urbinsight™

STARTER KIT

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GLOSSARY

EWMP: EcoCitizen World Map Project
GIS: Geographic Information System
PCP: Project City Partner
UMIS: Urban Metabolism Information System

1. Introduction to Urbinsight

a. What is an Ecocity?

How do we approach urban planning and resource management in ways that preserve health and environment while meeting our basic needs? The Ecocity represents an urban ideal that simultaneously envisions and plans for co-benefits and synergies between its various systems. It recognizes the holistic ways that transportation planning, for example, impacts material, food, water and energy flows as they move through the city environment.

The Ecocity Framework understands cities and human settlements as urban ecosystems with both bio-geo-physical and socio-cultural elements. Like natural ecosystems, urban ecosystems include concentrations of people and economies, and the built environment as well as the productive ecosystems generating the energy and matter required to sustain the whole. Only if the urban system is ecologically and socially complete and healthy does it have a chance of becoming self-reliant and sustainable.

The Ecocity Framework includes the bio-geo-physical conditions of a healthy urban system (clean air, clean and renewable energy, nutritious and accessible food, responsibly managed resources and materials, healthy soil, and clean and available water), urban design considerations, ecological imperatives and socio-cultural dimensions for healthy populations. See the IEFS Brochure for further information, available here: **http://bit.ly/14OB4Cs**

So who is an Ecocitizen? Everyone who lives in a city represents a potential Ecocitizen in training. Shifting our cities toward Ecocity status requires listening to citizens and that they listen to each other. Citizens already have a deep and intimate understanding of, and interaction with, systems within a city.

In that sense, Urbinsight is concerned with holding up a mirror to support the visualization of these systems within a broader system. Such a platform not only documents the articulation of historical information/archival knowledge and preferences but can also sustain and further initiate citizen engagement in land-use planning policy, resource management measures, advocacy for regional change, technical skills and capacity-building and mitigating resource-related conflict.

For anyone living in a city, it's important to think about the different methods and tools available for engaging citizens in the urban planning process. Careful consideration needs to be given to methods that are both culturally and locally relevant and issues of accessibility.

b. Why Participatory Planning?

Participatory planning involves people who are concerned about or most affected by a community issue taking a leading role in producing and using knowledge about this issue with the goal of devising urban planning or policy-based strategies to resolve the issue. To support

citizen leadership in decision-making, data collection, analysis, publication and planning for such strategies, participatory planning is typically done in collaboration or partnership with others who have relevant research skills.

Participatory planning is an approach, not a method, which means that a number of methods can be integrated as part of a participatory planning process, such as group discussion, surveys, art, mapping. It is an approach driven by participants, and specifically, the group of people who have a stake in the environmental or social issue being researched. It offers a democratic model of who can produce, own and use knowledge; it is collaborative at every stage, involving discussion and collaboration; and it is intended to result in some action, change or improvement on the issue.

This approach to urban planning is in stark contrast to traditional processes where consultations with such stakeholders, who would be directly impacted by the development policy or project, represent a perfunctory step prior to implementation.

c. What is Urbinsight?

Urbinsight is a next-generation mapping and data analysis platform designed for participatory mapping and planning processes. The goal of Urbinsight is to provide engaged cities and citizens with the necessary tools and technology to affect the resiliency and sustainability of their cities and settlements in a positive way.

The Urbinsight platform is built as a web app allowing for ease of use and less hardware than traditional mapping programs. The web architecture is completely open source, allowing for diverse implementations that can be enhanced to better accommodate project needs and goals. The platform features a toolkit and methodology structured to facilitate resource management, community engagement, city planning, and environmental design.

The process and methodology of Urbinsight is fundamentally participatory. An important consideration within the context of participatory planning and open data is the means through which data will be aggregated and disseminated. This is why it was decided that Urbinsight would be a web native application, not dependent on any one operating system.

