



Center for Land Use Education

THE LAND USE TRACKER

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On The Web...

<http://eia.doe.gov/>

The Energy Information Administration provides energy data, forecasts, and analyses for Wisconsin and the United States.

TAPPING THE NEW APA ENERGY POLICY GUIDE TO MAKE WISCONSIN'S SMART GROWTH LAW EVEN SMARTER

by Ingrid Kelley

Wisconsin is on the leading edge with its Smart Growth Law. The law's nine required local plan elements and fourteen planning goals are designed to encourage community growth that will provide a continuing quality of life for future generations.

However, what is missing from much of the smart growth discussion in general, and this law in particular, is recognition that efficient and clean energy use is truly key to achieving this goal. The planning profession, while proactive on other aspects of smart growth, has yet to fully recognize the energy connection. Now, the newly adopted Energy Policy Guide from the American Planning Association (APA) can assist planners in strengthening the energy components of their comprehensive plans to promote smart growth.

The APA Energy Policy Guide

The new APA Energy Policy Guide was developed by a subcommittee of the APA Environment, Natural Resources and Energy (ENRE) Division, and adopted by the national organization at their annual conference in Washington DC in April 2004. Subcommittee members agreed there are at least four primary reasons an energy policy guide for planners is both timely and necessary.

The first reason was seeing how seriously the use of fossil fuel affects the environment, particularly through its contribution to global climate change. Next was the realization of how often energy issues intersect

with planning priorities, particularly with sustainability and smart growth goals, environmental quality, and community empowerment.

Furthermore, as planners become more and more involved in community-based planning processes, they are being recognized as local leaders on both sustainability and smart growth issues. They are, therefore, well placed to inform communities about energy issues and to broker collaborations among public and private stakeholders in addressing these issues. Finally, there is the long standing lack of a federal energy policy that could move us beyond fossil fuels into a clean energy future. It's important for the APA, as a national organization, to urge its chapters and members toward supporting a policy move in this direction.

Energy and Smart Growth in Wisconsin

The primary position taken by the APA Energy Policy Guide is that planning professionals can indeed make a direct contribution to a clean energy future, both through design and planning decisions that influence energy use and through their support of new clean energy technologies. If we identify where energy issues intersect with smart growth goals we will begin to connect some important pieces in the sustainability puzzle. We can start by examining how the four Policy Statements and twenty-one specific Policy Initiatives

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SIGN UP NOW FOR ONLINE COURSE IN LAND USE ENVIRONMENTAL EDUCATION

We are looking for 10 educators interested in land use environmental education to participate in a 4-week pilot course, Land Use Education and Resources for Teachers (NRES 780). This online course, which runs from January 18 through February 18, will introduce and familiarize educators with land use concepts, issues, ideas, and resources and help educators to use, adapt and create activities and lesson plans for specific land use topics. Each participant will receive one graduate credit as well as a generous stipend. For more information contact Rebecca Mattano at (715) 346-2025 or rmatt533@uwsp.edu or visit the course website <http://www.uwsp.edu/cnr/wcee/nres780/>.

USE-VALUE TAX LAW EFFECT ON CONSERVATION

January 28, 2005, Sheraton Madison Hotel, Madison, WI

“Making Use-Value Work for Farms, Forests, Wetlands and Your Community,” is the featured topic of the Wisconsin Chapter of the Soil and Water Conservation Society’s annual conference. Registration is \$25 for SWCS members, \$30 for non-members and \$20 for students and retirees, and includes lunch and breaks. For more information, contact Matt Otto at (608) 662-4422 x 245 or visit the conference website <http://wlwca.org/Pages/UseValueMtgInfo&Reg.pdf>.

IMPORTANT OPPORTUNITY FOR EXTENSION EDUCATORS!

