As impacts from global climate change and related environmental and social pressures increase, cities need to develop strategies to increase resiliency. Cities that can meet most of their needs from their local bioregions will have a greater chance at long-term health in the face of outside pressures from climate change, political instability and other situations. There are many cities around the world already working on ecocity-like projects and actions plans. Some cities have well-established track records of early innovation and success, and have been instrumental in helping other cities learn from their experiences.[vii]

Today, the effort to launch a global sustainability initiative with comprehensive and long lasting results will require international cooperation, focus, funding, commitment, and accountability. As acknowledged by the business community in their comments to the United Nations Rio+20 Earth Summit Outcomes Process, investment requirements of sustainable development can only be met by effective partnerships and a shared vision[viii]. Furthermore, consensus on sustainable development calls for international cooperation and leadership to achieve convergence between economic development, social development and environmental protection. In order to achieve the necessary conditions for engaging all sectors towards a common vision, the IEFS will provide a roadmap towards a human civilization in balance with living systems. Indicators and standards for sustainable development will ensure that the needs of both people and nature are addressed within the context of a shared framework and vision and can be included and addressed from the front end of the sustainability discussion.

Customer Analysis

IEFS target customers are the same kinds of cities Ecocity Builders has been actively engaged with around the world — cities looking for guidance on ecocity and sustainable development plans, projects, and policies[ix]. The IEFS will offer cities moving in the direction of sustainability, clear, universal standards that will enable them to make greater and more cost-effective progress towards their sustainable development goals.

In addition to Ecocity Builders' international city clients and contacts, as a primary organizing partner, ICLEI, Local Governments for Sustainability[x], will provide an additional customer base from which Ecocity Builders will expand its Early Partner City Network into a worldwide Ecocity Network.

IEFS is also forming alliances and partnerships with other local government networks working on sustainability initiatives, including Sustainable Cities International[xi] and the Livable Cities Network[xii]. In addition, we are advancing conversations with business and industry sectors as well as NGOs and citizen organizations. Ultimately, we will seek to restructure an "ecocity building" oriented industry around the IEFS standards and criteria. This new direction is being spearheaded with our partnership with the British Columbia Institute of Technology, School of Construction and the Environment. BCIT's School of Construction and the Environment is working with Ecocity Builders to develop an Ecocity Building Module within their trades and technology track, to further the education and sustainability skill set of emerging city architects, designers, planners and builders in British Columbia.[xiii]

Competitive Analysis

Direct & Indirect Competitors

The following organizations provide related services either nationwide or locally to our customers: SustainLane Rankings, Living Building Challenge, Global Reporting Initiative, WHO Healthy Cities/UN Habitat/UNEP/SCP/Agenda 21, ICLEI STAR[xiv];

By providing an international set of standards with widely accessible indicators for building ecological cities, the IEFS will, unlike its competitors, provide a consistent framework across a diversity of political, social, and environmental contexts. The IEFS set of standards will facilitate high-performing design, planning, and policy solutions that can be customized based on the particularities of each city and region.

Competitive Advantage/Differentiation

Ecocity Builders conducted further research to better understand the competitive advantage and differentiation between the IEFS and the top five competing brands in the market.[xv]

We picked the top five using the following methodology:

- Exploratory meetings with local and international experts
- Reviewed the top 10 most cited by GoogleScholar using keywords: Ecocity, Eco-city, ecocities, eco-cities, sustainability indicator etc.
- Analysis of all ecocity and sustainability resources in UC Berkeley Environmental Design Library and the Oakland Public Library
- Living list, not a bona _de Top 5
- Previous reviews are outdated, limited in scope or not relevant

Types of systems reviewed included:

- Competitive Rankings
- Industry Certifications or Awards (Binary or Tiered)
- Quality of Live or Sustainability Indicators
- Sustainability Projects or Initiatives

Differentiation Analysis

- The IEFS will be a Certification project that is Global and Scalable[xvi].
- SustainLane is a good methodology, but limited to 50 US cities
- Living Building Challenge has some good principles, but others are highly

subjective and to date limited to buildings and landscaping projects.

- Global Reporting Initiative is Global and Scalable, but only provides a common template and language to use in developing a sustainability support. It does not set sustainability goals.
- STAR is also set up to compare US cities across time to assist with their own projects, NOT to rank cities. It is like a NA GRI.
- UN measures are global, but like GRI, do not set goals based on carrying capacity.

The IEFS will…

- **Not be a ranking to compare cities, but a standard defining the Ecocity**. A set of standards has the power to aid in policy-making, guiding and bringing certainty to the process of urban development and ensuring outcomes beneficial to both people and planet. Standards level the playing field and provide transparency in evaluating costs, benefits and other impacts. For example, the industrial and commercial ISO standards are wisely used because of clear, identifiable references that enhance product quality and reliability.

- **Contain many of the top competitors' principles, but global and scalable, verifiable, performance based.**

- **Address not only local conditions but global ecological imperatives.** In addition to refining Urban Design and Access by Proximity, Bio-Geo-Physical Conditions such as clean air and water specifically for cities and emphasizing Socio Cultural Features such as education and well-being, especially important within IEFS is the explicit guidance provided by clarity regarding the unbending rules of ecology seen in the IEFS conditions of healthy biodiversity, carrying capacity and ecological integrity. These aspects of the IESF are in their inclusiveness and emphasis unique among systems of measures, indexes and standards seeking to promote sustainability.

- **Consider using reporting standards and procedures of the GRI, but set clear goals and standards for ecocities.** Standards have become ubiquitous as a clear reference in products ranging from camera film, to paper size, digital images, and even buildings. The Forest Stewardship Council's standards, for example, have successfully resulted in a major change in the management of environmental resources.

- **Center on the Ecocity as a subsystem of the watershed, bioregion, economic system and planet earth.**

San Francisco Bay Area envisioned through the Ecocity System Hierarchy - Ecocities + Ecopolis + Eco-Region (Bioregion)

Marketing Plan

The IEFS Brand

The IEFS brand will focus on its unique value proposition:

- As the acknowledged founder and leader of the ecocity movement, Ecocity Builders through the IEFS program is uniquely qualified to define ecocity standards and criteria internationally.
- Our thirty plus cumulative years of work in the field has allowed Ecocity Builders and the IEFS program to develop a large network of associates, practitioners and partners, including the United Nations, universities and research institutes, businesses and industry, local governments, NGOs and related groups and organizations.
- Ecocity Builders has a proven track record of consistent quality and reliability. We convene the longest running international conference series on the topic of ecocities. Our President, Richard Register, is considered the world's leading pioneer in ecocity thinking and concept development and he has spoken in dozens of cities around the world on the topic. Locally, Ecocity Builders has led the development of many ecocity demonstration projects, including early urban stream restoration and creek "daylighting", slow streets, live rooftop design,

community gardens and fruit orchards, energy efficiency policies and programs, and a downtown pedestrian plaza. We publish books on ecocities that are now being translated and distributed in other languages. We have a monthly newsletter with over 9,000 subscribers.

