

# **The Natural Step for Communities How Cities and Towns can Change to Sustainable Practices**

Sarah James & Torbjörn Lahti

## **Discussion Course Overview**

Sustainability may seem like one more buzzword, and cities and towns like the last places to change, but *The Natural Step for Communities* provides inspiring examples of communities that have made dramatic changes toward sustainability, and explains how others can emulate their success.

The objective of this course is to provide you with the knowledge of the Natural Step framework and how it can be applied to sustainability related issues facing your community. In some cases, this course may also help you understand issues and potential solutions that you previously were not aware of. The course will be helpful to both community members wishing to understand better what sustainability means and practitioners interested in introducing or expanding sustainable development in their communities.

A discussion course format allows you better understand the different perspectives and approaches to the complexity of sustainability. In addition, this discussion course is intended to be a supportive learning experience, so please ask questions of clarification and share insights with one another. Whether you agree or disagree, you will have an opportunity to talk about an important subject with others who share your concerns, and hopefully have fun along the way!

The book used for this discussion course first clarifies the concept of sustainability, offering guiding principles -- the Natural Step framework -- that help identify sustainable action in any area. It then introduces the sixty-plus eco-municipalities of Sweden that have adopted changes to sustainable practices throughout municipal policies and operations. The third section explains how they did it, and outlines how other communities in North America and elsewhere can do the same. Key to success is a democratic "bottom-up" change process, and clear guiding sustainability principles such as the Natural Step framework.

Upon completion of this course, it is our hope that each participant will have a better understanding of how sustainability might be achieved at the level of the community and become more engaged in that process.

## **About the Book's Authors**

Sarah James is the principal of a community planning consulting firm. She co-authored the American Planning Association's *Planning for Sustainability Policy Guide*, and has published articles throughout the U.S. on this subject. Torbjörn Lahti was the planner for Sweden's first eco-municipality, and is directing a five-year sustainable community demonstration project. He was instrumental in forming the Swedish national association of eco-municipalities.

## **About Sustain Dane**

We are a nonprofit organization based in Madison, Wisconsin, committed to creating a community that deeply enjoys, cares for, and is sustained by its unique environment. Sustain Dane takes a collaborative approach on a variety of programs and projects ranging from organizing sustainable discussion groups to assisting in the development of an international sustainable community network. In helping our community find better ways to live in the world, Sustain Dane undertakes the following activities:

## **Discussion Courses**

Provide an enjoyable, supportive setting in which to examine personal values and habits, engage in stimulating discussion, and make personal changes if desired. Courses offered include:

- ***Voluntary Simplicity*** - An eight session course addressing the distractions of modern society that keep us from caring for ourselves, our relationships, and our environment.
- ***Choices for Sustainable Living*** - A nine session course exploring the meaning of sustainable living and the ties between lifestyle choices and their impact on the earth.
- ***Discovering a Sense of Place*** - A nine session course focusing on knowing and protecting our place.
- ***Globalization and Its Critics*** - A nine session course designed to understand the institutions, process and effects of globalization and to explore how personal choices affect globalization.
- ***Exploring Deep Ecology*** - A nine session course addressing core values and how they affect the way we view and treat the earth.
- ***Healthy Children Healthy Planet*** – A seven session course

## **PRISM**

*PRISM* is a news filter service for community members that provides links and summaries of the most recent news related to environmental, social and economic sustainability in the Madison and Dane County area. The stories that impact your everyday quality of life are compiled from local news sources and from local sustainability organizations and published weekly on our website. To receive the free weekly email of *PRISM* headlines, visit the PRISM section on our website and click on Subscribe.

## **NeighborNation.Net**

NeighborNation.net is a community-building website that enables people in neighborhoods to easily connect with each other around sharing resources, forming groups, and exchanging services.

## **SustainDane.org**

Our website that is full of in-depth information about our activities, upcoming events and other initiatives. The website also features information about frameworks for sustainability, examples of sustainable practices, links to related sites, and various resources for learning more about sustainability related issues.

## **Sustainability Listserv**

The listserv is a forum for sharing ideas, resources, questions, and announcements related to sustainability. Subscribers to the listserv have a range of backgrounds - including government, academia, public utilities, business, and citizen activists. To join, send an email to [sustaindane-subscribe@yahoogroups.com](mailto:sustaindane-subscribe@yahoogroups.com)

## **Resource Collection**

Sustain Dane has worked in partnership with the South-Central Library System and Madison Gas and Electric to add over 300 books related to sustainability topics to area libraries. Additionally, resources are available at the Sustain Dane office.