Urbinsight will democratize access to planning and development data, in an effort to make the processes of urban design and policy more inclusive. This framework extends through the collection and synthesis of base layer data, to the environmental assessments and use of the Urban Metaflow toolkit. Through the use of the Urbinsight framework and platform, partnerships and knowledge exchange will be facilitated between municipal governments, educational institutions, and community based organizations.

Urbinsight also has an integrated online library of versatile educational resources entitled EcoCompass, which is a participatory research curriculum for urban resilience that was developed in partnership with multiple universities. The EcoCompass includes training-of-

trainers (TOT) resources, interactive workshop activities, downloadable presentations, a database of best practice documents, video tutorials, and exchange forums where ideas and queries can be posted. More available on Urbinsight can be found here: **http://bit.ly/14OAEf9**

The Urbinsight platform has a user interface that allows project city partners to upload and analyze the data collected, is currently undergoing an overhaul. Features and functionality of the platform are being programmed to create a more coherent and comprehensive user experience. As such, data management methods may evolve before the release of the updated platform in November 2015.

Ecocity Builders, primary developer and curator of the Urbinsight platform, pedagogical approach, and project city partnerships, is developing an intranet to keep its network engaged and informed on software updates, fixes and releases. The Urbinsight Starter Kit will be hosted online as well.

***Note**: the Urbinsight platform including all of its features and EcoCompass resources are in the midst of a rebranding campaign. Originally, all online tools, educational materials and project city partnerships were grouped together under the title of the EcoCitizen World Map Project (EWMP). While this document attempts to standardize all references to the project with the new branding, there may be instances in other documents that are still pending such revision.*

2. Getting Started

This Starter Kit is formatted for the project city partner (PCP), which can be any of a diverse set of stakeholders in the urban environment. It assumes the audience is either a grassroots citizen-led group, non-profit organization, academic institution, branch/department of municipal government or any combination thereof.

To help guide the PCP through the key decision-making points and tasks for initiating an Urbinsight project in their city, the following Decision Support Diagram provides a visual reference: **http://bit.ly/1BOJFUc**

The steps below can be taken sequentially or adapted according to the point of the process in which the organization is already engaged.

a. Community Asset Inventory

Every neighborhood has a wealth of stories that shed light on resource management and urban planning. An important place to begin with exploring the potential for Urbinsight in a city is by the PCP taking inventory of the non-profit organizations, academic institutions, community-based groups and individuals that are working and/or living in places where there is a critical need for support.

Typically, low-income and marginalized neighborhoods in a city have a direct or indirect network of leaders and/or groups striving for improved health conditions, equity, social justice, ecological preservation or any combination thereof.

The following document is a two sheet-workbook, for Community Asset Accounting, with descriptions in the comment windows for the headers: **http://bit.ly/1t6EbLj**

b. Identification of Key Partners

i. Academic Institution

High schools, technical colleges, universities and other training centers represent important partners in their capacity to support skills training and research relevant to the Urbinsight. These are also the sites where students can test and validate data collection and analysis methods being applied at the neighborhood scale.

Reciprocally, the EcoCompass materials provide practical opportunities for the academic institution to engage in participatory planning methods. Integration of the educational materials foster a research culture that is citizen-led, oriented towards community issues, and geographically relevant in its focus on collaboration within the neighborhood, city or region.

Beyond providing research facilities, technical know-how, and student involvement, such academic institutions—particularly universities—have access to funding that can be used to support larger interventions and pilot projects as defined by the community.

ii. Non-Profit Organization / NGO

Non-profit organizations are any groups involved in citizen issues (e.g. human rights, environmental health, etc.). Non-profit organizations can bring a strong set of skills to the project through their experience with advocacy, policy analysis, coalition-building and community outreach.

iii. Community-Based Group

Urbinsight takes a bottom-up approach to research, engaging in a participatory process of data acquisition, input and analysis. Including citizens in planning processes through genuine, tangible and translatable ways also promotes community-centered and equitable development, leading to broad-based accountability and participation in planning decisions.