February 14-15, 2005, UW-Stevens Point

The Wisconsin Department of Natural Resources is sponsoring an intensive 2-day workshop to give Extension educators hands-on training with computer tools for planning, conservation, and environmental protection. Participants will learn about the different types of computer tools, gain direct experience using specific tools, and enhance their ability to use the tools in educational programming. The workshop is free but enrollment is limited to the first 42 participants and requires a 2-day commitment. For more information about the workshop, featured tools, and online registration, visit <http://dnr.wi.gov/org/es/science/landuse/comptools> and click on UW-Extension. Event cosponsored by: Center for Land Use Education, Environmental Resources Center, UW-Land Information and Computer Graphics Facility, and the Local Government Center

**NATURAL RESOURCES SUMMIT FOR EXTENSION EDUCATORS**

January 26, 2005, Stevens Point, WI

Interested in natural resources programming in Extension? Hold the date, and plan to join fellow UWEX educators in Stevens Point on January 26th, 2005, for a one-day UWEX natural resources summit. The summit, sponsored by CNRED natural resource centers and teams, is intended to bring together UWEX county, regional, and campus-based educators to share information about programs and resources, discuss emerging needs, and identify opportunities for collaboration. For additional information contact Ken Genskow, UWEX Environmental Resources Center at kgenskow@wisc.edu or (608) 262-8756.

WEEB GRANTS AVAILABLE

The Wisconsin Environmental Education Board is accepting grant proposals for the “development, dissemination, and implementation of environmental education programs.” Application deadline is January 15, 2005. Additional information may be obtained from the WEEB website <http://www.uwsp.edu/cnr/weeb/index.htm> or by calling (715) 346-3805.

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included in the APA Energy Policy Guide might fit into the nine required local plan elements of Wisconsin's Smart Growth Law:

Policy Statement 1: Promoting Energy Efficiency

There are seven policy initiatives that support Policy Statement 1 which encourages "planners and decision makers . . . to reduce energy impacts by making more efficient use of all energy resources." Of the nine Wisconsin Smart Growth local plan elements, there are several obvious connections:

- **Housing.** Policy Initiative 3 from the Policy Guide advocates reducing energy consumption through life cycle costing as part of building construction; an excellent strategy for commercial and municipal buildings and facilities as well. Policy Initiative 5 advocates continued support for the Low Income Energy Assistance Program and the Weatherization Assistance Program. Lower home energy bills contribute to affordable housing goals. Policy Initiative 6 includes homeowners as it urges support for "education, incentives, and subsidies that reduce consumption at the individual level."
- **Transportation.** Policy Initiative 7 advocates for increasing corporate average fuel economy (CAFE) standards. While this is not a locally controlled issue, it can inspire awareness of the need to design more efficient traffic patterns and practices.
- **Economic Development.** Energy efficiency is a proven method for established and new businesses to cut costs. By supporting and promoting all seven energy efficiency initiatives, a municipality could create an environmentally friendly, energy efficient business climate that attracts new enterprises and strengthens existing ones.
- **Intergovernmental Cooperation.** Policy Initiative 4 promotes existing state and federal programs that

encourage and reward energy efficiency practices for homes, businesses and municipalities. Local governments could also pursue collaborative planning efforts to develop joint energy efficiency, renewable energy, and transportation goals and programs.

- **Land Use.** Policy Initiative 1 recommends that planners and urban designers "reduce energy consumption through comprehensive planning and urban design that incorporates strategies for both mobile and non-mobile energy efficiency." Policy Initiative 2 encourages "development of guidelines and codes for energy efficient site planning and building methodologies that take advantage of the energy flows of the natural environment."

Policy Statement 2: Reducing Fossil Fuel Use and Increasing Use of Renewable Energy

There are many ways that fossil fuels can be replaced by clean energy sources. While it's true that much effort in this direction is still under development, some technologies are ready now, and can become part of a municipality's commitment to sustainability. As we come to recognize the environmental and economic necessities of reducing fossil fuel use, planning for incorporation of new, clean energy strategies will become necessary as part of the comprehensive planning process. Policy Initiative 8 simply states "Develop and encourage appropriate applications of renewable energy." This initiative cuts across many of the plan elements:

- The **Housing** element could include infrastructure incentives for installation of grid-connected solar electric panels and solar water heaters on residences as a way for new developments to assist in producing their own energy.
- **Transportation** could consider alternative fuels for municipal vehicles.



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- **Utilities and Community Facilities** could mandate development of renewable energy opportunities in community and municipal buildings and facilities. Such municipal renewable energy uses could include anaerobic digestion for sewage treatment, harnessing landfill gas to generate electricity or installing solar hot water systems for public pools, hospitals and other facilities.
- **Agricultural, Natural and Cultural Resources** could address anaerobic digestion for manure management on farms, wind energy development, and agricultural biomass for fuels and other products.
- The **Economic Development** element might explore the attraction of bioenergy or renewable energy businesses to the community or the development of distributed generation and combined heat and power as commercial/industrial energy strategies.
- **Land Use** could include siting requirements for both homes and businesses that would offer optimal solar orientation. It could also address advance planning for the location of wind farms in areas where the wind resource is sufficient to attract this kind of energy development.