## **Speaker Events and Workshops**

From time to time, Sustain Dane hosts, sponsors or supports sustainability related workshops, presentations, and speakers such as David Orr, Milenko Matanovic, Nina Leopold Bradley, and Torbjorn Lahti.

## **Sustain Dane, Inc.**

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## **Guidelines**

This section contains a list of suggested guidelines, based on years of experience, to help ensure a successful, positive course experience for every participant. Please review before the first discussion session.

- Read the course materials and review questions before each session. A better prepared group will have better discussion.
- Begin and end each session on time. Your session will go by very quickly. To make the most of each session, make sure to begin and end on time.
- Don't get stuck on the authors writing style or the format of books contents. Understand that the book was not originally intended for a discussion course.
- Think of the discussion as a way to practice clearly stating your perspective on the issue for future opportunities for conversations with other community members and leaders.
- Attempt to keep the discussion positive. At times, the issues and challenges we face can seem overwhelming, especially in the context of sustainability.
- Self-monitor time. Time will be limited and other participants may have just as much to say as you do.
- Seek clarification of terms by asking other participants or referring to the glossary provided at the end of this course packet.
- When discussion issues that you may already be quite familiar with, challenge yourself by asking tougher related questions or seeking deeper, more systematic solutions.
- Don't spend too much time or detail on problem-solving. If possible, note ideas for potential solutions or actions and move on to the next discussion questions. It is best to revisit these potential solutions or actions at the course celebration.
- Please reserve comments on others participant's responses to the circle question.
- A response is not mandatory for each question. If you do not have a response for a particular question, simply say "I pass."

## **Facilitator**

Each session of the Natural Step for Communities discussion course is facilitated by a volunteer. The facilitator is not the “teacher” but is used to assure the process below is followed in the course.

1. The facilitator’s principal role is to stimulate and moderate the discussion by asking questions identifying key points, and managing the group process. The facilitator is not an expert, does not have the answers or may even not be the most knowledgeable person about the topic for the week.
2. The facilitator will keep the discussions focused on the session’s topic.
3. Some questions are designed to be answered as a group, others by each individual participant. The facilitator will look for and acknowledge questions to be answered by the group as a whole.
4. A primary goal is for everyone to participate in each session. As facilitator will try and draw out quiet participants by creating an opportunity for each person to contribute.
5. On the other hand, an important role of the facilitator is to restrain a domineering participant. The facilitator will try and not let one or two people take over the conversation.
6. The facilitator will start each session by calling on the designated participant volunteer(s) to do an opening before start of the discussion.
7. The facilitator will follow the opening with the circle question.
8. Evaluations of the readings and discussions should be completed each week. The facilitator should remind each participant to fill out their weekly evaluation form at the end of each session.

## **Opening**

Many U.S. communities are now implementing some form of sustainable development – climate change initiatives, green building programs, brownfields redevelopment, open space preservation, affordable housing, for example. These largely are occurring on a project-by-project or issue-oriented approach – sometimes called the “silo approach” to sustainable development.

Before sessions two thru six, one or more participants should volunteer to identify\* a sustainable development projects or initiative that is going on in your community or region that relates to the particular session. At the beginning of the session, the opening volunteer(s) should explain\*\* the sustainable project or initiative that they have conducted research on. Next the entire group should examine it more closely by using the sustainability objectives as a checklist. Does this project or initiative lead toward the four objectives? If not, how might it be revised or redesigned to do so? The facilitator will demonstration an opening in the first session.

\*If you are not familiar with a project or initiative in your community that relates to the particular session, ask the facilitator for some suggestions.

\*\*If time permits, the opening volunteer(s) are encouraged to research the project or initiative by conducting an interview, visiting the site or obtaining related documents.

## Discussion Questions

### Session 1: Introducing Natural Step Framework and Sustainability (Chapter 1, 2 & 3)

Circle Question: Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be? (*Reminder to facilitator: The circle question should move quickly. Elicit a brief answer from each participant without comments or questions from others*)

1. Can you think of a principle (ecological, ethical, etc.) that helps guide you in making decisions? What is the principle? How is it helpful?
2. Can you identify and describe an experience you have had defining or explaining the concept of sustainability to people for the first time? Or, what have been your own challenges in understanding the concept? How might the sustainability objectives help address these challenges?
3. The authors talk about the importance of using an upstream approach to dealing with problems. Think of some of your community's or region's approaches in dealing with community or regional problems such as traffic congestion, challenges in education, homelessness, unemployment, or high health care costs. As a group, determine **three** examples of "downstream approaches" and **three** examples of "upstream approaches" to these problems?
4. The authors in the book note that "communities are complex systems...this complexity often results in actions or policies that can work cross-purposes or compete with each other." Have you experienced a similar situation in community? Explain
5. From what you have learned thus far about the Natural Step framework and what you know about your community already, to which issues in your community could the framework be applied to; immediately and easily? With the most significant impact?
6. Did reading this section make you want to do something differently or to take some action in your life? If so, explain.