Community-based groups represent organizations whose primary services directly benefit a neighborhood or community (e.g. housing tenure, food security, etc.).

iv. City Government

Decision-makers with the municipality have immense influence on how data is disseminated, how citizens are engaged in urban planning and development, as well as how various sectors of municipal services interact and work together.

At the initial stage of an Urbinsight project in any given city, it is critical for city government officials to communicate their participation across operational departments and governance levels (e.g. city council, state ministries). As a champion for this project, a city government can facilitate the sourcing and opening of datasets for public distribution and citizen engagement.

c. Focusing the Vision

As a next step, after filling out this information, key partners identified are to be contacted and an initial meeting is to be coordinated. A tentative agenda should be drafted for this initial meeting.

d. Refining the Work Plan

At the initial stages of refining the work plan, the PCP's involved find alignment and agree to a scope of work relevant to their discussions. Core concepts of the Urbinsight platform and EcoCompass approach are distilled and contextualized according to existing projects and cultural relevance.

Points of alignment are determined with existing programs and projects of the organizational partner. Ecocity Builders and the PCP need to assess internal capacity, community engagement, and technical priorities for ensuring the Urbinsight platform and tools support on-the-ground needs.

3. Implementation

a. Education and Research Justice

Given the focus of the Project on research and its international scope, power and privilege can influence the outcomes and shape the dynamics for the Project.

In this vein, it is necessary to carefully examine how the project evolves over time through the lens of research justice. Traditionally, marginalized communities have experienced and witnessed research-related oppression in myriad ways. These include little to no access to information from academic and governmental institutions because of language limitations, cost, and privatization of information; little to no control over the means of their own knowledge production; communities portrayed or represented negatively through biased lens; community knowledge not being recognized as a legitimate source of information, and voices within a community being dismissed as being anecdotal or biased.

Ecocity Builders and the PCP's seek to mitigate and counteract these trends as part of the

Project, its platforms and programs by undertaking a set of strategies, available here: **[Link not yet available]**

i. Adapting the Curriculum

A main objective of the courses is to prepare students for leading knowledge transfer activities when working with the community-based organizations, to build citizen capacity in the research, analysis and planning as part of the Bootcamp Training and beyond. There are two proposed scenarios for academic institutions, such as colleges and universities, participating in Urbinsight. They can either weave EWMP activities into an existing course's curriculum, or adopt and customized the EcoCompass Course developed for Urbinsight.

In either case, the course curriculum may be more survey-based or more focused on data analysis. In the first scenario, relevant resources are integrated into the course syllabus while select seminars and labs, that complement course objectives, are offered in accordance with the Project's needs. This may be more compatible for engaging classrooms at the undergraduate level, senior high school, or in technical programs at colleges.

In the second scenario, the school adapts and institutes the EcoCompass Course; a curriculum specifically crafted for the intended purposes of the EWMP. This may be particularly suited for the ongoing research activities at the graduate level. In this scenario, the course uses seminars and labs to methodically cover five distinct areas relevant to the EcoCitizen World Map Project.

These areas are: EcoCities and Sustainability Indicators, Systems Approaches, Participatory Mapping, Neighbourhood Audits, and Citizen Engagement. The courses are also a critical step in collecting background and base map information about the city and study area that will serve as a foundation for the UMIS and GIS established as part of the EcoCitizen World Map for the pilot city. For example, as part of the classroom activities, students are expected to collect figures on UMIS resource flows, set up the relevant GIS geodatabase, and determine what existing PPT have been applied to the study area.

The EcoCompass Compendium provides an example of lesson plans, lab exercises and presentation materials available for delivery to participants at the academic institution or non-profit organization. It is available here: **http://bit.ly/1uzltyT**

ii. Piloting the Coursework

The curriculum, including all the instructional material, is a shared resource that is expected to evolve through input and advice provided by the academic committees and students at the participating universities.

