

Sustainable Living



State of Emergency

Prepared by:
Kenosha County Board Supervisor
Dayvin M.A. Hallmon

Municipalities:
Kenosha County
City of Kenosha
Town of Brighton Town of Bristol
Town of Paris Town of Randall
Town of Salem Town of Somers
Town of Wheatland
Village of Genoa City Village of Paddock Lake
Village of Pleasant Prairie Village of Silver Lake
Village of Twin Lakes

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Background

The idea for Sustainable Living came about through several conversations that have been had with constituents from all across the county. One such dialogue took place the day of Lieutenant Governor Barbara Lawton's visit to Kenosha County emphasizing Wisconsin Electric's commitment towards utilizing renewable energy. A number of citizens had varied interests, ranging from better recycling to increasing home energy efficiency to renewable energy. I compiled a list of the voiced concerns and catalogued names and e-mail addresses for further communication. I used the e-mail addresses to better learn people's concerns and how to address them. I quickly discovered that our local government had not made the commitment to addressing these problems, nor had our local government developed the institutional infrastructure to deal with these issues. This left citizens feeling shut out from government. There is a saying, "Think globally. Act locally." I told them that I would try and organize things in a coherent manner that was politically appealing while still trying to preserve the integrity of the endeavor. As I finished each draft of the Sustainable Living proposal, I e-mailed it out to citizens asking, "How does this look? Is this what you meant? Does this fit what you are talking about?" Once citizens were satisfied with the finished product and I had researched the various educational institutions, businesses, local, state, and federal agencies/institutions that would be needed to undertake this task; I e-mailed the document out to elected officials. Over the last few months where there are those elected officials who are beginning to understand Sustainable Living and there are also those who still do not understand Sustainable Living. This field guide is designed to explain in greater detail the how, what, where, when, and whys of Sustainable Living as it pertains to Kenosha County.

Executive Summary

There can be no question that one of our deepest obligations as public officials and citizens in this economic period is for our city and county to help foster the creation of jobs. The average annual household income for Kenosha County is \$64,247¹ while the average annual income in 2000 for a Kenosha farm was \$17,123². Everyday 12.2% of our citizens³ are living at or below the poverty level⁴. According to a recent Kenosha News article, the Kenosha County unemployment level is at 6.2%.⁵ This announcement was accompanied by an announcement from Chrysler that the company was cutting 150 jobs from its Kenosha plant.⁶ Chrysler is one of the largest employees in Kenosha County. We must grow our tax base, lower the cost of goods and services, enhance the quality of life for our citizens, and maximize the effectiveness of the services and programs we offer. There is also an additional item that we must begin looking into. We must find new ways of forging partnerships between diverse groups if we wish to solve some of our most pressing problems. We must realize that everyone is a stakeholder. Each citizen benefits and suffers from the decisions that are or are not made. True progress will not be made by turning an issue over to one group of persons with a singular focus. True

¹ United States Census Bureau Quick Facts Community Action Survey 2007

² Southeastern Wisconsin Planning Commission SEWRPC Multi-Jurisdictional Comprehensive Plan Preliminary Draft Chapter III Fact Sheet Inventory of Agricultural, Natural, and Cultural Resources

³ Citizens are different than residents. A citizen is entitled to the rights and privileges of being a free person and entitled to protection by the government. Whereas a resident, is merely a person who lives in a specified location for a period.-Webster's Dictionary

⁴ United States Census Bureau Quick Facts Community Action Survey 2007

⁵ Kenosha News Layoffs Hit Engine Plant Here 2/26/2009

⁶ Ibid

progress will be made by collectively engaging the issue. Any furtherance of our towns, our village, our city and our county must transition us from success into prosperity⁷.

It is the direct intent of **sustainable living**⁸ to integrate the deepest desires that we have as public officials, citizens, human beings in a manner that allows us to tackle our greatest challenges without becoming overwhelmed and fatigued. It is the marrow of Sustainable living that possesses the capability to move us from hardship into prosperity. Sustainable living can be defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The focus of Sustainable living can be summarized by the Four E's (see figure 1.):

Figure 1. The Four E's/Four Focal Points of Sustainable Living

1. Ecology/Environment
2. Equity/Equality
3. Economy/Employment
4. Education/Exposure.

The goal of sustainable living is to use the Four E's as focus points while addressing people; food; energy; housing; transportation; economics; technology; democratic practices; and social justice(human rights and equity). Sustainable living asks the question when it comes to people; food; energy; housing; transportation; economics; technology; democratic practices; and social justice how are the Four E's represented?

What role do the Four E's play?

Are the results we come up with when we combine the Four E's along side people;

food; energy; housing; transportation; economics; technology; democratic practices;

⁷ (Merriam-Webster's Dictionary) Prosperity *noun 13 century* - The condition of being successful or thriving. Prosperity is not wealth or being rich. It is the whole community being healthy economically, mentally, spiritually, and socially. Being rich is simply having a lot of money or material possessions. Being wealthy could be described as a history of having a lot of money or material possessions.

⁸ United Nations Report of the World Commission on Environment and Development: Our Common Future 1987 also known as the UN Brundtland Report

and social justice, a result that allows us to meet our current needs and future generations to meet their own needs?

Do these issues work together in a way that each one of them mutually benefits and strengthens the other?

Are we certain that our actions leave no one issue is at the expense of another?