### Further Reading and Resources:

*The Natural Step for Business: Wealth, Ecology and the Evolutionary Corporation* by Brian Nattrass and Mary Altomare (1999)

*Ants, Galileo, and Gandhi: Designing the Future of Business Through Nature, Genius, and Compassion* by Sissel Waage (2003)

*Our Ecological Footprint: Reducing Human Impact on the Earth* by Mathis Wackernagel (1996)

[www.NaturalStep.org](http://www.NaturalStep.org), The Natural Step website features information for government, business, academia, media and general interest visitors including case studies, articles and event listings.

[www.RMI.org](http://www.RMI.org), The Rocky Mountain Institute website features information for businesses, communities and government about how to create wealth without harming the environment.

## Session 2: Changing to Renewable Energy Resources and Alternative Transportation (Chapter 5 & 6)

Circle Question 1: The book introduces several examples of changing to renewable energy. Did you have any personal reactions or new insights to what you read about in chapter 5 of the book? If so, describe what those may be? (*Reminder to facilitator: The circle question should move quickly. Elicit a brief answer from each participant without comments or questions from others*)

Circle Question 2: The book introduces several alternative options for transportation rather than fossil-fuel vehicles, did you have any personal reactions or new insights to what you read about in chapter 6 of the book? If so, describe what those may be?

1. Technology can reduce our dependence on nonrenewable energy through efficiency and self-sufficiency. Explain the difference between the two approaches and examine the implications this might have on your community and the way you live your life?
2. As explained in the book, different Swedish communities use different sources of renewable energy. From what you know about these communities through the readings, describe how the features of these different communities may have helped determine their renewable energy sources.
3. Describe the land use and development patterns of your community that prevent them from getting to places other than by car.
4. In what ways might using alternative transit options in your community satisfy the fourth system condition? How can your community support the development of such options?
5. Besides decreasing emissions, the community of Eskiltuna, Sweden had been incentivized to redesign its transportation policy to reduce its use of salt, improve safety for children's walk-to-school routes and provide an alternative use for organic waste. Can you identify other benefits to the development of a less fossil-fueled dependent transportation system?
6. If you were to explain to someone the development of a sustainable transportation system in a Swedish community, which of the examples provided in the book would you cite? Why?
7. Did reading this section make you want to do something differently or to take some action in your life? If so, explain.

### Further Resources:

Energy Center of Wisconsin is an organization dedicated to finding ways to use energy more efficiently.

Bicycle Federation of Wisconsin is a statewide, non-profit organization that advocates increased bicycle use, access, safety and education.

RENEW Wisconsin advocates for clean energy policies and practices to create a more efficient and sustainable economy in Wisconsin.

### **Session 3: Eco-Housing and Green Building/Businesses (Chapter 7 & 8)**

Circle Question 1: The book introduces several example of eco-housing. Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

Circle Question 2: The book introduces several examples of green building/businesses. Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

1. Think of a building in your community (i.e. your home, library, church, etc.) that you liked to spend time in. What are its characteristics?
2. How does the design/layout of your current dwelling encourage or discourage alteration to be a more sustainable habitat?
3. Does your community have an affordable housing policy? In light of the fourth system condition, what factors should be considered when determining the affordable housing level for your community?
4. In light of the Natural Step framework, if you were a business owner, what steps would you take to determine how to make your business greener.
5. GreenZone was a carefully planned business park that included businesses that mutually benefited from each others products and by-products (i.e. Building heat for Ford provided by McDonald's frying oil, alternative fuel provided by Statoil sold to cars purchased at alternative fueled cars at Ford.) What businesses in your community might benefit from such co-location?
6. Did reading this section make you want to do something differently or to take some action in your life? If so, explain.

#### **Further Reading and Resources:**

*A Pattern Language* by Christopher Alexander, Sara Ishikawa and Murray Silverstein (1977)

Wisconsin Green Building Alliance (WGBA) is an organization committed to facilitating and promoting the development and use of ecologically sustainable materials and practices within Wisconsin's built environment.