Policy Statement 3: Reduce Environmental Impact of Energy Production and Use

Great progress has been already been made toward reducing air and water pollution caused by fossil fuel use for transportation and electricity, but more needs to be done. Other environmental issues affect our quality of life as well, and need to be addressed:

- The **Transportation** element could start with Policy Initiative 12, which discusses transportation options for alleviating pollution.
- **Utilities and Community Facilities** could look at developing community-based lighting

guidelines (Policy Initiative 13) “that promote energy efficiency and safety while reducing light pollution.” Municipal lighting ordinances have been developed by the non-profit Dark Skies Initiative, an organization dedicated to reducing light pollution.

- The **Intergovernmental Cooperation** element could recommend adoption of cooperative models for assessment of carbon sequestration opportunities on publicly owned land, along with local, regional global warming abatement strategies.

Policy Statement 4: Energy Equity

Energy resources are used by everyone, and therefore, everyone should share in both the benefits and responsibilities. The Policy Guide includes five initiatives under its statement supporting energy equity. Policy Initiative 17 recognizes that “while energy is a commodity for sale and consumption, it is also a national resource that must be equitably managed.” Policy Initiative 18 recommends that planners “integrate community energy goals into the ‘Smart Growth’ planning process.” The following connections also exist with the local plan elements:

- **Housing.** Municipal planning for affordable housing would do well to incorporate Policy Initiative 20, which supports the inclusion of “energy efficiency in all affordable housing guidelines.” This policy is designed to make housing more affordable not only to purchase, but also to live in.
- **Economic Development.** Policy Initiative 21 encourages communities to “plan adequately for all aspects of an energy generation and production facility and its workers.”
- **Intergovernmental Cooperation.** Collaborative planning among local government bodies could result in the development of agreements regarding regional growth patterns for utility infrastructure that include “a fair share siting process for



energy generation and distribution facilities that reflects sound environmental practice and does not place undue environmental burdens on any one community” (Policy Initiative 19).

Vision and Action: Energy Policy Opportunities

The two local plan elements from the Wisconsin Smart Growth Law that have not been mentioned so far are the Issues and Opportunities element and Implementation element. They are perhaps the most important of all. The Issues and Opportunities element sets the tone for the whole plan by establishing a community vision and identifying community resources. If a community wishes to make “sustainability” or “environmental quality” part of its future vision, reducing fossil fuel use through reduced energy consumption, improved energy efficiency and renewable energy use, will be essential. The Implementation element is also critical. Becoming more energy self-sufficient on a local level requires that a specific plan of action be carefully crafted and carried out.

- Within the **Issues and Opportunities** element, the comprehensive plan should include an inventory and assessment of energy needs and resources including renewable and non-renewable energy sources, utility-owned land, transmission lines, and local utility facilities. Commitment to sustainability and environmentally responsible growth can be envisioned through a number of the initiatives from the Policy Guide, including:
 - Energy efficient design and planning to reduce energy consumption (Initiative 1).
 - Reduction of energy consumption on the individual level (Initiative 6).
 - Development of renewable energy and distributed generation (Initiatives 8 and 9).
 - Continued reduction of the

negative impacts of fossil fuel use (Initiative 14).

- Recognition that energy is both a commodity and a shared resource (Initiative 17).
 - Integration of energy efficiency goals into smart growth planning (Initiative 18).
- Implementation strategies are essential for turning a community vision into action. The APA policy initiatives suggest possible implementation tools, including:
 - Energy efficient building codes (Initiative 2).
 - Renewable energy-friendly subdivision ordinances (Initiatives 8 and 9).
 - Community energy efficiency goals (Initiative 18).
 - Community lighting design guidelines (Initiative 13).
 - Agreements with utilities for future planning and collaboration (Initiative 17).
 - Ordinance for siting generation and transmission facilities that conform with comprehensive planning goals (Initiative 11).
 - Renewable energy-friendly zoning and building codes including a solar access code (Initiatives 8 and 9).

The APA Energy Policy Guide is designed to serve as both an organizational policy tool, as well as a reference for planners in their daily professional practice. The full policy guide document can be downloaded from the APA web site at: <http://www.planning.org/policyguides/energy.htm>.

