Mapping Sustainability at the University of Illinois

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I. Detailed Project Description

Project goals

The primary goal of this project is to inform both the university community and the greater Champaign-Urbana community of "green" businesses and organizations in the Champaign-Urbana area. This goal will be achieved through two outlets. First, we will produce a pamphlet including a map of the sustainable efforts in and near Champaign-Urbana. Second, an online map on the website GreenMap.org will display the efforts of the larger community as well as smaller sustainability efforts such as bike racks, bus stops, and recycling receptacles. Both will be available free of charge to campus and the public and will assist in promoting sustainability efforts at the University of Illinois and beyond. The value to the university will come in part from publicizing sustainability efforts here on campus, but also from making opportunities for green and/or local purchasing more visible for people on campus and in the community (such as a printing company using sustainable materials and processes or local sources for university food services).

The secondary goal of the project is to provide a service-based learning opportunity for the Introduction to GIS (Geographic Information Systems) course offered by the Department of Geography. Students will contribute to both maps throughout the Fall 2009 semester as part of their coursework, thus giving them a chance to develop their GIS skills and contribute to a project that benefits the campus community.

Definition of sustainability

There are many ways to define sustainability. Generally speaking, meeting the needs of the present without compromising the needs of the future environmentally, economically, or socially defines what sustainability is, because it is not just about the biosphere but also about the economic and social structures put in place by humanity. This project would promote this definition of sustainability by informing consumers of green businesses, garnering social and economic interest in sustainable business practices for business owners as well as sustainable purchasing for consumers. For inclusion purposes, he definition of "green" or "sustainable" would largely be up to the business or organization; anyone who advertises green products or services would be included, as well as organizations such as farmers' markets, organic food stores, and electronics recycling.

Longevity and permanence

This project will provide a reference for green businesses and organizations. Development is constantly occurring, however, and the Champaign-Urbana area is no exception. Businesses that are not considered green now will adopt green practices in the future, new green businesses will arrive, and current green businesses will leave,

so revision of the map will be necessary over time. While this will be simple to do for the online version, which will be hosted at GreenMap.org, the pamphlet will have to be updated and reprinted as necessary.

Location

The project will be implemented online through GreenMap.org and through the distribution of pamphlets, which will be made available through the Student Union, major libraries, the Office of Sustainability, student residence halls, and other locations as necessary.

Comparisons to other campuses

Many universities have implemented similar ideas that can be used as models. For example, Ohio University in Athens, Ohio made a pamphlet printed on recycled paper and with soy ink that includes one map of the green businesses Athens County and another that points out campus efforts towards sustainability (Figure 1). Differing symbology indicates the different types of sustainable efforts represented by the businesses. There is also an explanation of what green business contributes to the community and what spurred the creation of the "Green Guide."

The University of Idaho in Moscow, Idaho, is one of many universities that has produced an online map for GreenMap.org (Figure 2). The Map incorporates Moscow into the map although it focuses more on campus efforts towards sustainability. The map encompassing Moscow highlights parks and other major areas of environmental stewardship. When zoomed in on the university, features as large as buildings and as small as recycling receptacles are marked, both of which contribute to the university's sustainability efforts in some way, large or small.

As society moves swiftly through the first decade of the millennium, there is a growing consensus among the general population that we must think more sustainably. Humans are not above the natural order of planet Earth; instead, we are a very influential and frequently destructive piece of the puzzle. With more than 6.5 billion human residents on earth, projected at 9 billion by 2050, it is crucial that we begin to think about living in a different way. We must recognize finite resources, we must not tolerate exploitation of the environment or other humans, and we must believe that a healthy planet is one that will sustain human life for generations to come but not at the expense of biodiversity.

The Athens Green Guide is designed as a tool for you to locate businesses, organizations and public services that are making an impact on the sustainability of the region and consequently the world. Not all locations are considered equally sustainable; some are more progressive than others. It is important to realize that every entity has room to grow and enhance its commitment to sustainability. As consumers and tax payers, you have the power to catalyze change. By supporting businesses, organizations and services that demonstrate sustainable practices, you are sending a message that it is a marketable trait to be socially and environmentally conscious.

This guide was printed in black and white in order to minimize the cost of reproduction. Please copy it and pass it on to a friend or a total stranger!