Sharing of instructional material and innovative teaching methods from one school to another is encouraged as part of our project-based collaboration. Input from course delivery will be

used to fine-tune the course and create a replicable method for applying PGIS and UMIS at the neighborhood scale.

Each section follows a standard format, moving from interest-provoking information and testimonials, to key messages, to labs and other types of self-learning exercises, to multiple choice quizzes and essays as opportunities for reflection. Each section and corresponding activities are structured to address an agreed set of specific learning outcomes, with Standards of Performance identified wherever possible.

Learning Outcomes describe the skill or concept that students are expected to demonstrate and have working knowledge of by the end of the seminar or lab. Instructional Materials include prepared slide decks that can be downloaded and adapted by the course instructor. Similarly, Suggested Activities include prepared handouts that can be downloaded and adapted by the course instructor, and identify what further materials, equipment or facilities may be required to undertake the activity; requirements are not compulsory but involve software and hardware applications that can facilitate learning through data collection, organization and analysis.

Background Resources provide instructors with a list of linkable multimedia documents to support a more comprehensive understanding of the topic.

iii. Supporting Citizen Leadership

A Leadership Roundtable event is held with the community-based group, defining the boundaries for the jurisdiction (i.e. neighborhood) to be investigated. The meeting aim is to identify priority issues and concerns of environmental and social relevance for the city generally, and neighborhoods represented there, specifically.

It is also crucial to decide upon priority concerns, determine preliminary indicators, confirm a methodology and defining a collaborative way forward in the implementation. Refer to the Leadership Roundtable Coordination document here: **http://bit.ly/1vuAe9D**

b. Collecting, Opening and Visualizing Data

i. Gather City Data and Indicators:
Official Sources including Government, Utility and University Databases

As part of building the GIS and UMIS, existing tabular and spatial datasets must be identified, sourced and organized into a single database.

Top-down data consists of municipal, regional or state/province-wide datasets systematically collected for the categories of bio-physical spatial data; cadastral data; infrastructural spatial data; infrastructural tabular data; socioeconomic, environmental and resource consumption spatial/tabular data.

In this way, project city partners are laying the spatial foundation of natural and built form upon which we can then begin to build a picture of social and environmental data.

These data sets do not necessarily need to be sourced sequentially, however it could mean that pilot city team members are moving in tandem with separate data collection goals. The Data Request Sheet is available for download here, and features the option for tracking the status of datasets identified, sourced, and organized in the GIS and UMIS: **http://bit.ly/1Ho1qdo**

ii. Gather Neighborhood-Level Data and Indicators: Citizen-Led Sources including Parcel Audits, Citizen Surveys and Environmental Testing

To guide and monitor the healthy development and maintenance of the urban eco-system, there can be varying indicators that are established to determine the state of a city, town, village or neighborhood according to these standards and determine how it performs.

This can also ensure that interventions in planning support its sustainable transition towards an Ecocity standard. Potential indicators and metrics can address carrying capacity, capital and other indicators. Defining these through citizen leadership, however, means taking a long-term view, addressing links between pressures and states within the neighborhood(s) and ensuring they are reflective of community needs.

Through intensive trainings between participants of the PCP's, citizens collect such datasets as EcoCitizen short form surveys about quality of life; develop building typologies and conduct audits on numerous critical resources (i.e. water, food, materials, energy, transportation); and undertake environmental testing (i.e. water and air samples) at different sites within the study area (i.e. the neighborhood or other defined jurisdiction). A more detailed description of the Citizen-led Data Collection Practices is available here: **http://bit.ly/1xTBSzl**

iii. Aggregate and Format Data

Before quantitative data can be added to the GIS and UMIS, it must be cleaned, validated and verified. Ecocity Builders can support the PCP with such tasks. The data must also be aggregated for some citizen-collected data, particularly for parcels and households.