By setting a goal and making a commitment to specific objectives with careful planning we can solve many of our long standing problems. There are a number of citizens, non-for-profit agencies, educational institutions, businesses, state and federal agencies and departments that have additional resources that can help us further fulfill our commitment to sustainable living. We want to participate with people from each of these communities and institutions if we wish to do this in the correct manner so that we solve our disparaging issues.

The components of sustainable living discussed in this report are: biofuels; food systems; housing; mass transportation; solar energy; waste; water; wind; government and society; and finally implementation monitoring and analysis. Many of these components are or contain green businesses (see figure 2) that have **green jobs/green collar jobs**⁹ or have the potential to be **green collar jobs**.

Figure 2. Defining a Green Business

- A. Providing environmental services (energy conservation services, recycling collection, or hazardous materials remediation)
- B. Produce environmental goods and products (a manufacturer of goods made from recycled or secondary materials manufactures of non toxic household cleaners)

⁹ House Resolution 2847 the Green Jobs Act of 2007 defines a Green Job as: the energy-efficient building, construction, and retrofits industries; the renewable electric power industry; the energy efficient and advanced drive train vehicle industry; the biofuels industry; the deconstruction and materials use industries; the energy efficiency assessment industry serving the residential, commercial, or industrial sectors; and manufacturers that produce sustainable products using environmentally sustainable processes and materials.

- C. In management, production, and/or operations apply state of the art environmental practice (pollution prevention, hazardous and toxic material use reduction, and waste mitigation)

Other components of sustainable living place emphasis on **energy/water efficiency**¹⁰ and **energy/water conservation**¹¹. With the application of **appropriate technology**¹² in many scenarios we will be able to maximize the effectiveness of our intentions. By planning and practicing sustainable living we will be able to have our households and neighborhoods establish **economic adequacy**¹³. Our municipalities will become **economically secure**¹⁴. Each component will outline some of the problems we face concerning that specific element, some solutions, followed by a case study and some recommendations of what we can do.

¹⁰ Energy/Water Efficiency lessens the supply side of energy/water by using less power/water to perform the same function.

¹¹ Energy/Water Conservation lessens the demand side by turning things off like faucets and lights.

¹² Appropriate Technology-modern knowledge and experience compatible with the laws of ecology, gentle in use of scarce resources, designed to serve people. criteria include 1) low resource usage coupled with extensive recycling 2) preference for renewable over non-renewable resources 3) emphasis on environmental harmony 4) emphasis on small scale industries 5) high degree of social cohesion and a sense of community

¹³ Economic Adequacy-having a sufficient level of economic activity that ensures the basic needs for all are met

¹⁴ Economically Secure-a variety of businesses, industries and institutions which are environmentally sound financially viable, provide training, education, and other forms of assistance to adjust future needs, provide jobs and spend money within a community and enable employees to have a voice in decisions which affect them. A more sustainable community also is one in which residents money remains in the community.

Biofuels



Background:

For the last several years in the United States oil has been a source of major concern. Oil is our main source of fuel. Oil a fossil fuel exists in the earth in limited supply. Areas where oil is abundant are countries that have been hostile to U.S. foreign policy. Yet with every gallon of gasoline we buy, we pay money to countries whose interests are not in the best interests of our nation thereby putting our national security at risk. The cost of oil also fluctuates drastically due to supply, demand, and global politics.

*Figure 3. World Oil Prices in Three Cases
1980-2030*

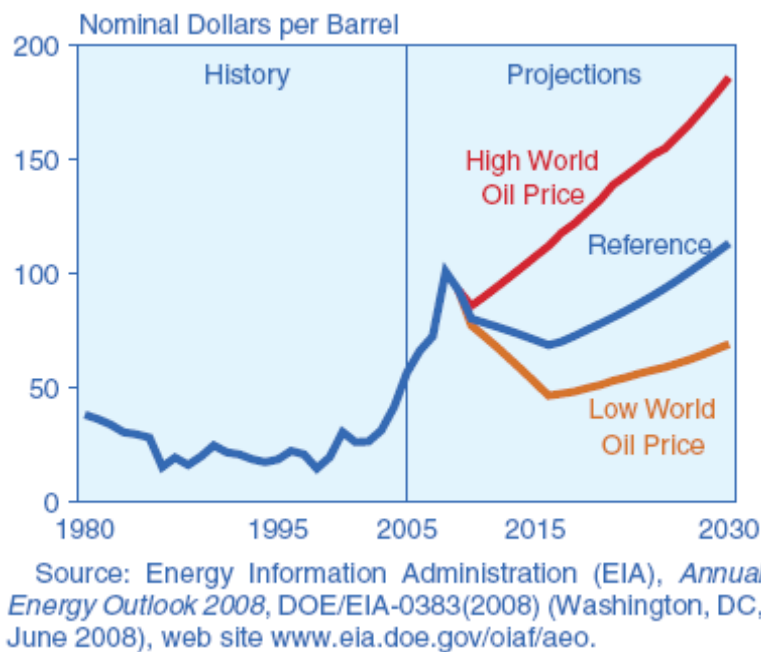
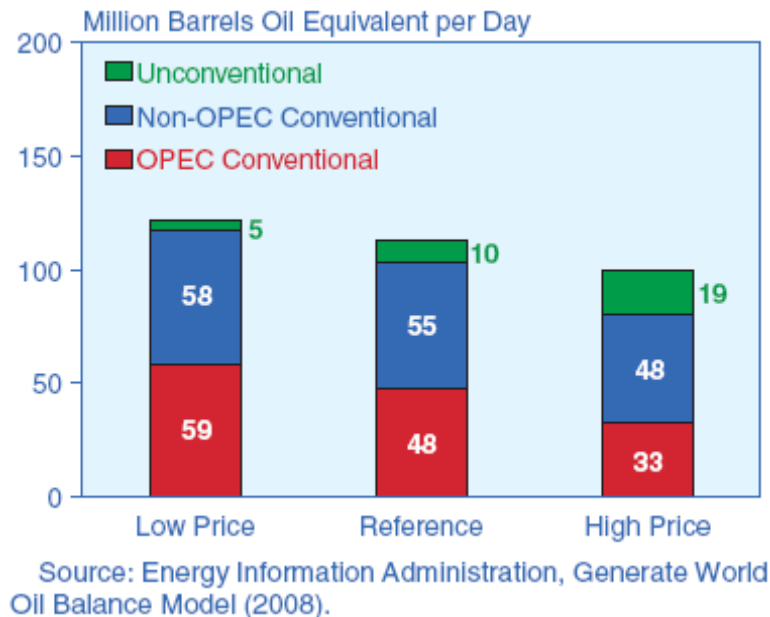