This is the first edition of the Athens Green Guide, and it is an evolving project– input is welcome. Please feel free to direct questions, comments, and any desire to assist in future projects to Sam Pepple. sp962204@ohio.edu
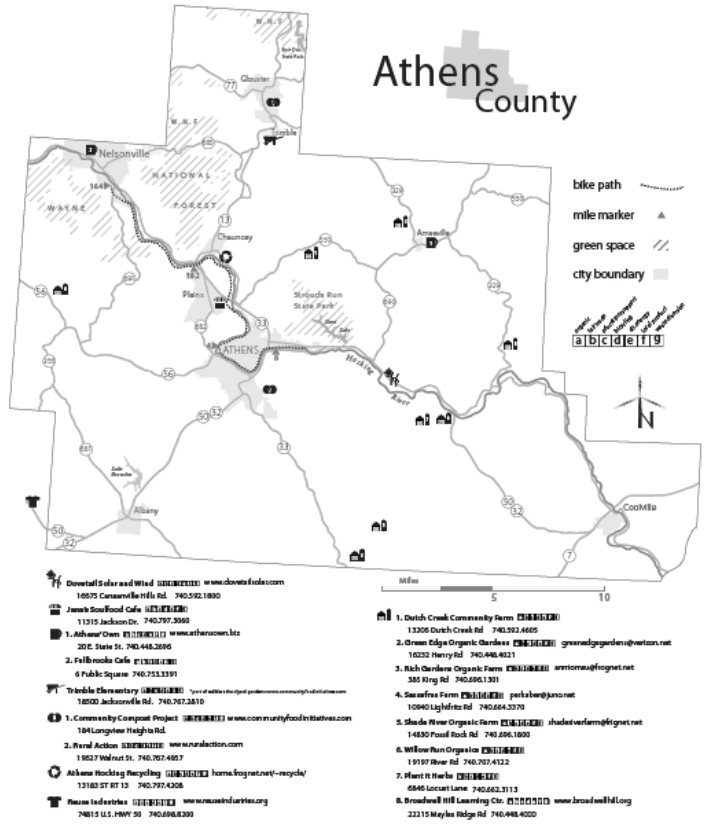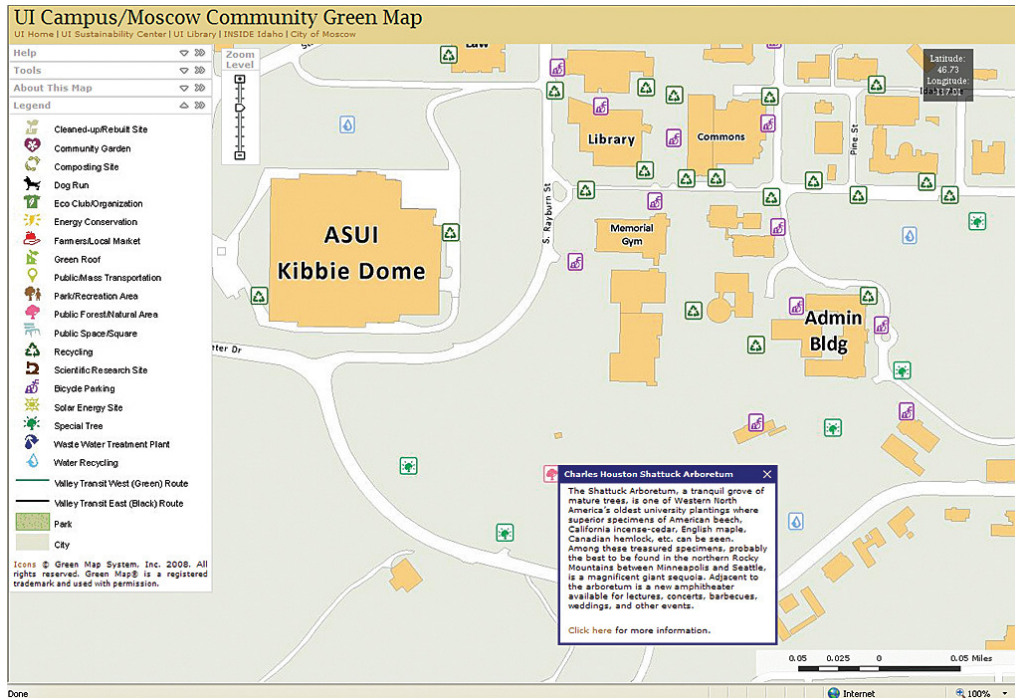
Figure 1. Ohio University's Sustainability Map.

Figure 2. University of Idaho map at GreenMap.org.

II. Budget and Fundraising

Detailed budget

Total cost: $5,700.

See attached sheet for detailed information.

If the Committee does not fund the project, the GreenMaps.org portion will still be possible to do as a class project, but only for sites on and near campus. The printed sustainability map, which will be useful to the larger community, will not be produced without the Committee's funding.

Fundraising

Additional GPS units will be obtained through a grant that the Project Lead has received from the Illinois Informatics Institute for course development. Also, the secondary contact has applied for funding from the Department of Geography in the form of a Roepke Fellowship which would enable her to carry out half a year's worth of the project research. Should she receive this funding, the requested budget would be reduced by $2000.