Audited buildings can be used to generate fairly accurate estimates of systemic flows for any combinations of buildings, or for the neighborhood as a whole. Using such estimates can calculate automatically the Key Performance Indicators (KPIs) for a neighborhood, and citizens can then benchmark performance against other locations.

They can help everyone focus attention on the big problems; capacity limits for example, or ecological footprints, or wasteful practices. They can reveal neighborhood scale opportunities for recycling and cascading of resources, or alternative sourcing. And they can help to generate a set of present and future system diagrams that tell a 'story' for how the neighborhood might

transform over time. To accomplish this type of bottom-up modeling, it is necessary to sort all audited parcels into the most appropriate Archetype Folders, so that we can use these Parcels as proxies for a segment of the total stock.

The following Aggregator Lesson Plan provides an example of the aggregation steps necessary to translate multiple audits—collected by citizens as they survey their neighborhood—into a single profile for a building type to help understand its resource demand and management: **http://bit.ly/1F6f8gS**

iv. Upload Data to Online Mapping Platform

The PCP's can upload quantitative and qualitative datasets to the GIS or UMIS of the Urbinsight platform through an innovative and intuitive user interface. For examples of earlier generations of such tools, demonstrating the ease with which users can easily collect and display data, refer to this online map: **http://bit.ly/1m3feRq**

4. Evaluation and Application of Results

a. Review and Analyze Data and Maps

Once the project city partner team has reached the desired point of completion in the process of collecting, aggregating, and formatting data and translating it into visual representations (maps, urban resource flow diagrams, etc.), the key partners then meet to review and discuss the work and the products that have been generated.

An initial team meeting or workshop session provides a forum for the various participants in the project to go over the maps, diagrams, and other graphics; to share observations; and to begin to draw insights and conclusions.

b. Share and Disseminate Results

The team may wish to produce a written report that presents the background, context, methodology, findings, and conclusions of the Urbinsight project in their city. See an example of the Urbinsight (i.e. EWMP) report from the neighborhood of Imbaba in Cairo, Egypt, available here: **http://bit.ly/1F5KLJm**

After reviewing and synthesizing the results of the data collection and mapping work, the team may also be interested in sharing these results with a broader audience in their local community - for example, by making presentations to local government officials or by hosting a community workshop that is open to the public.

c. Utilize Results to Inform Local Policies or Planning Efforts

The purpose of the discussion, synthesis, and sharing of the results of the Urbinsight process is to generate ideas about the types of projects, interventions, or policies that might be undertaken to improve environmental, social, and economic conditions and quality of life for the communities in focus. Such projects could be initiated and led by any of the project partners - an academic institution, a community organization, a citizen or neighborhood group, a city government agency, or another public entity.

For example, if the data collected and the maps produced show that the drinking water supply in a certain area of the city is unsafe, then a citizen group could decide to organize an effort to educate local residents about sources of contamination in the water supply, in order to encourage people to use less toxic household products and to avoid putting common water pollutants down the drains and into the city's water supply.

If the maps that are created demonstrate that residents in a certain outlying area of the city do not have access to reliable and convenient public transportation to get to work or school, but citizen surveys reveal that those residents would use public transportation if it were available, then the municipal government or local transportation authority may determine that there is a need to extend bus or rail service into that area. They may also seek to meet with residents of that area to gather information on transportation needs and to engage residents in helping to select and plan the location and route of the new transit service.

The ideal outcome of an Urbinsight project in a partner city is to generate and share information and knowledge that is then used by citizens, academic institutions, civil society organizations, and local government to address urban environmental challenges.

With greater knowledge, better access to information, and stronger capacity, citizens and local groups can take an active role in improving their city's ecological and social well-being, whether through grassroots efforts or more formal channels.

Urbinsight is a project of Ecocity Builders
www.ecocitybuilders.org

For more information:

Kirstin Miller, Executive Director
kirstin@ecocitybuilders.org

Dave Ron, PIT Program Manager
dave@ecocitybuilders.org