Figure 3 depicts three scenarios concerning the price of oil. In the fall of 2007 we saw oil prices drop due to the drop in demand from nations like China and India. Much of the recent inflation in the price of oil has come from developing nations beginning to turn to industry. Figure 4 depicts the price and source of oil. OPEC is the Arab states that produce oil. The unconventional areas in green are places such as tar sands, places that

would be extremely difficult to extract oil from. Non-OPEC conventional would be places like our Gulf of Mexico along the coast of places like Louisiana and Texas

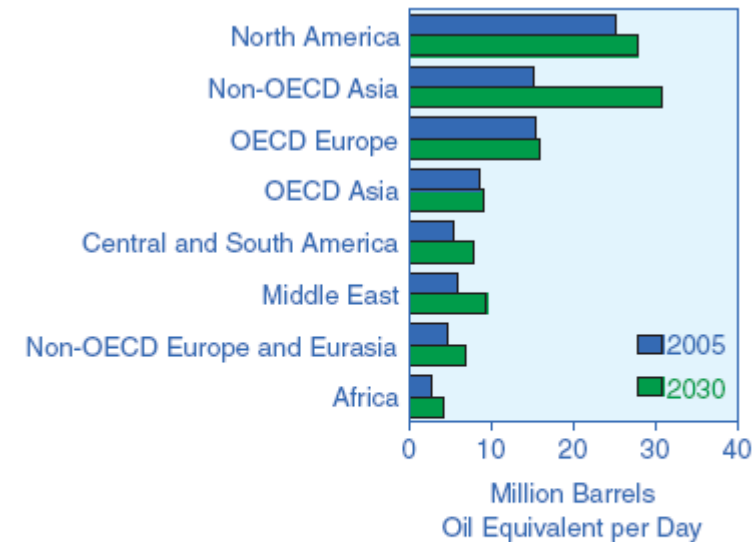
Figure 4. Worlds liquid Energy Supply in three Cases 2030



The instability of just one of the variables of politics, price or market forces of supply and demand can have disastrous affects on the budgets of homes, businesses, schools, and government. The U.S. uses 25% of the world's supply of oil while being only 5% of the world's population. We use oil in various forms to produce our plastics and power our motor vehicles. With the invention of the automobile our transportation habits changed. We gained the ability to come and go at will and cars became a status symbol. Since the birth of the automobile, we have become a society heavily dependant on cars as a primary means of transportation. As the respective populations of China and India grow, so does their demand for cars and other things. Figure 5 shows liquid fuel consumption in various regions of the world comparing 2005 data against the outlook of 2030. Consumption in 2030 is estimated to surpass 2005 levels of consumption for each region but most notably

Asia, the area of the world in which China and India are located. The state of Wisconsin spent 9.4billion on oil imports in 2007¹⁵

Figure 5. World Liquids Consumption by Region and Country Group 2005 and 2030



Sources: 2005: Derived from Energy Information Administration (EIA), *International Energy Annual 2005* (June-October 2007), web site www.eia.doe.gov/iea. Projections: EIA, *World Energy Projections Plus* (2008).

Oil in the form of gasoline is the largest contributor to green house gasses. Green houses gasses emit carbon into atmosphere. The air of our vehicle saturated urban areas has become concentrated with the emissions from the vehicles that pass through urban areas. Citizens of urban areas experience a much higher risk of asthma and heart disease due to the toxicity of the air. This results in members of our society having much shorter life spans and decreased opportunities than citizens that live in rural areas.

In order to address the problems brought on by our nation's usage of oil, we must utilize a multi pronged approach. Some states like California have approached the federal government asking for increased fuel efficiency standards on motor vehicles for their state, a move that was frowned upon by the previous presidential administration. Petitions

¹⁵ Wisconsin Energy Statistics Report 2007

to the oil companies to put in more E-85 stations and petitioning the auto manufactures to build more flex fuel vehicles have been moved by some states as well. Other states like Iowa, who have a strong history of agriculture, have turned to biofuels.