- It is now well known that if we don't collectively address climate change and other problems of the environment, the cost to our global economy and overall safety from destabilizing earth systems will be potentially devastating to humanity. Defining the green economy and thereby rebuilding cities, towns and villages in balance with earth systems is the pathway to both a healthy future and the creation of millions of jobs. The IEFS will provide the framework to ensure that the process is done in the most cost effective way possible while ensuring that all the necessary issues are addressed to decrease risk.

Promotions Strategy

The IEFS promotions strategy features marketing materials including a number of different types of collateral, including a website and social media sites, monthly newsletter and other reports and publications.[xvii] Leads will be converted according to a 4 step plan.[xviii]

Milestones

The IEFS seeks to achieve the following milestones in the following timeframe:

Date	Milestone
January 2012	**IEFS Indicators:** 1. Phase 2 indictor feasibility assessment; 2.Test and assess indicators with GIS model. **GIS IEFS tool:** 1. Gather indicator data for pilot city model; 2. Develop GIS IEFS model; 3. Establish Early Partner City model template base on pilot model. **Early Partner City Program**: 1. Establish EPC program local contacts; 2. Gather local IEFS data from EPC's; 3. Develop EPC local interdepartmental teams; 4. Coordinate and integrate EPC program with Ecocity Network and EN website. **Ecocity Network:** Develop initial EN partnerships; 2. Coordinate and facilitate IEFS-BCIT_SOCE workshop

	at BUILDX in Vancouver, BC; 3. Represent IEFS and EN at meetings and events; 4. Create EN website and content.
June 2012	IEFS platform introduced at Rio+20 UN Earth Summit
January 2013	**IEFS Indicators:** 1. Test and assess IEFS indicators with Early Partner Cities; 2. Refine and calibrate international IEFS global indicators linking to local EPC conditions. **IEFS GIS tool:** 1. Test IEFS indicators with EPCs, solicit feedback; 2. Refine GIS model and reporting tool based on SF model and EP feedback and piloting. **Early Partner City Program:** 1. Coordinate IEFS indicator development and testing, gather feedback; 2. Continue to develop EPC local teams and data collection methods; 3. Continue to coordinate and integrate EPC with EN; 4. Coordinate and facilitate plans for EPCs at Ecocity World Summit in Nantes, France. **Ecocity Network:** 1. Complete EN website, integrating EPC and GIS tool online; 2. Continue to develop and manage EN partnerships and programs; 3. Coordinate and prepare IEFS and EN participation, 1st bi-annual meeting at Ecocity World Summit in Nantes, France. **IEFS Certification System:** 1. Develop and test IEFS Quality Management System; 2. Develop and test IEFS assessment and certification system; 3. Develop and test IEFS auditing procedures.
August/Sept. 2013	IEFS integrated with International Ecocity Conference Series/Ecocity World Summit; IEFS event series reviews results from the Nantes conference track and proposes revisions and improvements for the next event.

January 2014	**IEFS Indicators:** 1. Finalize Version 1 IEFS indicators; 2. Prepare report, publish IEFS indicator system Version 1.0. **IEFS GIS tools:** 1. Calibrate IEFS international indicator system against GIS tool/reporting system; 2. Develop report and license findings to the Creative Commons. **Early Partner City Program:** 1. Manage EPC involvement in IEFS indicators final assessments, testing; 2. Publish summary report. **Ecocity Network:** 1. Continue to develop and manage EN partnerships and programs; 2. Represent the IEFS and EN at meetings and events; 3. Grown the EN with strategic partners and allies; 4. Develop and expand EN services and benefits. **IEFS Services:** 1. Finalize Version 1.0 IEFS Quality Management System; 2. Finalize IEFS assessment system; 3. Finalize IEFS auditing procedures.
FURTHER ASPIRATIONAL GOALS	
January 2015	IEFS assessment process is further developed and peer reviewed. The IEFS Institute is launched to further the mission and activities of the IEFS at a larger scale.
December 2015	Complete IEFS Ecocity conditions evaluations are completed by up to 10 cities with the support of regional and national government and the UN, with corresponding IEFS Action Plans created with the assistance of local government associations and the NGO sector as appropriate, ensuring outreach and dialogue ongoing with citizens and citizens groups.

January 2016	IEFS evaluations, along with bioregional ecocity mapping and resource and ecosystem evaluation are completed by 50 additional cities occupying distinct bioregions in order to coordinate and develop plans and policies that support local economies and meeting more of their needs from the natural capital of their own bioregions. Both 2015 and 2016 cities using IEFS begin tracking performance, including CO2 reductions, economic health and community well being as laid out in the IEFS system of conditions and indicators.
January 2020	By 2020, a majority of cities and citizens will be well on the path toward 'ecocity' level conditions and we will see a significant lowering of greenhouse gas emissions, an improvement in overall biocapacity and a decrease in climate related shocks and instability. Greenhouses gases will stabilize at 350 ppm in the atmosphere and scientists will report a slowdown and return to safe operating conditions for humanity within the 9 planetary boundaries reported by the Stockholm Resilience Institute in 2009.
January 2050	A majority of cities will have reached ecocity conditions. Climate change will have been halted and the Earth's atmosphere and systems restored to safe conditions.

Organizational Structure and Management

High Level Organizational Structure

Ecocity Builders' Board of Directors will oversee the formation of the IEFS Stewardship Council, which will be comprised of 5 members whose responsibility it will be to preserve the integrity of the IEFS Initiative. The IEFS Stewardship Council will meet once every four years, or more often if deemed necessary to carry out their mandate. The IEFS Advisory Committee will meet in person at least once every two years. Their responsibility is to guide the development of the IEFS and its programs and services. The IEFS Management Team will oversee activities and projects of IEFS and will

countries participating, and is a permanent member of the conference series Steering Committee. She also serves as an advisor to INTECOPOLIS, the International Council on Ecopolis Development and the Global Forum on Human Settlements in China. She is an expert panelist for the Katerva Awards, teaches in the Sustainable Design Certificate Program at UC Berkeley, and is a frequent speaker around the world on ecocity issues. Kirstin has led the visioning, planning, coordination and development of the IEFS as a project of Ecocity Builders since its inception and launch in 2010.

The Executive Director is supported by a high-level management team that has experience running both for-profit and non-profit ventures. Specifically, our management team has solid experience in launching major sustainability initiatives, building complex and comprehensive multi-stakeholder partnerships, and successfully developing and implementing major projects.[xx]

IEFS Staff

Executive Assistant
Research Team
IEFS Program Directors
Communications Director
Interns
Specialists and Consultants as Needed for GIS and Website Development, etc.

Appendix

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[i] Cities and Green Growth – Key Points. Organization for Economic Co-operation and Development (OCED) www.oecd.org/urban/2010roundtable

[ii] Understanding Urban Ecosystems: An Ecological Economics Perspective. William E Rees, University of British Columbia. 2003

[iii] Planetary Boundaries: Exploring the Safe Operating Space for Humanity. Ecology and Society, Vol. 14, No. 2. 2009. http://www.ecologyandsociety.org/vol14/iss2/art32/

[iv] Tipping Towards the Unkown. Stockholm Resilience Centre. http://www.stockholmresilience.org/planetary-boundaries

[v] **15 Conditions of the IEFS**

URBAN DESIGN

1. ACCESS BY PROXIMITY

The city provides the majority of its residents with walkable access from housing to basic urban services. It also provides walking and transit access to close-by employment options.