Design Coalition, Inc. is a non-profit architectural and planning office that serves to empower people who are without access to quality design and construction expertise that specializes in socially conscious and ecologically responsible design.

Green Built Home is a voluntary green building initiative that reviews and certifies homes that meet sustainable building and energy standards.

## **Session 4: Eco-economic Development and Ecological Schools/Education (Chapter 9 & 10)**

Circle Question 1: The book introduces several example of eco-economic development. Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

Circle Question 2: The book introduces several example of ecological schools/education. Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

1. In which instances are you willing to pay more to buy a product or service from a company that has adopted sustainable practices?
2. What types of tools are used to encourage desired economic development in your community? Do these plans call for any type of green or sustainable business development? What are some green business programs or incentives for greening business could be offered?
3. In many instances, Swedish eco-economic development revitalized industries that were once native to the area such as fishing, animal husbandry, tourism, forestry and agriculture by rediscovering their local capacity. Which business were once part of your community's self-sufficiency economy. In the face of an ever specialized and globalized marketplace, how might your community begin to restore a local economy?
4. Does your community have a "living wage" policy? In light of the fourth system condition, what factors should be considered when determining a "living wage" level for your community?
5. As a student, what do you recall being included in your environmental education? Did you celebrate Earth Day or perform environmental science experiments in school, and if so, in what ways?
6. If you were to create a curriculum for children, how would you teach them about the Natural Step? What would the curriculum be for adults?
7. Did reading this section make you want to do something differently or to take some action in your life? If so, explain.

### **Further Reading and Resources:**

*Natural Capitalism: Creating the Next Industrial Revolution* by Paul Hawken. (1999)

*Cradle to Cradle: Remaking the Way We Make Things* by William McDonough (2001)

Wisconsin Environmental Initiative works to improve Wisconsin's environment, economy, and quality of life through educational initiatives and the advancement of best practices in the areas of business strategy, environmental policy, green building, agriculture, and land use.

## Session 5: Sustainable Agriculture and Dealing with Waste (Chapter 11 & 12)

Circle Question 1: The book introduces several example of sustainable agriculture. Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

Circle Question 2: The book introduces several example of dealing with waste. Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

1. Consider your attitude in growing, preparing and eating food. Are there personal benefits associated with these activities beyond satisfying sustenance needs? If so, how would you describe them?
2. KRAV is an independent board that develops standard for certification for organic foods. If your community were to develop such standards, describe who you think should participate on an independent board?
3. Using the four system objectives as a guide, discuss the various merits of sustainable agriculture (i.e. organic) and locally grown agriculture.
4. Discuss ways in which your communities waste systems (i.e. sewage treatment, land fills) conflict with the cycles of nature. Given the solutions you've read about in the *Waste* chapter, which solutions could your community change most easily to make its waste systems better fit the natural cycles?
5. Did reading this section make you want to do something differently or to take some action in your life? If so, explain.

### Further Resources:

Madison Area Community Supported Agriculture Coalition (MACSAC) works for a just and locally based food system by promoting CSA farms.

REAP (Research, Education, Action and Policy on) Food Group is a non-profit organization that promotes the development of a sustainable and healthful food system in Wisconsin.

Center for Integrated Agriculture Systems studies farm practices, farm profitability, the environment and rural vitality to help create sustainable agricultural and food systems that contribute to the well-being of families, workers, consumers, and their communities.

WasteCap Wisconsin Inc. is a statewide industry-supported nonprofit organization that provides waste reduction and recycling assistance to businesses.

The Solid and Hazardous Waste Education Center's (SHWEC) provides quality education, information and technical assistance to promote the sustainable use of natural resources.

## **Session 6: Protecting Biodiversity and Sustainable Land Use and Planning (Chpt 13 & 14)**

Circle Question 1: The book introduces several examples of protecting biodiversity. Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

Circle Question 2: The book introduces several examples of sustainable land use and planning. Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

1. In the City of Falkenberg, salmon are an important symbol of history as well as a bio-indicator. In your opinion, what native flora or fauna represents such importance in your community?
2. What do you think city and town planning is, and why is it important? Why could it be a useful or important avenue for working toward a sustainable community? What are some planning “successes” and “failures” in your community?
3. Imagine you are a member of a community/municipal task force assigned with the job of coming up with new standards to guide development in the municipality or region to protect biodiversity. Based upon what you came up with in the previous question, think of some standards for new development or for redevelopment in your community that could guide it in the direction of each of the four sustainability objectives (Try for 2-3 standards for each sustainability objective). After you are done, see if any of your standards guide development toward all four objectives concurrently.
4. Did reading this section make you want to do something differently or to take some action in your life? If so, explain.