Solution(s):

Biofuels can come from corn, soybeans, algae, switch grass, vegetable oil, and animal fat. Biofuel plants are not very big employers the largest biofuel plants only employ about 50 people on average. With an increase in biofuel demand employment at biofuel plants will increase. 70% of the soil in Kenosha County is soil that has been classified as a class II. Class II is the federal government's way of saying our soil is considered national prime farmland.¹⁶

In April of 2007 Wisconsin Governor Jim Doyle issued Executive Order 192 creating the Wisconsin Office of Energy Independence. The governor's stated goal is to have 25% of Wisconsin's energy needs come from renewable sources by the year 2025. Biodiesel is a part of the 25 by 25 goal. Governor Doyle has been a strong advocate for government to lead and pave the way for its citizens. In 2007 Wisconsin produced 7 million gallons of biodiesel.¹⁷ Also in 2007 Wisconsin produced 283.8 million gallons of ethanol.¹⁸ According to the Renewable Fuels Association, Wisconsin ranks 9th in the nation for renewable fuel production.¹⁹ Governor Doyle has also encouraged the purchase of E-85 vehicles for the state to use in its collection of fleet vehicles.

¹⁶ Southeastern Wisconsin Planning Commission SEWRPC Multi-Jurisdictional Comprehensive Plan Preliminary Draft Chapter III Fact Sheet Inventory of Agricultural, Natural, and Cultural Resources page 2

¹⁷ Wisconsin Office of Energy Independence 2008 Wisconsin Biofuels and Alternative Fuels Use Report page 6

¹⁸ Ibid

¹⁹ Ibid

Kenosha is a great place for a biofuel plant. Our struggling farms have excellent soil to grow the things needed for biofuel. The cost of public and private transportation in our state could be greatly reduced by switching to a locally produced fuel source.

Figure 6. Future Outlook for Jobs in the Biofuel Industry



Key Points

- Jobs in biofuels often look like traditional chemical manufacturing jobs.
- While none of these occupations shows faster than average projected growth, the Department of Labor (DOL) identifies all but two as "in-demand" because they are critical to high-growth industries.
- Jobs in biodiesel and ethanol production pay decent wages, but offer few jobs: A 50 million gallon per year (MGY) plant employs on average 35 workers. A few good jobs, however, can bring significant benefits to rural communities.
- Increasing the scale of production does not significantly increase employment. An ethanol operation that grows from 40MGY to 100MGY might grow from 35 to 45 or 55 workers; a biodiesel plant expanding from 4 to 10MGY could potentially operate at the same general staffing level—12 employees.
- The job creation potential of biofuel refineries has been greatly exaggerated. Reliable studies now suggest that the jobs multiplier is a modest 3-4, depending on local markets. Local ownership demonstrably boosts indirect economic impacts.
- Metal manufacturing jobs will likely be in demand as the biofuels industry matures. While no empirical studies yet exist on the nature and scale of the requisite supply chains, we do know that the biofuel infrastructure needs capital goods—tanks, boilers, centrifuges, etc. As traditional shops step up to produce them, skilled labor will be in high demand.

Case Study:

Western Iowa Energy a biodiesel plan that generates 30 megawatts a year and which received support from a 2006 bond issue ultimately hired 28 employees. Sixteen of

Jobs to Watch

As with some efficiency and wind sector jobs, biofuels jobs are relatively new. We do not have good wage and employment data because they are not yet tracked by the U.S. Bureau of Labor Statistics (BLS). In the absence of solid labor market data, local research can provide critical information to workforce development partners.

Indian Hills Community College in Iowa, for example, surveyed the regional ethanol industry and developed job guides for shift maintenance and plant operator positions, which became the basis of its Ethanol Plant Technician A.A.S. program. The college is now working to codify biodiesel occupations.

Related jobs include:

Ethanol plant technician
Ethanol plant operator
Ethanol maintenance mechanic
Biodiesel laboratory technician
Biodiesel maintenance mechanic
Biodiesel process control technician

those workers are in operations, where feedstock, primarily soybean, is treated to remove impurities and processed into biodiesel. The company hired high school graduates for these positions, doing so about six to eight weeks before the plant's start up. They received a brief two weeks of classroom training on the basics of operations, safety, environment, and the chemical process itself. They were then sent to other plants in the state, where they job shadowed experienced operators as their on the job training, while receiving full wages. Western Iowa Energy's lab technologist and quality assurance supervisor, however, required more pre-employment training than the operators. Based on the demand from Western Iowa Energy and other area plants, Iowa Central Community College in 2006 began a 65 credit, two year biofuel tech program. Graduates receive associate degrees. The first cohort is now in its second year. The program, like the shorter-term training is paid for by new jobs training program funds.