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Photos courtesy of the National Renewable Energy Laboratory, Photographic Information Exchange.



THE ROLE OF ENERGY IN COMPREHENSIVE PLANNING

By Rebecca Roberts

In 2003, Wisconsin residents spent nearly \$14 billion to heat and cool their homes, fuel personal vehicles, operate schools, libraries and other public buildings, run small business equipment, manufacture and ship goods, and perform other activities essential for daily living (WDOA, 2004). Energy is all around us. It provides us with the power and mobility that characterizes our modern lifestyle. Yet, few give thought to where energy comes from, how it is produced and delivered to our homes, how energy impacts the local economy and environment, or the role we can play in ensuring a safe, reliable and affordable supply of energy for current and future generations. This article will discuss why communities should be concerned about planning for energy, offer suggestions how to increase energy conservation and efficiency measures at the community level, and describe a planning process for accomplishing these goals.

Why Plan for Energy?

According to the U.S. Department of Energy, American cities and towns account for over 80 percent of national energy use (DOE, 1996). Land use patterns, including the density, arrangement and mix of land uses in the community, strongly influence the efficiency and demand for local energy. Sprawling or scattered patterns of development, for example, result in long commuting distances, heavy reliance on personal vehicles, and costly utility and infrastructure provision. Compact or mixed-use development, as an alternative, provides additional travel options such as walking, biking and mass transit, more efficient travel routes, and reduced construction and maintenance costs associated with roads and utilities. Community design opportunities, including landscaping, site design, and building orientation also provide significant opportunities to improve energy efficiency and reduce consumption. Street trees, for

example, reduce heating and cooling costs by blocking hot summer rays and providing shelter from cold winter winds.

Local energy choices influence all aspects of community life, including the environment, economy, and overall quality of life. More efficient travel patterns, for example, result in shorter commuting times, reduced traffic congestion and lower air pollution. Likewise, homes, businesses and government buildings that are more efficient produce fewer greenhouse gas emissions. Many conservation measures designed to reduce energy consumption, such as cluster development, trails and greenways also serve to protect our valuable natural resources. Vegetation, in the form of landscaping, street trees, forests, agriculture and other green space, act to reduce ambient air temperatures, thereby resulting in lower energy costs.

From an economic standpoint, energy is also crucial. Provision of safe, reliable and affordable energy supplies, which depends on the proper siting and maintenance of energy facilities, is a key to local economic development. Furthermore, when households, businesses and local governments cut energy expenditures, they have more money to reinvest in the local economy. It is estimated that over two-thirds of Wisconsin's energy expenditures leave the state's economy, a drain of approximately \$4,100 per household (WDOA, 2004). Energy savings, in turn, can serve as disposable income for individuals, working capital for local businesses, and surplus funds required by local governments to provide essential services and infrastructure.

The argument for energy planning is compelling. Through local planning and design choices, local communities can influence up to 70 percent of local energy demand, or 56 percent of



the national total (DOE, 1996). By considering opportunities for energy conservation (using less energy) and energy efficiency (reducing wastes) within a comprehensive plan, local residents and governments save money, reinvest in the local economy, improve environmental quality, and ensure clean, safe and reliable energy supplies for future generations.

Wisconsin's Comprehensive Planning Law

The Wisconsin Comprehensive Planning Law empowers city, county, village and town planning commissions to prepare, adopt, and periodically update a comprehensive plan to guide the future development and redevelopment of their community. The comprehensive plan must contain at least nine elements – issues and opportunities; housing; transportation; utilities and community facilities; agricultural, natural and cultural resources; economic development; intergovernmental cooperation; land use; and implementation. Each plan must include an inventory of existing conditions, projections of future conditions, and a statement of goals, objectives, policies and implementation strategies related to each plan element. The law provides for public participation throughout the preparation of the comprehensive plan, wide distribution of proposed plan elements for review, and adoption of the plan by local ordinance.

Although not specifically required by law, the comprehensive plan is an ideal place for communities to consider energy and its relationship to other important community issues. Figure 1 on page 8 describes the relationship between energy and other comprehensive planning elements.

Energy and the Comprehensive Planning Process

Communities may take one of several approaches to address energy in a local comprehensive plan; they may consider energy as one component of the utilities and community facilities element, as a theme that

runs throughout all of the elements, or through the inclusion of a separate energy element. Independent of the approach selected, there are several common steps within the planning process where it makes sense for communities to think about energy. Figure 2 shows a diagram of a general planning process. Following is a description of major steps where energy planning might fit within that process.