### **Further Resources:**

Biodiversity Project works to make people aware of the importance of biodiversity and to build their commitment to saving it. Our task is to engage and empower people to act by making the connection between biodiversity and people's daily lives and basic values.

The Urban Open Space Foundation is dedicated to a world in which open space systems are recognized as essential to the quality and health of city living.

1000 Friends of Wisconsin educates the citizens and policy makers of Wisconsin about the benefits of sound land use planning.

[www.daneplan.org](http://www.daneplan.org) - The Dane County Comprehensive Plan website features information about comprehensive planning meetings, draft plans, individual community plans and much more.

[www.madisonplan.org](http://www.madisonplan.org) - The Madison Comprehensive Plan website features information about comprehensive planning meetings, draft plans, individual community plans and much more

## Session 7: What Gets in the Way of Change and Three Change Processes That Work (Chpt 15 & 16)

Circle Question: Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

1. Some people believe that every healthy, sustainable community requires a core of people, or “firesouls”, with a commitment to that community – people who are not just passing through. Is this consistent with your experience or observations?
2. Have you ever attended a public hearing where a plan or project that interested or concerned you was being presented for public comment or input? What did you experience being there? Did you experience the feeling of participation in the plan or project? If you have not attended any public hearings, why not? (Nb: This is not meant to suggest that you should, but rather to examine the characteristics of events that motivate us to participate or not in community events).
3. What are the similarities among the change processes of the eco-municipalities, the Natural Step approach, and Swamp Yankee planning?
4. Identify a project or plan (work or personal) that you participated in that was successfully put into practice. In what ways did the changes you help put into practice have *concrete* results, *systematic* results and/or *institutional* results? Consider the phases and elements of the process. Are any similar to the principles or elements described in this chapter?
5. Consider the role of a guiding vision in plan-making and implementation (either work or personal). What are some examples of this from your own life or the lives of others? After we form a vision of what it is we want – be it a career, a life experience – what do we do next? How does this relate to “back-casting” described on p.193?
6. Did reading this section make you want to do something differently or to take some action in your life? If so, explain.

## Session 8: Steps to Change and Process Leader (Chapter 17 & 18)

Circle Question: Did you have any personal reactions or new insights to what you read about in this section of the book? If so, describe what those may be?

1. If you were speaking to one of your local city or town councilors, how would you persuade them to consider starting an eco-municipality initiative in your community?
2. a) If a community organization or citizen group started a sustainable community initiative without involving local officials from the beginning, what might happen down the road?  
b) If a local mayor announced a sustainable community initiative, hired a coordinator and set up an office, but did not involve or direct municipal departments and agencies to participate, what might happen down the road?
3. Imagine yourself as a process leader for a community embarking on becoming an eco-municipality. How would you find out what all the interests are in the community that shape your community's development and which community leaders to approach early on.
4. Identify some advantages and disadvantages of a process leader being an employee of a municipality.
5. What might a public education initiative in your community about the importance of sustainability look like? What might it teach? How would it work? Who might help design and run it?
6. Do you think the eco-municipality approach can work successfully in the United States? What are its advantages? What are the challenges? How might these challenges be surmounted?
7. Did participating in this course make you want to do something differently or to take some action in your life? If so, explain.

### Further Reading and Resources:

*How to Change the World: Social Entrepreneurs and the Power of New Ideas* by David Bornstein (2003)

*Coming Back to Life: Practices to Reconnect Our Lives, Our World* by Joanna Macy and Molly Young Brown (1998)

*The Cultural Creatives: How 50 Million People are Changing the World* by Paul H. Ray (2000)

[www.SustainDane.org](http://www.SustainDane.org) - The Sustain Dane website features information about frameworks for sustainability, examples of sustainable practices, links to related sites, and various resources for learning more about sustainability related issues.

# Glossary

## **Affordable Housing**

Housing, either owner-occupied or rental, for which the household occupants pay no more than a certain percentage of their gross annual income; is accessible to those who cannot afford to occupy houses that are generally available on the open market.