The use of the new jobs training program by Iowa Community college to support the biofuels industry illustrates how the program works. Over the last three years the community college has sold tax exempt bonds to support the training for new employees at five year start-up biofuel plants. The bonds were purchased by local banks and investors at variable interest rates 5.62% for the most recent sale. The principal and interest payments on the bonds are paid by diverting directly to the college 3% of the payroll tax revenue on the new employees' wages. Strict accountability is built into this financing mechanism. By virtue of the withholding tax diversion, the college knows exactly what the payroll of the company is and the number of jobs created, thus ensuring that the wage levels promised by the businesses to receive the support for the new jobs training program are paid. A business that fails to meet its hiring and salary projections is

subject to default and not eligible for reimbursement of training expenses, or must repay and reimbursements made. Businesses can be reimbursed for many kinds of training, including on the job training, basic education and customized training at a community college or another educational institution, and training services purchased from a private trainer.²⁰

Recommendations:

Kenosha County could make use of the incredible potential in the biofuel industry by:

1. Partnering up farms with biofuel producers.
2. Create green industrial zones for the purpose of courting green industries.
3. Work with oil companies and citizens to stimulate a demand for biofuels.
4. Work with our technical college to provide small start up loans and or tax credits to automotive shops that retrofit cars so that vehicles can use biodiesel.
5. Get bio fuel producers to work with Carthage and UW-Parkside to train and recruit chemists to work locally in the biofuel industry.
6. Increase air quality standards for the state of Wisconsin.
7. Push for more stringent Environmental Protection Agency 8 our standards.
8. Create a county wide advertising campaign encouraging citizens to use biofuels.

²⁰ Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy page 41. A document from the Apollo Alliance, the Center On Wisconsin Strategy and the Workforce Alliance

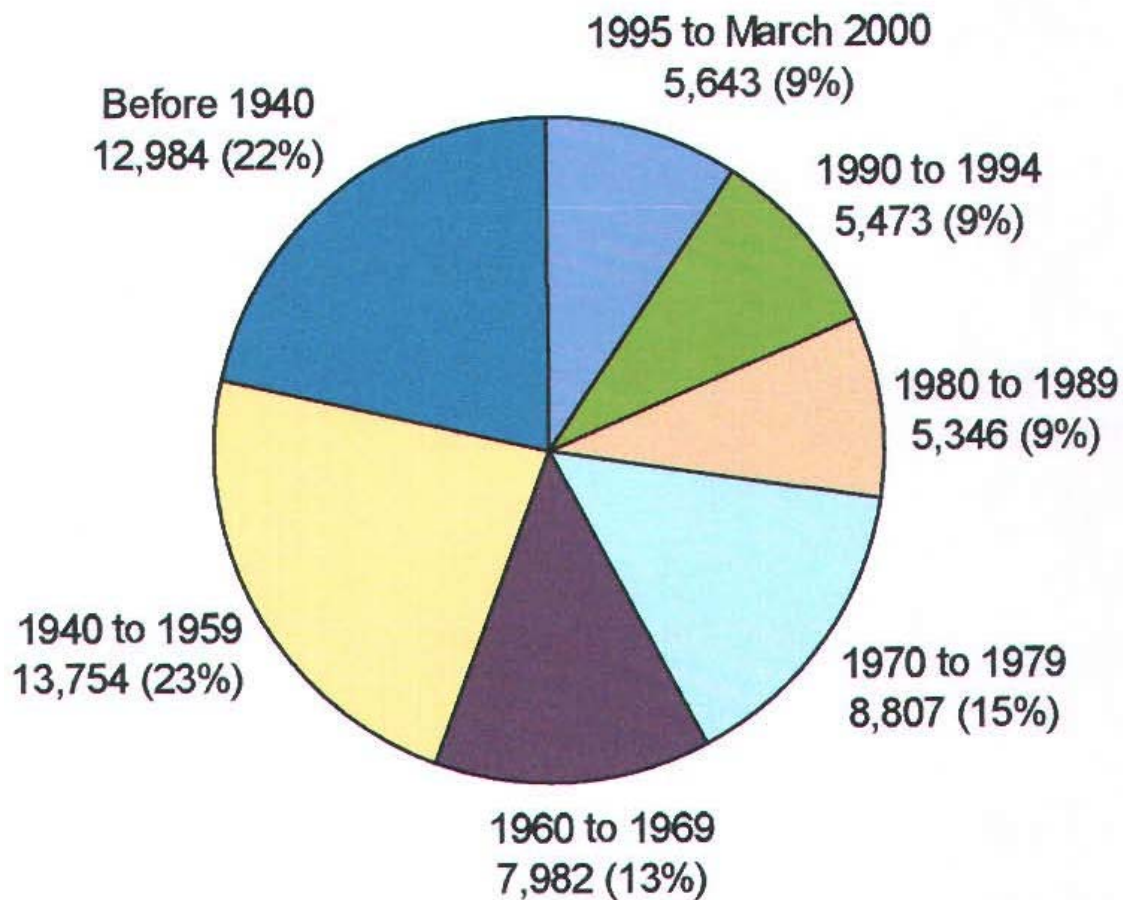
Housing



Background:

Recent data shows that the market for building new houses has considerably slowed. While there have been new homes built in Kenosha County there still remains a significant amount of older housing stock both in the city and in the county. 45% of the homes in Kenosha County were built before 1960²¹ (see figure 7.)