III.   Timeline

Assuming funding is received from the Committee:

June 2009-August 2009: Preliminary work by the undergraduate RA and the Project Lead, including analyzing existing university green maps to determine the common features recorded and displayed and deciding what features will be mapped for campus and Champaign-Urbana. GPS units will be obtained. Project Lead will re-work course syllabus to include the service-based learning component.

August 2009-December 2009: Undergraduate RA and GIS class of approximately 40 students will collect data, including but not limited to the locations of bicycle racks and routes, recycling bins, electric vehicle charging stations, green buildings, projects previously funded by the Committee, etc., and community features such as businesses that advertise sustainable practices and products. Students will map these data through geocoding and georeferencing.

January 2010-May 2010: Undergraduate RA will refine and verify the data and produce the final online map as well as the pamphlet. The pamphlet will be distributed to University offices in Summer 2010 to be ready for the Fall 2010 semester.

IV.   Energy, Environmental, Social, and Economic Impact

Environmental impact

This project would have both positive and negative environmental, social, and economic impacts. The energy impacts of this project would exist through the use of recycled paper and soy ink as well as the energy required to host the final map at GreenMaps.org. On the other hand, the positive environmental impacts include this same use of recycled paper and soy ink. Recycled paper reduces energy consumption, reduces the release of methane from decomposed paper in landfills, reduces the space taken up in landfills by paper, and reduces water and air pollution caused by paper mills. Soy ink takes less energy to make than petroleum-based ink, reduces air pollution due to lower levels of volatile organic compounds, is a renewable resource, and spreads further than petroleum-based ink, therefore requiring less ink. The Web

portion of this project also has positive environmental impacts since it requires no use of paper, ink, or printing, although it does require some energy use to be maintained.

Social impact

The key positive social impact would be the increase in awareness of sustainability as a whole. This would increase awareness of sustainable practices and would spur people's interest in taking part in these practices, as well as make the community more aware of the sustainability efforts of the University. The main negative social impact is the fact that only certain people would have access to the information. Since the pamphlets would be available on-campus, only those who have access to campus would have the ability to obtain one (although off-campus distributions sites will be sought as well). In the case of the Web-based map, only those who have Internet access would be able to reach the map. This could perpetuate the stratification of the "haves" and "have-nots" on each side of the digital divide.

The positive economic impact is the support and recognition that local businesses would receive, since it is these types of businesses that engage in sustainable enterprise. This could also influence other businesses to follow sustainable guidelines and use local resources, therefore indirectly stimulating the local economy. The negative economic impact would be the omission of unsustainable businesses that offer similar products and services as the sustainable businesses. This could negatively impact their business.

V.   Outreach and Education

This project would have high visibility to students. The pamphlets would be available in areas of campus that are commonly used. Since the pamphlets would be

to no cost of the students, they would be easily accessible. GreenMap.org is a well-known Web site, gaining recognition for its innovative way of increasing sustainability awareness. The Web-based map would be accessible to anyone with Internet access across the world, allowing for very high visibility for the University's efforts.

This project would be integrated into the Introduction to GIS course offered in Fall 2009 because the class deals with creating maps such as the ones created in this project. Data collection and mapping would also involve students enrolled in the course, which is required of all majors in the Earth Sciences, Environment, and Society program of the new School of Earth, Society, and the Environment and is also well-attended by majors from geography, natural resources, anthropology, urban planning, and agriculture. Since updating the map would be necessary over time, revision of the map would be included as an exercise in future courses. The project will teach relevant functions such as using GPS, ArcGIS software, and how Web mashups are created with the real-world example of the sustainability maps.

GIS software giant ESRI published an article about the University of Idaho's green map in its in-print and online magazine *ArcUser* in Fall 2008. The *Chicago Tribune* published a similar article about Columbia College's green map. These are just two examples of the interest that media takes in the new technologies that institutions of higher education are using in their sustainability initiatives. Campus publications such as the *Daily Illini* and the *Technograph* as well as local media coverage would be interested in this project, as it is useful locally for consumers and business-owners alike.

Many courses in departments across campus teach students about sustainability and the difficulties with implementing programs and initiatives that work against the negative impact of people's actions on the environment. The questions "what can we do?" and "where do we start?" are ever-present in discussions, as the task of revitalizing sustainable lifestyles is quite intimidating. As the University works to strengthen its efforts through the Office of Sustainability, making those efforts visible is vital to it success. By mapping sustainability across campus and in the larger community, this project would be an excellent way to get the word out on what businesses and organizations are already doing and to encourage further sustainable behaviors in Champaign-Urbana and at the University of Illinois.