## **Alternative Energy**

Renewable energy sources, such as biomass, small hydro, solar, wind, geothermal, tidal energy and photovoltaic conversion systems. In addition, the term covers new transportation fuels (such as ethanol from renewable energy sources) and new applications of conventional energy sources (such as the use of propane and natural gas as automotive fuels, and batteries in electric vehicles).

## **Biodegradable**

Degrades naturally into environmentally-friendly components.

## **Biodiversity**

The variability among living organisms from all sources, including land based and aquatic ecosystems, and the ecosystems of which they are part. These include diversity within species, between species, and of ecosystems.

## **Campaign Finance Reform**

The legislation of finance laws that oversee political campaign contributions. Reform ranges from modest measures to tighten enforcement and clarify existing law to comprehensive measures including public funding, independent expenditure regulation, contribution limits, and spending limits.

## **Carrying Capacity**

The maximum population size of a given species that an area can support without reducing its ability to support that same species in the future.

## **Citizen Participation**

A process which provides an opportunity for citizens to work with planners, managers, and elected representatives to share their experience, knowledge, and goals to create a plan which is technically sound, economically attractive, generally understood, and accepted by most of those affected by it.

## **Clean Energy**

Energy that does not cause significant harm to the natural environment through its production, distribution, or use. Includes renewable energy, fuel cells, hybrid-electricity, and other related technologies.

## **Climate Change**

Change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is, in addition to natural climate variability, observed over comparable time periods.

## **Collective Action**

An act taken by all of those involved, as the result of an emerging collective definition of the situation.

## **Collective Consciousness**

Collective knowing that provides a common context from which we can collectively recognize problems.

## **Community**

A group of people living in a particular local area; a group of people having ethnic or cultural or religious characteristics in common; common ownership.

**Community Building**

The process of improving the quality of life in a neighborhood by strengthening the capacity of neighborhood residents, associations and organizations to identify priorities and opportunities to work, individually and collectively; to foster and sustain positive neighborhood change.

**Commuter**

A person who travels regularly between home and work or home and school.

**Comprehensive Planning**

Guidance for local land use planning efforts. Shall contain at least all of the following elements: issues and opportunities, housing, transportation, utilities, agricultural, natural, and cultural resources, economic development, intergovernmental cooperation, land use, and implementation.

**Conservation**

Protection of land and related natural resources; management of resources to protect future value.

**Conservationist**

Someone who is working on a practical solution to a particular problem and believes that the environment is something we use, so we have to conserve and take care of it so that others can use it in the future.

**Cooperative, Housing**

A type of multiple ownership in which the residents of a multiunit housing complex own shares in the cooperative corporation that owns the property, giving each resident the right to occupy a specific apartment or unit.

**Cooperative, Business**

A business that is owned and controlled by its member-patrons and is operated for them on a service-at-cost basis.

**Corporate Accountability**

The system(s) a company establishes to develop policies, indicators, targets, and processes to manage the full range of its activities including corporate governance, labor practices and employee relations, environmental policies and practices, and community involvement.

**Corporate Governance**

A range of rules, regulations, policies and practices that boards of directors use to manage themselves and fulfill their responsibilities to investors and other stakeholders.

**Cost of Living**

The level of prices of goods and services required for a reasonable standard of living.

**Cradle to Cradle**

Design of products that will have no waste or create only waste that is a biological or technical nutrient that can either be decomposed or recycled.

**Cradle to Grave**

Products in an industrial system that are designed on a linear one-way model. Resources are extracted, shaped into products, sold, and eventually disposed of into a "grave" of some kind, usually a landfill or incinerator.

**Deep Ecology**

A form of environmentalism holding that nature and the natural order should be valued over individual human happiness; an approach to ethics that holds that the non-human environment has intrinsic value that is independent of human interests.

**Deforestation**

The process of clearing of forests. Deforestation is usually done to clear the land for agricultural purposes or for logging.

**Downcycling**

Refers to the recycling of a waste stream to create a new material that has properties inferior to those of the original virgin materials.

**Earth Friendly**

In general, a product that is not harmful to the environment; often described as natural, organic, sustainable or green.

**Ecological Footprint**

A measure of the “load” imposed by a given population on nature. It represents the land area necessary to sustain current levels of resources, consumption and waste discharge, by that population.

**Ecological Restoration**

The process of intentionally altering a site to establish a defined, indigenous, historic ecosystem. The goal of this process is to emulate the structure, function, diversity, and dynamics of the specified ecosystem.

**Ecopsychology**

The study of the human psyche and the natural world.

**Ecological System (Ecosystems)**

Interconnected communities of living organisms, including humans and the physical environment (e.g. climate, fire, hydrology, geology, topography) that interact through complex relationships.