Figure 7. Year Built for Housing Units in Kenosha County:2000²²



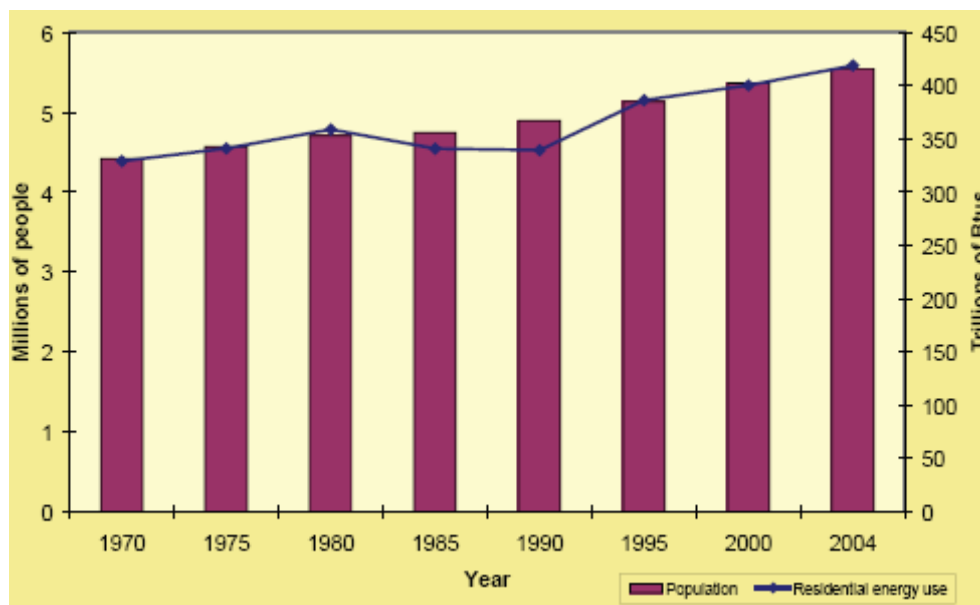
Efforts in the city of Kenosha have been made to tear older houses down and build new homes in the same architectural style as the old home. This program has been successful

²¹ Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report number 299. A Multi Jurisdictional Comprehensive Plan for Kenosha County:2035 Chapter Ten Housing Element figure X-7

²² Ibid

in a number of cases. However a county wide problem still remains. There is a sufficient quantity of older homes in Kenosha County that remain untouched. These homes often become low cost rental properties. 24.3% of homes in Kenosha County are rental property²³. Sometimes they fall into decay and the cost to fix them exceeds their market value. If they become unoccupied, and the landlord defaults on keeping up the property eventually the property ends up on the tax roll. One of the ways to keep older housing from ending up on the tax rolls is to weatherize the home or make the home energy efficient. (see figure 8.)

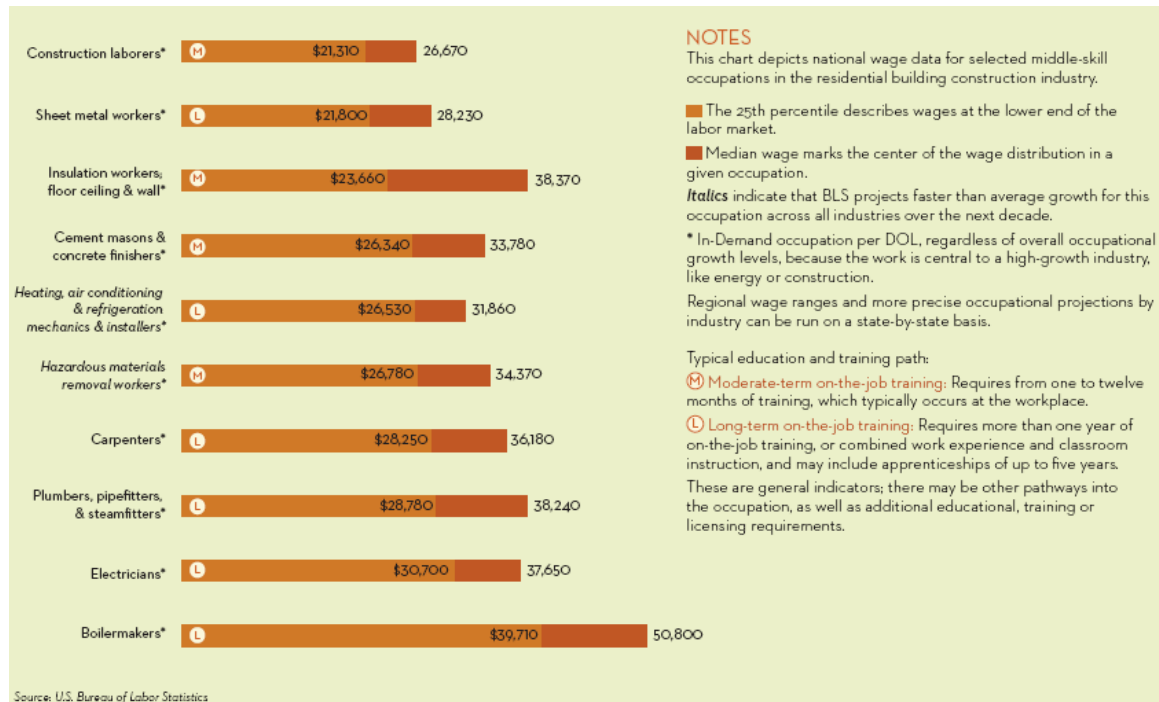
Figure 8. Wisconsin Population and Residential Energy Use²⁴



²³ Southeastern Wisconsin Regional Planning Commission Chapter Ten Housing element Fact Sheet Page 2

²⁴ Megatrends: Housing University of Wisconsin-Stevens Point College of Natural Resources, University of Wisconsin-Extension

Figure 9. Future Outlook for jobs in the Energy Efficiency/Weatherization Sector



Key Points

- Jobs in energy efficiency retrofitting look a lot like traditional construction jobs.
- While only two of these occupations show faster than average projected growth, the Department of Labor (DOL) identifies all 10 as "in-demand" because they are critical to high-growth industries.
- Every \$1 Million invested in efficiency retrofits generates eight to eleven on-site jobs. Job numbers rise if we include indirect economic effects.
- State and municipal retrofitting programs will need to be tied to regional training programs, as the construction and building trades face imminent shortages of skilled workers.
- A good place to start greening career pathways in the building trades is through union apprenticeship and related programs, some of which are currently constructing workable pathways out of poverty.
- Some construction jobs have high wages, but offer only seasonal employment.