BIO-GEO-PHYSICAL CONDITIONS

2. CLEAN AIR

The city maintains a level of air quality that is conducive to good health within buildings, the city's air shed, and the atmosphere.

3. HEALTHY SOIL

Soils within the city and soils associated with the city's economy, function and operations meet their ranges of healthy ecosystem functions as appropriate to their types and environments; fertility is maintained or improved.

4. CLEAN AND SAFE WATER

All residents are ensured access to clean, safe, affordable water; the city's water sources, waterways and water bodies are healthy and function without negative impact to ecosystems. Water consumed is primarily sources from within the bioregion.

5. RESPONSIBLE RESOURCES/MATERIALS

The city's non-food and non-energy renewable and non-renewable resources are sourced, allocated, managed and recycled responsibly and equitably, and without adversely affecting human health or the resilience of ecosystems. Resources/Materials are primarily sourced from within the bioregion.

6. CLEAN AND RENEWABLE ENERGY

The city's energy needs are provided for, and extracted, generated and consumed, without significant negative impact to ecosystems or to short- or long-term human health and do not exacerbate climate change. Energy consumed is primarily generated within the local bioregion.

7. HEALTHY AND ACCESSIBLE FOOD

Nutritious food is accessible and affordable to all residents and is grown, manufactured and distributed by processes which maintain the healthy function of ecosystems and do not exacerbate climate change. Food consumed is primarily grown within the local bioregion.

ECOLOGICAL IMPERATIVES

8. HEALTHY BIODIVERSITY

The city sustains the biodiversity of local, bioregional and global ecosystems including species diversity, ecosystem diversity and genetic diversity; it restores natural habitat and biodiversity by its policy and physical actions.

9. EARTH'S CARRYING CAPACITY

The city keeps its demand on ecosystems within the limits of the Earth's bio-capacity, converting resources restoratively and supporting regional ecological integrity.

10. ECOLOGICAL INTEGRITY

The city maintains essential linkages within and between ecosystems and provides contiguous habitat areas and ecological corridors throughout the city.

SOCIO-CULTURAL FEATURES

11. HEALTHY CULTURE

The city facilitates cultural activities that strengthen eco-literacy, patterns of human knowledge and creative expression, and develop symbolic thought and social learning.

12. COMMUNITY CAPACITY BUILDING

The city supports full and equitable community participation in decision making processes and provides the legal, physical and organizational support for neighborhoods, community organizations, institutions and agencies to enhance their capacities.

13. HEALTHY AND EQUITABLE ECONOMY

The city's economy consistently favors economic activities that reduce harm and positively benefit the environment and human health and support a high level of local and equitable employment options that are integrated into the ecocity's proximity based layout and policy framework – the foundation for "green jobs" and "ecological development."

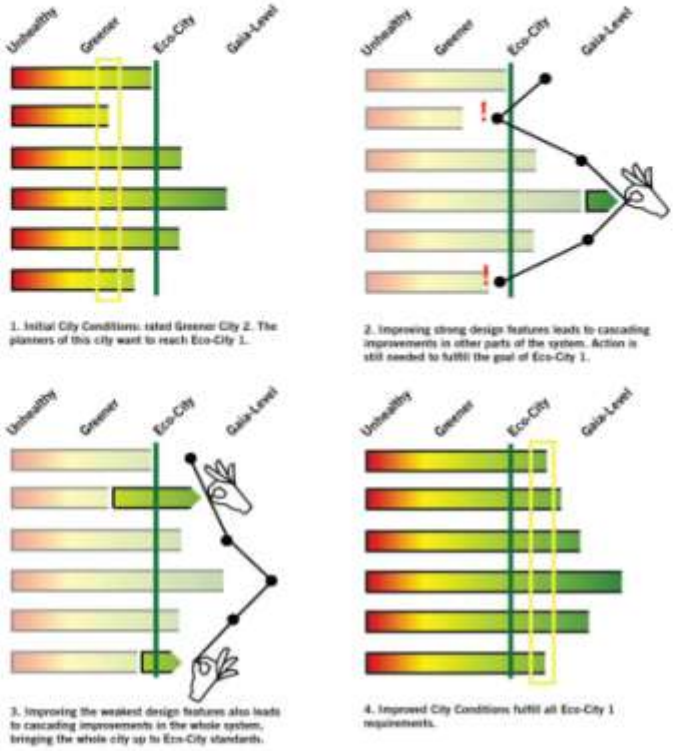
14. LIFELONG EDUCATION

All residents have access to lifelong education including access to information about the city's history of place, culture, ecology, and tradition provided through formal and informal education, vocational training and other social institutions.

15. WELL BEING – QUALITY OF LIFE

Citizens report strong satisfaction with quality of life indicators including employment; the built, natural and landscaped environment; physical and mental health; education; safety; recreation and leisure time; and social belonging.

[4] Chart showing how improvements in one of the 15 areas can lead to cascading improvement in the overall system's condition.



[vi] One well-known early ecocity innovator is IEFS Early Partner City, Curitiba, Brazil. Under the leadership of then Mayor Jaime Lerner, Curitiba implemented a master plan that transformed the city and positioned it as a world leader in ecocity innovation and creative solutions. Unable to afford a metro system, the city designed a city-wide integrated Bus Rapid Transit (BRT) program that operated in partnership with private bus companies, a move that saved the Curitiba millions and effectively got people out of cars and onto mass transit. Major land use programs were initiated to relocate squatters from dangerous flood prone areas into affordable housing and job training programs. The former squatter camps were transformed into parks and green spaces for the public's enjoyment. A large car free area was created in the city center. Residents embraced these and other changes, and today the city is well known as a place for other cities to visit to learn about creative pathways to sustainable innovation and social justice.

[vii] Business Action for Sustainable Development (BASD) 2012. Contribution for Rio+20 Compilation Document.
http://www.uncsd2012.org/rio20/index.php?page=view&type=510&nr=424&menu=20

[ix] Some examples of cities where Ecocity Builders has engaged in similar work includes Berkeley, California where they have piloted watershed restoration projects, ecocity design guidelines for

infill development proposals, community sustainable design plans and elements for public spaces and plazas, and energy efficiency ordinances and local government policies on areas plans and green space. In China, Ecocity Builders has been involved in advising and consulting on a number of ecocity projects and plans, major conferences and sustainability forums over the last ten years, working in Shenzhen, Wuxzi, Huebei, Guiyang, Kunming and Tianjin, among other cities, assisting in the formation and development of major ecocity initiatives and policy development proposals. In South Asia, we have worked in Bangalore, Pondicherry and Auroville India; Dhaka, Bangladesh; Seoul and Changwon City, South Korea; and the entire Kathmandu Valley in Neapl, where we partnered with local universities, government and NGOs to develop a "living city" plan for the Valley.