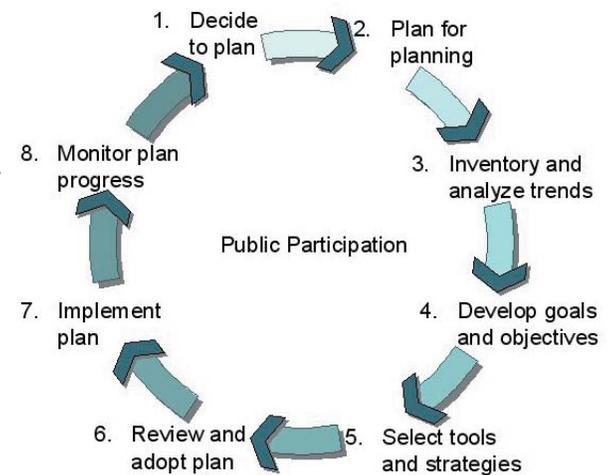
Form an Energy Advisory Committee

During the initial start-up phase of a planning project, communities may wish to form an Energy Advisory Committee. The committee should be composed of a diverse group of citizens and stakeholders representing commercial, agricultural, industrial, transportation, housing, utility providers, and other community interests related to energy. This committee will be charged with the task of developing a community energy vision, identifying local energy issues and opportunities, helping to draft, review and recommend energy goals, objectives, and implementation strategies, and encouraging citizen participation and partnership development throughout the planning effort. The advisory committee may also be assisted by a working subcommittee of local government staff, whose role it is to provide ongoing assistance in the form of data, analyses and professional insight.

Inventory and Analyze Energy Data

Documenting existing energy conditions and trends and projecting future energy demand is a crucial step in planning for safe, reliable and affordable sources of energy and identifying opportunities to introduce energy efficiency and conservation measures. Information should be

Figure 2: Comprehensive Planning Process



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Figure 1: Energy and the Comprehensive Plan

Plan Element	Opportunities to Include Energy	Energy Relationships
Issues and Opportunities	<ul style="list-style-type: none"> • Energy trends and projections 	
Housing	<ul style="list-style-type: none"> • Housing types • Housing density • Affordability • Site design • Landscaping • Energy-efficient construction 	<ul style="list-style-type: none"> • Proximity of housing to employment and services reduce transportation energy use • Existing and planned housing types and densities impact energy use • Maintenance, rehabilitation and retrofitting of existing housing stock increases energy efficiency and reduces construction-related energy use • Siting, landscaping and orientation of housing impacts residential energy use and efficiency
Transportation	<ul style="list-style-type: none"> • Multi-modalism • Alternative transportation • Traffic signal optimization • Alternative fuels programs • Street and parking design 	<ul style="list-style-type: none"> • Existing and planned road networks impact travel efficiency • Road construction and maintenance increase energy use • Impervious surfaces from roads, sidewalks and parking lots raise ambient air temperatures and increase cooling costs • Availability and choice of travel modes impacts energy use • Availability of sidewalks, greenways, and bike paths impact energy use • Street and parking design requirements impact energy use
Utilities and Community Facilities	<ul style="list-style-type: none"> • Energy-efficient facilities • Site selection and design • Community and institutional recycling programs 	<ul style="list-style-type: none"> • Proximity of recreation, education, and other community facilities to residential areas impacts transportation energy use • Siting, landscaping and orientation of community facilities impact energy efficiency • Recycling programs reduce energy consumption • Siting, maintenance and capacity of energy facilities and transmission lines impact energy supply
Agriculture	<ul style="list-style-type: none"> • Local food systems • Waste Management 	<ul style="list-style-type: none"> • Promotion of local food systems reduce transportation energy use • Agricultural crops and other vegetation reduce ambient air temperatures • Agricultural wastes provide a renewable source of energy
Natural Resources	<ul style="list-style-type: none"> • Air and water quality • Open space and greenway preservation • Forest management and urban forestry 	<ul style="list-style-type: none"> • Energy extraction, production and combustion adversely impact air and water quality • Open space, trees and other vegetation reduce ambient air temperatures and reduce cooling costs • Natural resources, including water, wind, sun, and biomass serve as renewable sources of energy
Cultural Resources	<ul style="list-style-type: none"> • Energy-efficient facilities • Reuse and preservation of historic facilities 	<ul style="list-style-type: none"> • Retrofitting historic structures increases energy efficiency • Preservation of historic structures reduces energy use for new construction
Economic Development	<ul style="list-style-type: none"> • Recruitment of clean industries • Green industrial parks • Brownfield and infill development • Adaptive reuse of existing facilities • Siting and design issues • Telecommuting and home-based businesses • Industrial and business recycling 	<ul style="list-style-type: none"> • Brownfield and infill redevelopment reduce capitalize on existing infrastructure • Proximity of employers to residential areas impacts transportation energy use • Energy supply and affordability impact business/industrial attraction and retention • Potential for energy conservation savings to be reinvested in local economy
Intergovernmental Cooperation	<ul style="list-style-type: none"> • Regional siting of energy facilities • Shared services 	<ul style="list-style-type: none"> • Shared roads and services reduce energy expenditures
Land Use	<ul style="list-style-type: none"> • Land use densities, mixes and arrangements • Redevelopment 	<ul style="list-style-type: none"> • Density and pattern of development impacts efficiency of road and utility provision • Cluster, mixed-use and compact development reduce transportation energy use • Redevelopment of existing sites and facilities reduces energy consumption
Implementation	<ul style="list-style-type: none"> • Zoning and subdivision regulation • Building codes • Capital improvements program • Incentive programs • Education • Partnership development 	