Jobs to Watch

Some high-demand energy-efficiency jobs are relatively new; we do not have good wage and employment data because they are not yet tracked by the U.S. Bureau of Labor Statistics (BLS). Local research is the most fruitful source of information about these sorts of jobs.

The New York State Energy Research and Development Authority, for example, is in the process of standardizing job titles and skill requirements for energy auditors. And the Regional Economic Development Institute at Los Angeles Trade-Technical College identifies several emerging middle-skill occupations among green construction jobs with highest employment potential:

Energy and indoor air quality auditor
 Deconstruction worker
 HVAC operations and maintenance technician
 Systems technician
 Solar installer and technician

Solution(s):

There are a number of non-profits, state agencies and federal agencies whose mission it is to weatherize and increase the energy efficiency of homes. Instead of focusing on building new homes we should work with Gateway Technical College, our local Housing and Development Authority, the county Human Services department and

our local construction companies to increase the knowledge about weatherization and energy efficiency. Also, federal money has been made available through the American Recovery and Reinvestment Act to fix up housing.

Case Study:

Milwaukee Energy Efficiency or Me2 program will let building owners and managers from homeowners to large commercial and institutional enterprises-pay for needed retro fitting with no money upfront and with no fear of losing their investment if they move before realizing the energy savings. Building owners contact Me2 or vice versa, to initiate a building efficiency project. Me2 will coordinate an assessment and installation of efficiency measures. The measures will save customers more on their energy bills over some reasonably short period-no more than 10 years-than they will cost to install. Me2 will use pre-arranged financing to pay for the measures building owners will pay back the loaned funds with interest, in monthly installments on their utility bills. Me2 will protect building owners who sell the property from losing money, through an innovative utility tariff: payment responsibility stays with the building, not the owner. Because the net of loan payments and energy savings result in a benefit, current owner and any subsequent owner will profit through the life of the loan and beyond. Me-2 style project can save the average household 20% of their energy costs-a realistic figure for all but very efficient homes-that would allow the average household to pay up to \$33.83 per month for the efficiency measures. Assuming eight percent interest for seven years, those payments would support loans of \$2,171 for the efficiency work. If every Wisconsin household participated that would yield \$4.9 billion in retrofitting work.²⁵

²⁵ Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy page pages 12-13. A document from the Apollo Alliance, the Center On Wisconsin Strategy and the Workforce Alliance

Recommendations:

Kenosha County can better deal with our housing issues by:

1. Using funds appropriated from the American Recovery and Reinvestment Act to make homes more energy efficient or weatherize homes.
2. Work with Wisconsin Housing and Economic Development (WHEDA), the city and county housing authority, non profit organizations to target the homes that need to be worked on.
3. Bring in a consultant from Wisconsin Energies or Focus on Energy to survey government buildings and schools to see how they too can be weatherized or made to be more efficient.
4. Work with KABA and the Chamber of Commerce to incorporate businesses into the mix.
5. Promote the construction of environmentally accommodating utilizing green building standards (LEED-Leadership in Energy and Environmental Design, Global Green, Green Globes).
6. Mandate that zoning changes meet green building standards.
7. Offer free building permits to those who build green.
8. Participate in the Green Space and Sustainable Urban Development Program.
9. Work with non profits to apply for a shelter for homeless and transitional housing grant.
10. Work with non profits to further publicize the home weatherization and energy assistance programs offered by the state of Wisconsin.

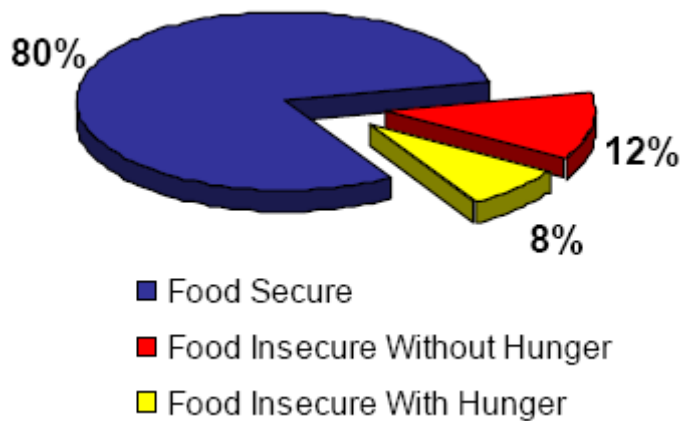
Local Food Systems



Background:

A 2006 survey of almost 4,000 households with elementary-age children in the Kenosha Unified School District indicated that 20% of Kenosha area families (1 out of 5) are **food insecure**²⁶, compared with 12% of Wisconsin households statewide and 11% nationally. This means that out of the roughly 7,700 KUSD households with young children, 1,540 families struggle to put food on the table at some time.²⁷ (see figure 10.)