[x] ICLEI is an association of over 1200 local government Members who are committed to sustainable development. Our Members come from 70 different countries and represent more than 569,885,000 people. http://www.iclei.org/

[xi] Sustainable Cities International catalyzes action on urban sustainability with cities around the world. http://sustainablecities.net/

[xii] HealthBridge's Livable Cities program aims to improve health, equity, and the environment in developing countries by focusing on how cities are planned, designed, built, and adapted. http://www.healthbridge.ca/livable_cities.html

[xiii] British Columbia Institute of Technology, School of Construction and the Environment – link to IEFS on right hand column of webpage. http://www.bcit.ca/construction/sustainability/

[xiv] Chart showing an analysis of other urban sustainability programs and rating systems on the market.

STANDARDS	BRIEF SUMMARY	STRENGTHS	WEAKNESSES
US Green Building Council's LEED rating system	Rating system for existing and new buildings for energy conservation, non-toxics, recycling, natural lighting, etc., at multi levels e.g. platinum, gold, silver	Highly influential because system is clear and easy to learn	- Assesses one building at a time not a whole community - Meticulous method vulnerable to gaming - Not very high standard/bar at the lowest level

The Economist's European Green City Index and Other Indices	Range of criteria includes carbon, buildings, energy, transport, water, waste, land use, air quality, environmental governance	Good end-point indicators for generally cleaner and more conservation-oriented cities	-Corporate creation creates perception of conflict of interests -Ranks relativity, not absolute performance Missing concepts of: - Clusters of interrelating buildings - Ecosystem restoration - Agricultural productivity - Basic health indicators - Negative impacts of cars
ICLEI-USGBC-Center for American Progress STAR rating system	National rating standards for local governments to measure progress on policy, performance, practices. Target launch date 2011. Criteria include Environment, Economy & Society	Process includes broad range of stakeholders, structured through Steering Committee, Executive Committee, and Technical Advisory Committee. Based on largely accepted sustainability framework of 3 E's (Environment, Economy, Equity).	- Only applicable to cities in the US and possibly other developed countries -Advanced ecocity architecture feature, clear density shifting mapping and other ecocity tools not featured - Launch has been delayed from 2010 until at least 2012
Ecocity Buidlers' Shenzhen Declaration	Ratified by attendees at the 5th International Ecocity Conference	Broad, international agreement to wide range of principles including basic health/needs to land use planning	- Needs a strategy for developing concrete standards and criteria for implementation
BioRegional's One Planet Communities	Set of 10 principles based on and aiming for the GFN's concept of living on one planet's resources	Covers wide range of topics incl. waste, carbon, health & happiness, transport, materials, food & water, habitat, culture, and equity	- Does not include location consideration

Partners for Livable Communities	Subjective selection system including 10 criteria encompassing economy, center-based land uses, regionalism, and environment	Holistic in its vision	- Lacks a sense of measurement, many selected projects based on small demonstration projects
Local Government Commission's Ahwanne Principles for Resource Efficient Communities	Developed by Peter Calthorpe to guide prospective development	Addresses economics, water and climate change up through medium density development	- Not a certification per se but helping shape local government policy, less applicable at higher densities, in larger city centers
Green Communities Program	Complement to LEED, targeted to low-income housing development.	Includes online carbon calculator for projects	- Small target audience
Sustainable Jersey	Certification and incentive program. Emphasizes long term sustainable decision making	Offers tools, guidance materials, training, and financial incentives to support and reward progress	- More process than results oriented
The International Living Building Institute (The Living Building Challenge)	A set of 7 standards (site, water, energy, health, materials, equity, beauty) must be met and maintained for a year to achieve the certification of a Living Building.	Focuses on the individual building, community, and world. Strives for all communities to be built in balance with nature, car free, create minimal waste, and use only sustainable materials.	- The high quality standard required in all levels would make it difficult for all but a developed nation to achieve.

SustainLane Ranking	Ranks the 50 largest Cities in the USA on 16 dimensions of sustainability	-Fosters healthy competition - Independent of city interests	- Does not set absolute standards of what it would take to be sustainable. - Misses the small cities and those outside the US - Has not been updated since 2008, and date of next ranking is unknown
Global City Indicators Facility	Based in Toronto with UNEP participation	Google Earth Map and drop down that links to city profiles	- Most profiles are not complete - 22 indicators, but none required -Lack of sustainability indicators
Global Reporting Initiative	Began in 1997 with first Partners CERES and the UNEP in 1999 CERES is an NGO of investors for sustainability	Purpose is to standardize international sustainability reporting for all levels of products and organizations	- Not specifically focused on cities or urban systems

WHO Healthy Cities	Originally for Local Governments in Europe, but now expanded	Common Set of Health Goals with ecosystem approach Link to Sustainable Cities/Agenda 21	- No specific requirements, must promise to improve on baselines

[xv] The Top Five competing systems:

- SustainLane Rankings (A Ranking)
  - Ranks the 50 largest Cities in the USA on 16 dimensions of sustainability
  - Independant of city interests. Funding stream from investors and advertising revenues.
  - Fosters healthy competition
  - Does not set absolute standards of what it would take to be sustainable
  - Misses the small cities and those outside the US.
  - Last performed in 2008: not known when or if another ranking will occur.

- Living Building Challenge (A Product Certfication)
  - Certification by the International Living Building Institute and Cascade Region Green Building Council
  - 12 Months Post-Occupancy
  - Must meet all 20 "Petals"
  - Standards scale with New Urbanist Transects
  - Exceptions granted for product availability or special uses
  - Reaching above the best practices aka "Greener than green", but dialogue part of the standard

- Global Reporting Initiative (An Indicator Guidebook)
  - Began in 1997 with first Partners CERES and the UNEP in 1999
  - CERES is an NGO of investors for sustainability
  - Board is composed of labor unions, environmental NGOs, pension funds
  - Became independent NGO in 2001
  - Purpose is to standardize international sustainability reporting for all levels of products and organizations
  - Over 20,000 stakeholders developed instructions
  - Choose a "level" A, B, C based on how much is reported
  - Third party verification

- WHO Healthy Cities/UN Habitat/UNEP/SCP/Agenda 21(Certifications and Guidebooks for Projects)
  - Originally for Local Governments in Europe, but now expanded
  - Common Set of Health Goals with ecosystem approach
  - Link to Sustainable Cities/Agenda 21
  - Requirements include endorsing Healthy City Declaration, staffing position, attend national meetings
  - Must pay WHO to participate

- No specific requirements, must promise to improve on baselines

- The STAR System, a project of the Local Governments for Sustainability (ICLEI), US Green Building Council and the Center for American Progress (Customizable North America Indicator Rating)
  - Part of the Community Quality of Life Indicator (CQOLI) movement
  - Targeted to Local Governments in North American
  - Common Web Based Performance
  - Platform with Menu of Options
  - Locally Determined Criteria and Benchmarks
  - $4.5 million to develop through from 2008 to April 2011 Launch

[xvi] *Select Reviews of Sustainability Standards*

- *For Policy Makers. . .*
- *Moore et al. 2010 for UBC, City of Vancouver, Prospectus*
- *Peterson, 2008 for the ICLEI STAR Rating*
- *Meadows, 1998 by The (Vermont) Sustainability Institute*
- *Hammond et al. 1995 for World Resources Institute*

For Scientists. . .