Adapted and expanded from: South Carolina Energy Office and the Office of Regional Development. November 2000. Preparing an Energy Element for the Comprehensive Plan. Available online: http://www.state.sc.us/energy/PDFs/Planning_Guide.pdf



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collected on the types and sources of local energy available, energy consumption by type (i.e. petroleum, natural gas, biomass, etc.) and by sector (i.e. residential, commercial, government, etc.), energy costs, local energy providers, existing energy programs, and the condition and capacity of existing energy facilities. Connections between energy and other community features, such as land use patterns, transportation routes, air and water quality, and so forth should also be examined. These types of data and others may be collected from local government offices, utility providers, the Energy Division of the Wisconsin Department of Administration, the U.S. Energy Information Administration, and the U.S. Census Bureau.

Develop Energy Goals and Objectives

Through the development of energy goals and objectives communities are able to articulate their values and preferences towards energy and provide a framework to guide future decision-making in fulfillment of their vision. A wide range of energy issues may be addressed in the goals and objectives, including use of renewable energy resources, energy production and distribution issues, siting of new energy facilities, and opportunities to improve energy efficiency or reduce energy consumption. Sample energy goals and objectives are included in Figure 3.

Select Implementation Strategies

An implementation strategy should support energy goals and objectives by describing specific programs, policies and other recommendations to be implemented by the local community. Each strategy should include a measurable component, a timetable for completion, and a responsible party so that communities may monitor progress toward plan implementation. Examples of energy related strategies are also included in Figure 3.

Implement and Monitor Plan Progress

The comprehensive planning process does not end with the development or adoption of the comprehensive plan. Communities are also responsible for implementing and monitoring progress towards successful fulfillment of the plan goals. Common implementation tools, including zoning and subdivision regulations, building codes and capital improvement programs can be revised to incorporate energy conservation and efficiency measures without compromising other community objectives. Non-regulatory tools, such as education, incentive programs and partnership building may also be essential for moving energy considerations beyond local government and into mainstream community decision-making.

Energy Planning continued on page 11

Figure 3: Sample Goals, Objectives and Strategies for Energy

Goal 1: Reduce energy used for transportation.	
Objective 1.1: Provide and promote travel alternatives.	Strategy 1.1.1: Include provisions for safe, convenient and attractive pedestrian and bicycle paths in all new developments. Strategy 1.1.2: Revise development standards to encourage telecommuting and home occupations.
Goal 2: Promote energy conservation through environmentally beneficial actions.	
Objective 2.1: Encourage the use of trees and landscaping to conserve energy.	Strategy 2.1.1: Work with civic groups to educate the public on the energy benefits of trees, landscaping and proper maintenance.
Objective 2.2: Provide and encourage open spaces.	Strategy 2.2.1: Develop programs to fund land purchases for greenways and seek conservation easements from property owners.