**Endangered Species**

A species (plant or animal) officially recognized by federal and state agencies to be in immediate danger of extinction throughout all or a significant portion of its range.

**Energy Efficiency**

A product or service that uses less energy/electricity to perform the same function.

**Environmentalist**

Someone whose agenda and work is driven by a set of overarching beliefs or an ideology; believes the environment should be saved, preserved, set aside and protected from human abuse.

**Environmental Education**

Activities with organized groups (schools, scouts, community groups, etc.) or seminar participants that are designed to develop understanding, appreciation, and care for the natural environment.

**Erosion**

Wearing away of soil and nutrients, principally by wind and running water, that leads to a decline in the ability of the land to support life.

**Fauna**

All the animal life in a particular region.

**Fair Market Rent (FMR)**

A “gross rent estimate,” including the cost to rent a home or apartment plus the cost of all utilities. An affordable FMR is commonly calculated to be 30 percent of a household’s total gross income.

**Fair Wage**

The paid job wage required by the government to meet a person’s minimum basic needs and living standards.

**Fair Trade**

A trading process that ensures that marginalized and disadvantaged world producers and farmers receive sufficient compensation or a fair price for goods and produce.

**Flora**

All the plant life in a particular region.

**Food Shed**

The flow of food from the area where it is grown into the place where it is consumed.

**Genetically Engineered Food, Genetically Modified Food (GMF)**

A laboratory technique used by scientists to change the genetic makeup of food by inserting foreign genes or by altering genes

**Genetically Modified Organisms (GMO)**

A laboratory technique used by scientists to change the genetic makeup of living organisms such as animals, plants, or bacteria.

**Global Warming**

An increase in the average temperature of the earth's atmosphere as a result of increased emissions of greenhouse gases.

**Globalization**

The emerging international economy characterized by unrestricted transfer of goods, services, labor and technology, and weakened national powers controlling domestic economies.

**Grassroots**

People or society at a local level rather than at the center of major political activity; a typical grassroots effort might include a door-to-door education and survey campaign.

**Green Building**

Any building that is sited, designed, constructed, operated, and maintained for the health and well being of the occupants, while minimizing impact on the environment.

**Greenhouse Gases**

Gases which contribute to an increase in temperature. Includes carbon dioxide, methane, nitrous oxide, nitrogen, oxygen, water vapor and chlorofluoro-carbons.

**Green Roofs**

Gardens that are grown on top of building roofs.

**Groundwater**

Water stored in pores, cracks, and crevices in the ground below the earth's surface; the source of water for wells and springs.

**Holistic**

Looking at a whole system rather than just concentrating on individual components.

**Human Rights**

The rights people are entitled to simply because they are human beings, irrespective of their citizenship, nationality, race, ethnicity, language, religion, gender, sexuality, or abilities.

**Independent Media**

Grassroots coverage of events and news through different mediums.

**Invasive Species (Alien Species)**

Species of plants, animals, insects, microorganisms, or parasites that are not native to a habitat.

**Land Use Planning**

Activity, often conducted by a local government that provides public and private land use recommendations and is generally used to guide decisions on zoning.

**LEED (Leadership in Energy and Environmental Design) Certification**

A voluntary, consensus-based, national standard for developing high-performance, sustainable buildings. Based on well-founded scientific standards, LEED emphasizes state-of-the-art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

**Life Cycle Assessment**

Methodology developed to assess a product's full environmental costs, from raw material to final disposal.

**Light Pollution**

The illumination of the night sky by light from cities and outdoor lighting that prevents the observation of faint objects.

**Livable Communities**

Provide and promote civic engagement and a sense of place through safe, sustainable choices for a variety of elements that include housing, transportation, education, cultural diversity and enrichment and recreation.

**Living Wage**

A job earning level that supports self-sufficiency without reliance on public and private subsidies.

**Local Currency**

Local money that circulates within a community and can be used only for purchasing goods and services in the local economy.

**Multicultural**

A variety of cultural and ethnic backgrounds.

**Natural Building**

Any sort of building that is done primarily with the use of natural materials, as opposed to the use of man-made or industrial materials.

**Natural Capital**

The natural resource stocks from which resources useful for livelihoods are derived, e.g. water, land, and environmental resources.

**Natural Materials**

Materials that are derived from the environment as opposed to man-made or synthetic materials.

**Non-toxic**

A substance that does not have the capacity to produce personal injury or illness to humans through ingestion, inhalation, or skin absorption.