- *Mayer, 2008 for Environment International*
- *Bell & Morse, 2008 Book*
- *Bhringer & Jochem (2007) for Ecological Economics*
- *Miller 2005 for Science, Technology & Human Values*
- *Pearce et al. 1996 for Environment and Development Economics*

[xvii] **Marketing Materials**

Marketing materials for the IEFS include a number of different types of collateral:

- Website
- Social Media sites on Linked-In and Facebook
- Monthly newsletter for clients, donors and potential clients
- Donor appeal letters
- Featured stories in major news publications online and in print (free advertising)
- Advertising in online publications aimed at city governments interested in sustainability and climate change mitigation
- Annual report
- Staff business cards, letterhead, envelopes, signage as needed, nametags

Testimonials

Both written and video testimonials from clients are important to build the credibility of IEFS. These will be sought out from partner cities, both past and present, and from cities who have benefitted from Ecocity Builders consulting work.

Web Plan

The IEFS website serves a number of purposes:

- Establish the credibility and success of IEFS to donors and key partners such as the United Nations and ICLEI
- Court new clients and potential partners
- Provide services to existing clients
- Inform the general public about IEFS services and client businesses
- Give press material for stories about IEFS

The website includes the following pages:

- Home landing page, with the latest news
- About > IEFS Advisory Committee, Ecocity Builders
- What is an Ecocity? > Ecocity System Hierarchy, Urban Ecology
- IEFS Conditions > Urban Design, Bio-Geo-Physical Conditions, Socio-Cultural Features, Ecological Imperatives, Indicators
- Early Partner Cities > Testimonials and Key Success Metrics
- Rio+20 > Timeline
- Contact
- Become a partner city?!
- Green Industry Leaders section?

Social Media Plan

Linked-In: Use of Linked-In as a partner city networking site for clients to facilitate discussion forums, posting of calls for help or advice, sharing of resources, news updates, and more. Staff takes part in this networking site to facilitate, answer questions where possible, share news, and help make connections between the partners. Also can be used as a hub to connect green industry leaders with their potential customers via IEFS.

Facebook: Establish a presence on Facebook as well geared towards citizens in partner cities to keep them up-to-date about their city's activities relating to IEFS. This may also be a venue where citizens can pressure cities to be more sustainable and make the commitment to IEFS or to becoming a partner city.

This city networking must happen offline as well. The Ecocity Summit is a good opportunity for such networking.

Lead Generation Plan

New leads are generated for the IEFS through the following means:

- Referrals from existing clients and word-of-mouth
- Trade journals and online publications aimed at municipal government
- Relationships with key allies such as the United Nation and ICLEI
- Contacts made at conferences and events by IEFS Founder or SG

Advertising and PR

- Coverage and/or advertising in eNewsletters targeting municipalities interested in sustainability - such as Environmental Leader, BlueGreen Alliance
- Articles in large newspapers such as NYTimes, Washington Post, Chicago Tribune, Guardian, LATimes....
- Radio segments: NPR

Referrals

The IEFS encourages its clients to feel a sense of community with other partner cities and support each other wherever possible, rather than feeling they are in competition with others or alone in their challenges. To that end, IEFS encourages current clients and former clients to refer new leads.

[xvii] **Lead Conversion Plan**

Step 1: Unless there is an initial introduction made by an existing client (to connect IEFS with a possible new client), the lead conversion begins either with a cold call by IEFS to a desired future client, or it begins at a climate change or sustainability-oriented conference or event aimed at city governments. At one of these events, the ED and Program Directors (PD) of IEFS to begin cultivating relationships with city governments who see sustainability as a key piece of success in local governance. The ED and PDs collect business cards at such events and then move on to Step 2.

IEFS goal for Step 1: Twenty (20) cold calls per month to additional generate leads beyond referrals. Find contacts through online publications aimed at municipal government or by going directly to a city website.

Step 2: Following first interaction, ED or PDs make follow-up calls to each of their new contacts to discuss how IEFS can help the city become more sustainable and reduce costs and waste.

Step 3: Phone call is followed up with an email outlining services provided by IEFS, IEFS Certification details, and partner cities program details. The email also must include at least two references with an email or phone number of a current or former Ecocity Builders or IEFS client that is willing to provide a testimonial.

Step 4a: Once ED or PDs have identified interest in IEFS by city, (s)he sends the city a contract for review and signing stipulating terms and payment. ED or PD checks in with the potential partner city periodically (once a week) until (s)he has secured a signed contract.

Step 4b: If the ED or PD has not heard back from the city after the initial phone call, Founder or SG calls again after 2 weeks to follow up again. If the city is interested in becoming a partner or receiving other services, the parties agree to a timeline to begin the process. If a city is not ready to start that process, ED or PD says (s)he will call back in 6 months and marks it on his/her calendar. If the city says "not interested," ED or PD checks term limits of the city contact and marks when they are likely to expire to call back.

[xix] **IEFS Expert Advisors include the following members:**

- Mathis Wackernagel, President, Global Footprint Network, Oakland, California, USA
- Bill McKibben, 350.org
- Peter Gleick, President, Pacific Institute, Member, U.S. National Academy of Sciences, MacArthur Fellow
- Janet Larsen, Director of Research, Earth Policy Institute, Washington, DC, USA
- Warren Karlenzig, President, Common Current & Strategic Advisor, the Institute for Strategic Resilience, Shanghai-San Francisco, San Francisco Bay Area, USA
- Ian Douglas, Emeritus Professor, School of Environment and Development, University of Manchester, Manchester, England, President, Society for Human Ecology
- Alex Aylett, Research Director, Sustainable Cities International
- David Hall, President, Novatek, Inc.
- Dmitry Ozeryansky, Ozeryansky Engineering
- Charlene Easton, M.E.S., Advisor, Sustainability, C Easton and Associates
- Vanessa Timmer, Co-founder and Director, One Earth Initiative
- Osprey Orielle Lake, Director, Women's Earth and Climate Caucus, State of the World Forum
- Jeffrey Heller, FAIA, President, Heller Manus Architects
- Vatsal Bhatt, Brookhaven National Laboratory
- Luc Rabouin, Director General, *Montréal Urban Ecology Centre*
- Jayne Engle-Warnick, Board of Directors, *Montréal Urban Ecology Centre*
- Daniel Zhu, Venture Partner, China Environmental Fund of Tsing Capital (cleantech and environment related investments)
- Dr. John Chien-Yuan Lin, Professor, National Taiwan University, Graduate Institute of Building and Planning
- Chan-Won Lee, Director, Institute of Advanced Instrument Analysis; Professor, Department of Urban Environmental Engineering, Changwon, Korea
- Rusong Wang, President, Ecological Society of China, Bejing, China
- Ray Tomalty, Principal, Smart Cities Research Service & Adjunct Professor, School of Urban Planning, McGill University, Montreal, Canada

[xx] **Management Team Advisors**

Marco Vangelisti worked for 11 years at BARRA in Berkeley – a consulting company developing statistical risk models for equity and fixed income markets around the world. He later worked for 6 years for GMO managing investment equity portfolios primarily on behalf of large foundations and endowments. Marco is currently an impact investor and founding member of Slow Money.