Taken from the Energy Conservation Element of the Greenwood City/County Comprehensive Plan (2003)



THE WILDLAND-URBAN INTERFACE AND THE FARMLAND-URBAN INTERFACE IN WISCONSIN

By Roger B. Hammer

The long-term pattern of population deconcentration in the United States has resulted in rapid development in the outlying fringe of metropolitan areas and in more remote, rural areas with attractive recreational and aesthetic amenities, especially forests. This demographic change is increasing the wildland-urban interface (WUI), defined by the Federal government as the area where structures and other human development meet or intermingle with undeveloped wildland.

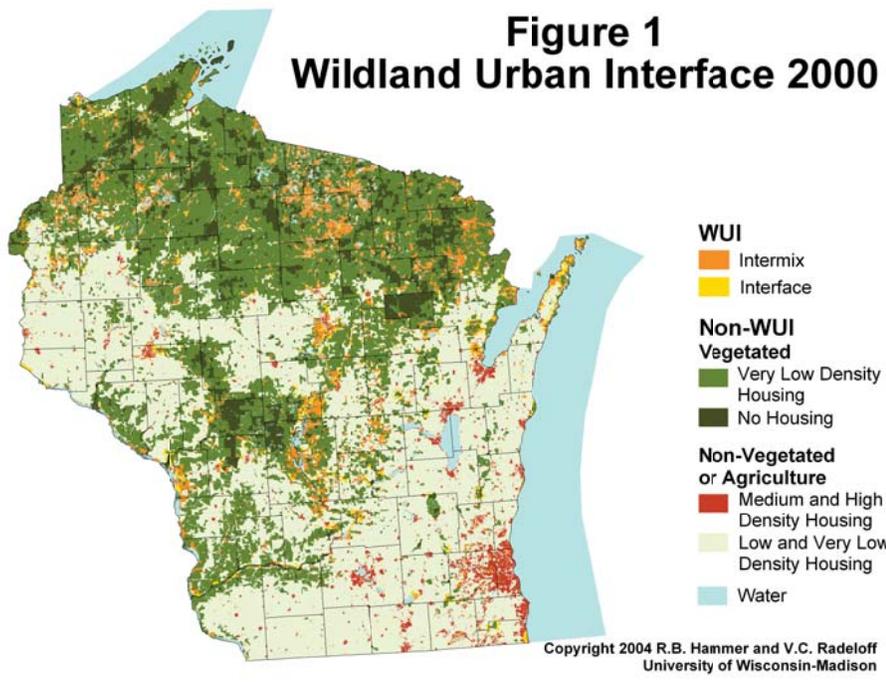
When a record 8.4 million acres of forest burned in the U.S. in 2000 and wildland fire suppression costs reached \$1.66 billion, the WUI became a primary focus of Federal fire management policy, especially with the Healthy Forest Restoration Act, which authorizes hazardous

especially in the Western U.S. Last year over 3,000 houses in the U.S. were destroyed by wildland fires, resulting in estimated damages of more than \$2 billion. Even in states like Wisconsin, with relatively low forest fire risk (except in a few areas like the Pine Barrens in Bayfield, Douglas, Burnett, and Washburn Counties) the WUI is a focal arena for conflicts between humans and the environment.

Using U.S. Census data and the National Land Cover Dataset (NLCD), a team of University of Wisconsin and USDA Forest Service researchers, have analyzed and summarized the size and extent of the WUI in the contiguous 48 states for the years 1990 and 2000. Areas with at least one housing unit per 40 acres were included in the WUI if 50% or more of its land area was comprised of coniferous, deciduous and mixed forest; shrubs; native grasslands; and wetlands or if the area was located within 1.5 miles of an area with 50% or more of its land area comprised of these same "wildland" vegetation types (Figure 1). In Wisconsin WUI areas are prominent in the northern part of the state, as well as in more forested areas such as the Wisconsin River Valley.

Although the "farmland-urban interface" has not been defined by the Federal government, nor has it become the focus of public policy to the same extent, for much of Wisconsin it may serve as an equally important indicator of emergent environmental and social conflicts. Using the same housing density categories but selecting only areas in which 50% or more of their land area was comprised of pasture/hay, row crops, and small grains delineates the area where structures and other human development meet or intermingle with farmland, the Farmland-Urban