**Non-Renewable Resources**

Natural resources that are not naturally replenished once they have been harvested.

**Open Space**

An undeveloped piece of land, public or private, adding ecological, scenic or recreational value to an urban area. Examples include forests, marshes and wildlife sanctuaries.

**Organic Farming**

Crop production systems that generally exclude the use of synthetic fertilizers, pesticides, and other chemicals.

**Organic Food**

Food that is produced without pesticides, fertilizers, growth hormones, antibiotics, artificial additives, food coloring, ionizing radiation, and is not genetically modified in any way.

**Overshoot**

The ecological deficit that occurs when human consumption and waste production exceed the capacity of the Earth to create new resources and absorb waste. During overshoot, natural capital is liquidated to support current use. Consequently the Earth's ability to support future life declines.

**Permaculture**

A form of landscaping that strives to create a naturally balanced ecosystem that feeds the gardener's needs while providing fuel, materials for shelter and home, and habitat for livestock, while being self-sustaining.

**Pollution**

State in which natural environment being contaminated with harmful substances as a consequence of human activity.

**Poverty**

A situation in which a person or household lacks the resources necessary to be able to consume a certain minimum basket of goods. This basket consists either of food, clothing, housing and other essentials (moderate poverty) or of food alone (extreme poverty).

**Preservation**

Leaving natural resources and habitats undisturbed.

**Public Transportation (Mass Transit)**

Various forms of shared-ride services intended for conveying the public, including buses, vans, trolleys, and subways.

**Public Open Space**

Informal or formal outdoor areas that are intended for use by the public for passive or active recreation.

**Purchase of Development Rights**

Voluntary farmland protection technique that compensates landowners for limiting future development on their land. Under a PDR program, an entity, such as a town or a private organization, purchases development rights to a piece of property. By doing so, the organization or government agency is essentially buying the landowner's right to develop that land. The land itself remains in private ownership and the landowner still retains all other rights and responsibilities associated with being a property owner.

**Quality of Life**

The level of well-being of lifestyle and the physical conditions in which people live.

**Rain Garden**

A man-made depression in the ground that is used as a landscape tool to improve water quality. Rain gardens are designed to absorb storm water that would otherwise run off impervious surfaces, pick up pollutants such as chemicals and oil, and run into storm drains. The gardens use native plants to improve the quality of water flowing into local streams, rivers, and groundwater.

**Recycling**

The process of using materials again after processing. The series of activities by which discarded materials are collected, sorted, processed and converted into raw materials and used in the production of new products.

**Renewable Resources**

Resources that are created or produced at least the same rate at which they are consumed, so that there is no net loss of the resource.

**Revitalization**

A process of economic, social and cultural redevelopment of a civic area or neighborhood.

**Rural**

Characteristic of farming or country life.

**Seventh Generation**

Native American belief that calls a duty upon leaders to always have in view not only the present, but also the coming generations, and to consider the impact of decisions on the next seven generations.

**Slow Food**

A movement that seeks a rediscovery of authentic culinary traditions and the conservation of the world's quality food and wine heritage.

**Social Equity**

Fair access to livelihood, education, and resources; full participation in the political and cultural life of the community; self-determination in meeting fundamental needs.

**Smart Growth**

Environmentally-sensitive land development; has goals of minimizing dependence on auto transportation, reducing air pollution, and making infrastructure investments more efficient.

**Stewardship**

The concept of land as a resource, our responsibility to wisely manage that resource, and our responsibility to future generations for the condition of that resource when we leave it.

**Surface Water**

All water naturally open to the atmosphere, including rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries and wetlands.

**Sustainable Business**

Meeting the needs of the current generation without sacrificing the ability of future generations to meet their needs. Three equal factors affect decision making in a sustainable business: economic, environmental, and social concerns.

**Sustainability Community Indicators**

Measurements of the interconnected elements of community health (economic, social, environment and cultural) and the development of solutions that strengthen all elements rather than improving one part at the expense of another.

**Sustainable Development**

Resource use management intended to meet society's present needs without compromising the needs of future generations.

**Threatened Species**

Living species likely to become endangered within the foreseeable future throughout all, or a significant portion of, their range.

**Toxic Waste**

A waste that poses a substantial hazard to human health or to the environment when improperly managed.

**Urban**

Relating to or concerned with a city or densely populated area.

**Watershed**

The entire area of land that collects and drains water (from snow and rain) into a single river or similar body of water.