Warren Karlenzig is President of Common Current, a global consultancy based in San Anselmo, CA. Warren has developed capacity for organizations including SustainLane, of which he was the first employee hired by its founder/ CEO. As Chief Strategy Officer, he helped lead SustainLane through rounds of multi-million dollar financing, international media exposure and capacity development (the company grew from 2 to 30+ employees during his tenure). He also devised the methodology for the SustainLane US City Rankings, which he directed from its inception in 2004 until 2007. Common Current has worked collectively and individually with government, quasi-governmental, non-governmental, foundation and corporate clients in sustainability planning, strategy, analytics and capacity building. Warren has worked with international clients including the United Nations (Department of Economic and Social Affairs), The Shanghai World Expo Bureau (comprised of national leadership from the People's Republic of China), The European Union, the US Department of State, and the Asian Institute of Energy, Environment and Sustainability.

Vancouver

International Ecocity Framework and Standards

ECOCITY BUILDERS

August 2011

Background on the Ecocity Framework

The Ecocity Framework charts a city's steps forward — from existing conditions to "threshold" Ecocity status and beyond. The Framework helps people see how their city is doing on a range of important measures, charted from "unhealthy" through multiple levels of "greener city," "Ecocity", and the whole earth level, "Gaia". The Ecocity Framework includes 1 primary ecocity urban design feature (access by proximity), 6 bio-geo-physical conditions of a healthy urban system (clean air, clean and renewable energy, nutritious and available food, responsibly managed resources and materials, healthy soil, and clean and available water), 3 ecological imperatives (healthy biodiversity, carrying capacity, and ecological integrity) and 5 socio-cultural dimensions for a healthy population (healthy culture, community capacity, lifelong education, healthy and sustainable economy and well-being). Since all measures are important, a city will only reach Ecocity status when it achieves an "Ecocity" or higher designation in all categories. Ecocity Builders has solicited responses to a survey sent out to its Partner Cities. The survey is intended to measure how close each partner city is to becoming an Ecocity. Vancouver's responses to the survey are below.

Ecocity Urban Design Features

ACCESS BY PROXIMITY

Criteria for an Ecocity: The city provides walkable access from housing to basic urban services, and walking and transit access to close-by employment options. Suggested information to indicate if available: City maps that can be analyzed such as GIS, census data, city transportation statistics.

Almost all Vancouver residents live within a 400 m distance of transit and are increasingly choosing sustainable travel modes as the primary means of traveling for work, shopping, play, and basic urban services. Much of Vancouver's success with increasing sustainable travel modes has been the result of land use decisions (as well as key past decisions such as avoiding the construction of a freeway in the city) where increased densities and 'complete communities' with mixed use in the central area has resulted in dramatic increases in walking as primary travel mode.

Relevant metrics:

- 99% of residents within a 400 m distance of the frequent transit network (as defined by Translink)
- 25% of journey-to-work trips by transit (2006 census – before the completion of Canada Line, so we expect the num-

ber to be higher now), 12% by walk and 4% by bike
- 40% combined walk, bike and transit trips overall and 18% for transit alone (2008 Translink trip diary, also before the completion of Canada Line)
- 2020 Greenest City Action Plan goal: 50% of all trips by walk, bike or transit

ECOCITY BIO-GEO-PHYSICAL CONDITIONS

CLEAN AIR

Criteria for an Ecocity: Air quality conducive to good health is found within buildings, the city's air shed, and the atmosphere.

Vancouver's air quality is currently good compared to other major North American cities, with air quality improving over the past 20 years.

Relevant metrics:
2020 Greenest City Action Plan goal: cleanest air of any major city in the world

Goal and Targets
- Goal: Breathe the cleanest air of any major city in the world
- Target: Always meet or beat the most stringent of World Health Organisation, Canadian, BC or Metro Vancouver guidelines for air quality
- Accountability for target: City of Vancouver Sustainability Group, Climate Programs Manager

Background
Vancouver's air quality is currently good compared to that of other major North American cities. Our air quality is better than it was 20 years ago, however, health impacts still occur at current levels and as our population increases, it may be challenging to maintain our current air quality. Cars, trucks, buses, ships, trains, planes, industrial operations, and commercial facilities all emit air pollutants. This action plan identifies the range of strategies and actions that the City of Vancouver must pursue in partnership with Metro Vancouver and other levels of government, business, NGOs and citizens to maintain and improve our air quality.

Metro Vancouver is the authority responsible for air quality planning, monitoring and management within the region. Metro Vancouver's 2011 Integrated Air Quality Management Plan sets three goals for the region: 1) Protect public health and the environment, 2) improve visual air quality, and 3) reduce the region's contribution to global climate change.

Metro Vancouver maintains a network of ambient air quality monitoring stations throughout the Lower Fraser Valley. Two of these stations are located within the City of Vancouver, one in Kitsilano and one in Robson Square. As illustrated in Table 1, air pollutant levels in Vancouver do not always meet the GC 2020 target. The table also summarises which strategies are aimed at tackling the exceedances of each pollutant.

Table 1: Recent Air Contaminant Target Compliance and Main Contaminant Source

Pollutant	Do recent levels meet the GC 2020 target?	GC 2020 strategy to address these exceedances
Sulphur Dioxide	No (exceedances at Kitsilano and Robson Square)	Marine Vessels
Nitrogen Dioxide	No (minimal number of exceedances at Robson Square only)	Light duty vehicles (Green Transport Strategy) Marine Vessels Non-Road Equipment
Particulate Matter	No (minimal number of exceedances at Kitsilano and Pandora Park1)	Non-Road Equipment Marine Vessels Residential Wood Combustion
Ground-level Ozone	No (minimal number of exceedances at Kitsilano only)	Major sources of smog-forming emissions: Light-Duty Vehicles (Green Transport Strategy) Non-Road Equipment
Carbon Monoxide	Yes	

Fine particulate matter is not monitored at Robson Square due to space constraints. These exceedances were measured using non-standard portable monitoring equipment at a temporary monitoring site in Pandora Park.

HEALTHY SOIL

Criteria for an Ecocity: Soils within the city and soils associated with the city's economy, function and operations meet their ranges of healthy ecosystem functions as appropriate to their types and environments; fertility is maintained or improved.

No information available.

CLEAN AND SAFE WATER

Criteria for an Ecocity: All residents are ensured access to clean, safe, affordable water; the city's water sources, waterways and water bodies are healthy and function without negative impact to ecosystems. Water consumed is primarily sourced from within the bioregion.

Currently, Vancouver's drinking water consistently meets or exceeds provincial water quality standards and Health Canada's guidelines. Water is supplied by Metro Vancouver from three protected freshwater lakes located within the bioregion (North Shore mountains) whose sources are expected to provide an adequate water supply (assuming current consumption rates and population growth) until 2070.

2020 Greenest City Action Plan goal: Meet or beat the strongest of British Columbia, Canadian, and international drinking water quality standards and guidelines; Reduce per capita water consumption by 33% from 2006 levels
Long-term goals: achieve a one-planet ecological footprint; reduce community-based GHG emissions by 80% by 2050.