Figure 1 Wildland Urban Interface 2000



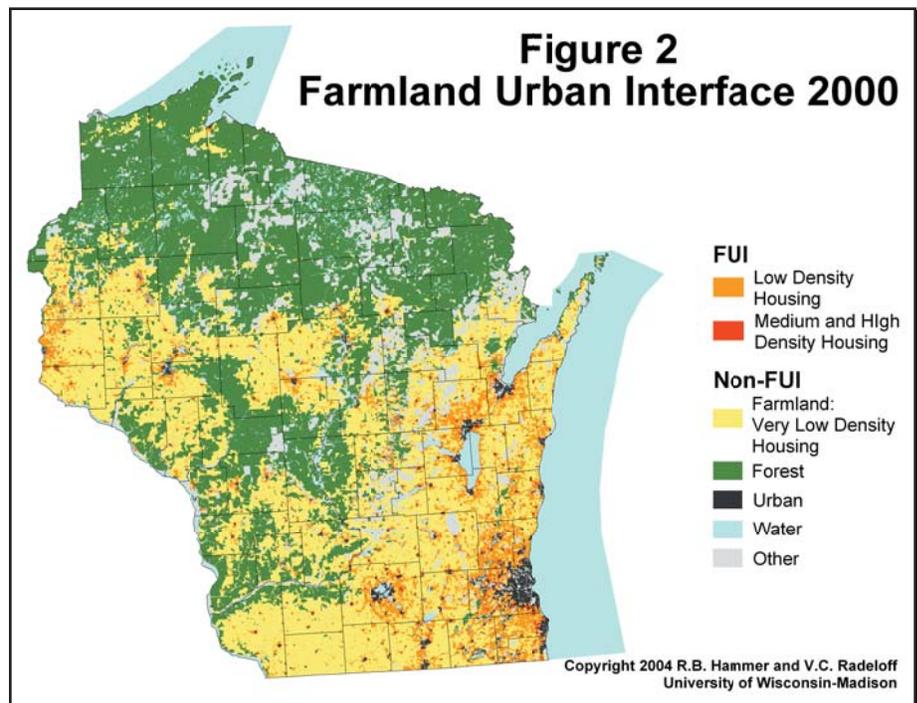
fuels reduction. The WUI creates an environment in which fire can move readily between structural and vegetation fuels. Therefore, its expansion has exacerbated wildfire threats to structures and people,



Interface (FUI). As would be expected, the FUI is concentrated in southern Wisconsin (Figure 2). An article in the next Land Use Tracker will explore housing growth during the 1990's in agricultural areas across Wisconsin.

Farmland-Urban Interface maps for each UWEX district are available at: http://www.drs.wisc.edu/personnel/faculty/hammer/Hammer_Extension.htm

Roger B. Hammer is an Assistant Professor in the Department of Rural Sociology at the University of Wisconsin-Madison.



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Following plan implementation, communities should take a retrospective look at progress towards their energy goals and objectives. Reductions in energy consumption, improved energy efficiency, greater use of renewable energy resources, lower levels of energy-related pollution, and safe, reliable and affordable supplies of energy are indicators that a community is on track towards meeting its energy goals.

Energy Planning Resources

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Submit Articles!

Please submit an article to our newsletter.

It should be:

- 1,000 words or less,
- Informative,
- Of statewide concern,
- And address a land use issue.

The managing editor will review your submission and get back to you if any changes are necessary.

*Managing Editor
Rebecca Roberts*

CLUE OFFERS PLAN COMMISSION WORKSHOPS!

The Center for Land Use Education offers Plan Commission Workshops for newly appointed commissioners, veteran commissioners, and professional educators and planners whose job it is to support local commissions. The basic plan commission workshop is designed for newly appointed commissioners and can be tailored to address:

- Establishing a Plan Commission
- Recruiting and Retaining Quality Commissioners
- Roles and Responsibilities of the Plan Commission
- Comprehensive Planning Basics and the Planning Process
- Encouraging Public Participation
- Open Meetings and Public Records Laws
- Ethical Conduct and Decision-Making

For veteran commissioners, CLUE can design a workshop to address complex issues such as:

- Property Rights
- Zoning, Conditional Uses, Non-Conformities, and Subdivision Regulations
- Mapping Strategies for Farmland, Natural Resources, and Future Land Uses
- Acquiring Data for Comprehensive Planning
- Intergovernmental Cooperation
- Plan Implementation, Monitoring, and Enforcement
- Stormwater and Non-Point Pollution
- And other relevant topics.

To schedule or learn more about CLUE Plan Commission Workshops, please contact Doug Miskowiak at dmiskowi@uwsp.edu or (715) 346-4989 or the CLUE staff at (715) 346-3783.

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