RESPONSIBLE USE OF RESOURCES/MATERIALS

Criteria for an Ecocity: The city's non-food and non-energy renewable and nonrenewable resources are sourced, allocated, managed and recycled responsibly and equitably, and without adversely affecting human health or the resilience of ecosystems. Resources/Materials are primarily sourced from within the bioregion.

Vancouver has a zero-waste strategy (currently Metro Vancouver produces over 3 million tonnes of solid waste per year, with about 55% diverted to recycling, the City of Vancouver produces about 480,000 tonnes per year). To achieve zero waste, reduction and reuse is central to the City's strategy - including grants to lending libraries or sharing co-ops to reduce purchasing, establishing a reuse centre, and collaborating with regional and other governments to reduce waste, among other initiatives.

2020 Greenest City Action Plan goal: reduce total solid waste going to landfill or incinerator by 50% (from 2008 levels)
Long-term goals: create zero waste

CLEAN AND RENEWABLE ENERGY

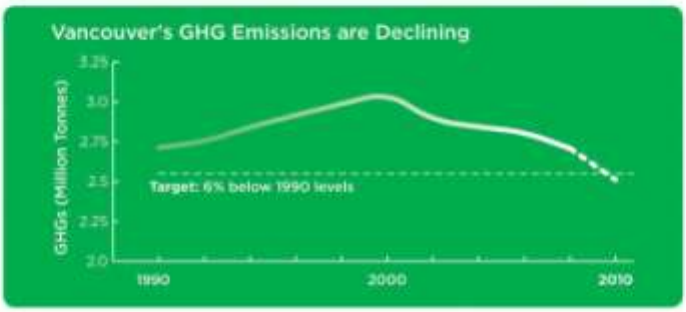
Criteria for an Ecocity: The city's energy needs are provided for, and extracted, generated and consumed, without significant negative impact to ecosystems or to short- or long-term human health and do not exacerbate climate change. Energy consumed is primarily generated within the local bioregion.

Vancouver gets the majority of its electricity from in-province hydroelectric dams which are on-track to carbon neutrality (provincial/BC Hydro initiatives) and is seeking to diversify its energy generation through district energy (the city has piloted a sewer waste heat recovery system in South East False Creek), is launching a city-wide district energy strategy, and requires a district energy feasibility study for all rezonings greater than 2 acres in size.
Further, the City is seeking to reduce reliance on imported energy (including hydroelectric energy) by increasing the energy efficiency of Vancouver's building stock and increasing the proportion of trips made by sustainable travel modes (including transit which in Vancouver is largely powered by hydroelectric power) and increasing adoption of electric vehicles by building or mandating provision of charging stations.

Relevant metrics:
2020 Greenest City Action Plan goal: carbon neutral new buildings by 2020
Long-term goals: eliminate dependence on fossil fuels

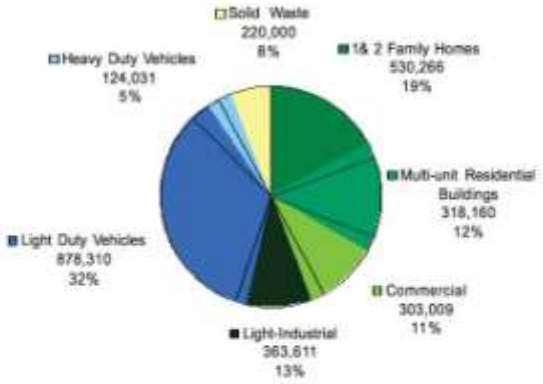
Vancouver's original Community Climate Change Action Plan (2005) plotted a course of action to reduce emissions associated with buildings, transportation and waste by 6% below 1990 levels by 2012. The 2008 community GHG inventory indicated that emissions grew significantly during the 1990's, peaked in 2000, and have declined back to 1990 levels. The planned expansion of Vancouver's landfill gas recovery system is expected to reduce emissions to 6% below 1990 levels by the end of 2012. These reductions have occurred at the same time as population has increased by more than 27% and jobs have increased by over 18% proving that climate leadership and prosperity can be achieved together.

Vancouver's 2008 GHG Emission Inventory



The primary sources of GHG emissions in Vancouver include burning natural gas for heating buildings, water, and industrial processes; the use of fossil fuels such as gasoline and diesel in cars and trucks; methane emitted to atmosphere from the anaerobic decomposition of organic matter in the landfill; and the use of electricity that is primarily generated from hydroelectric dams.

Vancouver's 2008 greenhouse gas emissions (tCO_2e)



It is important to note that Vancouver's greenhouse gas emission inventories exclude some significant emission sources due to measurement challenges and jurisdictional limitations. Greenhouse gas emissions associated with the production of fuel, food, and materials such as cement and consumer goods that are imported to the city are not included in our local inventory. In addition, emissions from marine, rail, air transportation, and non-road equipment such as generators and construction equipment are also excluded. However, leading best practices in GHG measurement are starting to report emissions associated with the full lifecycle of the goods we consume, as well as emissions traditionally considered outside of a municipality's realm of influence. The City will expand its efforts to quantify and support actions by other entities to minimize emissions from all sources.

HEALTHY AND ACCESSIBLE FOOD

Criteria for an Ecocity: Nutritious food is accessible and affordable to all residents and is grown, manufactured and distributed by processes which maintain the healthy function of ecosystems and do not exacerbate climate change. Food consumed is primarily grown within the local bioregion.

Vancouver has committed to being a global leader in urban food systems by building on existing strengths and transforming them into something better. Vancouver has already demonstrated a willingness to lead the way by being at the front of policy and action in a number of areas.

Among the achievements to date:

- Creating a Food Policy Council to act as an arms length advisory body on food issues (2004)
- Creating and approving a Vancouver Food Charter to underpin the goals of a just and sustainable food system (2007)
- Increasing public involvement in community gardens and community orchards through the 2010 by 2010 Challenge (2007-2010)
- Creating guidelines and bylaw changes to encourage hobby beekeeping (2005) and the keeping of backyard hens (2010)
- Initiating curbside pick-up of food waste – and to take strides in the diversion of food waste from the landfill (2010)

2010 Baseline of Neighbourhood Food Assets in Vancouver

	November 2010	2020 Goal	% Increase
Community Kitchens	69	100	45%
Farmers Markets	4	22	450%
Community Produce Stands	3	15	500%
Community Food Composting facilities	0	5	500%
Garden Plots	3,260	5,000	53%
Community Orchards	3	10	233%
Urban Farms	1	5	400%
Food Hub	0	1	100%
TOTAL	3,340	5,158	54.40%

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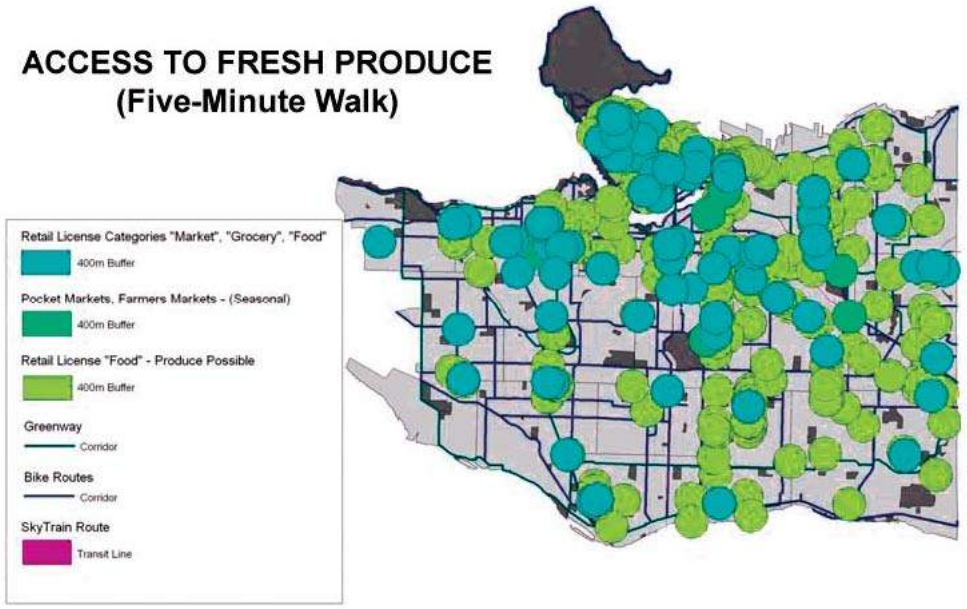
2020 Greenest City Action Plan goal: Increase city and neighbourhood food assets by a minimum of 50% from 2010 levels.
Long-term goals: Vancouver will become a global leader in urban food systems

Percentage of residents who live within a five minute (400m) walk of a basket of healthy produce:



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ECOLOGICAL IMPERATIVES

HEALTHY BIODIVERSITY

Criteria for an Ecocity: The city sustains the biodiversity of local, bioregional and global ecosystems including species diversity, ecosystem diversity and genetic diversity; it restores natural habitat and biodiversity by its policy and physical actions.

No information available.

EARTH'S CARRYING CAPACITY

Criteria for an Ecocity: The city keeps its demand on ecosystems within the limits of the Earth's bio-capacity, converting resources restoratively and supporting regional ecological integrity.

Vancouver has been moving aggressively on climate change and ecological footprint issues. Vancouver's GHG emissions have declined back to 1990 levels and is on target to be 6% below 1990 levels (over the same time period as a 27% increase in population and an 18% increase in jobs) and is the lowest per capita of any major North American city. In terms of ecological footprint, Vancouver's current per capita footprint is 5.31 hectares (well above the City's target of a one-planet ecological footprint of 1.8 hectares per capita). With adoption of the Greenest City Action Plan in 2011, Vancouver has a strategy in place to reduce its footprint, with short-term strategies including assembling the data to inform future decisions, addressing the five largest components of Vancouver's footprint (food, transportation, consumables, buildings, and waste), piloting green neighbourhood strategies, grants for local innovators, and information and engagement campaigns to involve all Vancouverites in the challenge.

2020 Greenest City Action Plan goal: Reduce Vancouver's ecological footprint by 33% (from 2006 levels)
Long-term goals: achieve a one-planet ecological footprint; reduce community-based GHG emissions by 80% by 2050.

ECOLOGICAL INTEGRITY

Criteria for an Ecocity: The city maintains essential linkages within and between ecosystems and provides contiguous habitat areas and ecological corridors throughout the city.

Vancouver recognizes the value of ecological integrity (the estimated value of natural capital in BC's Lower Mainland is $5.4 billion annually). However, a 1997 study commissioned by DFO estimated that almost a third of the streams (100 streams) in the Metro Vancouver region have been lost due to urban development, industrial, transportation and shipping activities. Of the remaining 238 streams, 221 were either threatened or endangered. The amount of wetlands in the region have increased and the amount of tree canopy has not decreased.

In 2010, Metro Vancouver initiated a Sensitive Ecosystem Inventory to identify and map at-risk, fragile and ecologically important ecosystems throughout the region and Abbotsford. This ambitious project will provide data required to support sustainable land management practices and conserve ecological diversity. When the inventory is complete, it will be a valuable resource for achieving the goal of protecting endangered wetlands and creating a Regional Protected Areas Network, as well as informing further analyses on ecosystem services and conservation.

ECOCITY SOCIO-CULTURAL FEATURES

HEALTHY CULTURE

Criteria for an Ecocity: The city facilitates cultural activities that strengthen ecoliteracy, patterns of human knowledge and creative expression, and develop symbolic thought and social learning.

No information available.

COMMUNITY CAPACITY BUILDING

Criteria for an Ecocity: The city supports full and equitable community participation in decision making processes and provides the legal, physical and organizational support for neighborhoods, community organizations, institutions and agencies to enhance their capacities.

Vancouver has long held a substantive commitment to public participation and community capacity building. Although difficult to calculate in its totality, as different departments have their own consultation budgets, for example, Planning has a dedicated annual consultation budget and includes a full-time multicultural outreach worker who assists in ensuring that language and culture are not barriers to full participation in city outreach programs. Every major planning program or city decision-making process includes a public engagement program.

More recently, the City of Vancouver has been piloting innovative new approaches to public engagement including online discussion forums (both through dedicated City websites and our TalkVancouver online forums), use of social media such as Facebook and Twitter, and innovative programs targeted at reaching a broader spectrum of our population

Moving forward, the City of Vancouver continues to pursue innovative and creative new ways to engage its diverse public and build community capacity in a growing and changing population. For example, the recent Greenest City Action Plan was built around a comprehensive public outreach program which included an online engagement forum with over 3,000 users, a range of engagement events (including a Pecha Kucha night, Ideas Slam, Open House, Alfresco Dinner, and more), external advisory committees, an 'greenest city' unconference, DIY consultation kits, webinars and extensive use of social media.

HEALTHY AND EQUITABLE ECONOMY

Criteria for an Ecocity: The city's economy consistently favors economic activities that reduce harm and positively benefit the environment and human health and support a high level of local and equitable employment options that are integrated into the ecocity's proximity based layout and policy framework – the foundation for "green jobs" and "ecological development."

According to background research done for the Greenest City Action Plan, Vancouver has about 11,000 'green jobs' (as defined in the Vancouver Green Economy Working Paper) in 8 sectors (about 3% of our jobs). Current plans aim to double the 2010 number of green jobs by 2020 and to double the number of companies that are actively engaged in greening their operations over 2011 levels by 2020. The green economy is now a centerpiece of the City's economic development strategy through the 'Vancouver Green Capital' brand and programs/incentives to build and locate green industries in Vancouver.

LIFELONG EDUCATION

Criteria for an Ecocity: All residents have access to lifelong education including access to information about the city's history of place, culture, ecology, and tradition provided through formal and informal education, vocational training and other social institutions.

No information available.

WELL BEING – QUALITY OF LIFE

Criteria for an Ecocity: Citizens report strong satisfaction with quality of life indicators including employment; the built, natural and landscaped environment; physical and mental health; education; safety; recreation and leisure time; and social belonging.

No information available.