*Figure 10. 2006 KUSD Food Insecurity Survey Results*²⁸



There are areas of Kenosha County where citizens have great difficulty gaining access to fresh fruits and vegetables. Many times citizens in these same areas are some of the poorest citizens in the whole county. It is in these neighborhoods where the issues of under funded transportation, lack of economic development, low education, low unemployment/**underemployment**²⁹, low self esteem, a lack in confidence and hopelessness are prevalent. Although in some of

²⁶ Food Insecure- a condition in which people lack basic food intake to provide them with the energy and nutrients for fully productive lives. A 2006 survey of almost 4,000 households with elementary-age children in the Kenosha Unified School District indicated that 20% of Kenosha area families (1 out of 5) are food insecure, compared with 12% of Wisconsin households statewide and 11% nationally. This means that out of the roughly 7,700 KUSD households with young children, 1,540 families struggle to put food on the table at some time. From Kenosha University of Wisconsin Extension Hunger Prevention Programs website

²⁷ Hunger Prevention Programs Kenosha County UW-Extension website

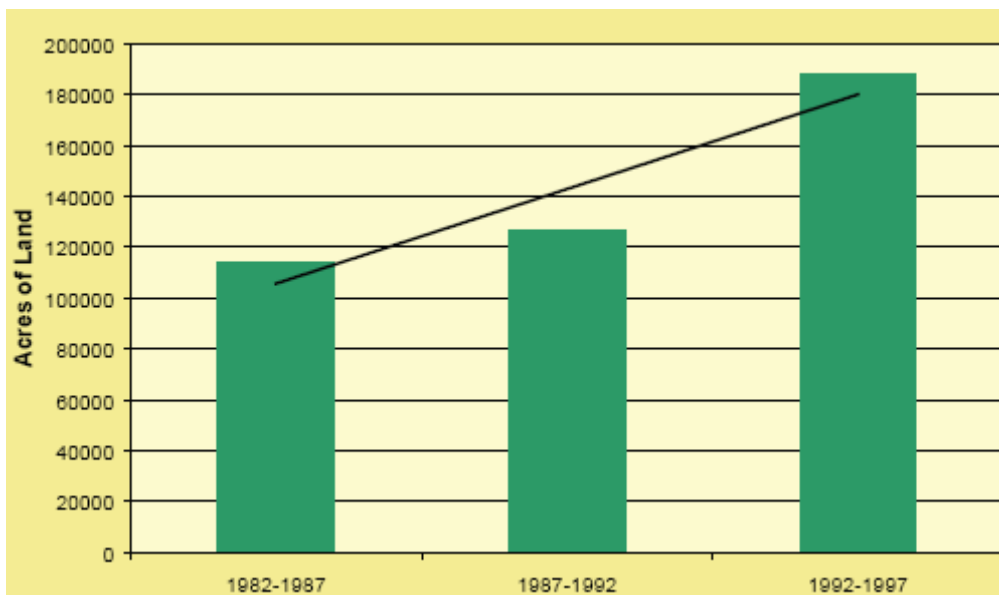
²⁸ Ibid

²⁹ Underemployment-the condition in which people in a labor force are employed at less than full-time or regular jobs or at jobs inadequate with respect to their training or economic needs.

these areas there may be a full service grocery store, the unavailability of fresh fruits and vegetables to citizens due to the lack of economic capital is something that needs to be addressed. Currently food pantries all over the nation are finding it hard to keep their shelves full because the demand for food assistance has dramatically increased.

Enrollment in state food stamp programs has also gone up across the nation. Addressing these issues of employment, self esteem and food insecurity are separate from one another they are actually not. To solve them is easier than one might think. Even more so, the history of the state of Wisconsin and Kenosha County indicate that we are well equipped to deal with these problems but we must preserve adequate green space in order to do so. (see figure 11.)

Figure 11. Wisconsin Land Converted to development 1982-1997³⁰



Solution(s):

Community gardens practicing **sustainable agriculture**³¹ have been found to be a way to build and increase **community economic development**.³² There are a number of

³⁰ Megatrends: Housing University of Wisconsin-Stevens Point College of Natural Resources, University of Wisconsin-Extension

community garden projects across the United States that focus on providing job/life skills training to the unemployed/underemployed, lowering the cost of health care by increasing **nutritional density**³³, increasing pride in the neighborhood through beautification initiatives, and generating capital for its participants at farmers markets.

³¹ Sustainable agriculture refers to the ability of a farm to produce food indefinitely, without causing severe or irreversible damage to ecosystem health. Two key issues are biophysical (the long-term effects of various practices on soil properties and processes essential for crop productivity) and socio-economic (the long-term ability of farmers to obtain inputs and manage resources such as labor). The physical aspects of sustainability are partly understood. Practices that can cause long-term damage to soil include excessive tillage (leading to erosion) and irrigation without adequate drainage (leading to salinization). Long-term experiments have provided some of the best data on how various practices affect soil properties essential to sustainability. Although air and sunlight are available everywhere on Earth, crops also depend on soil nutrients and the availability of water. When farmers grow and harvest crops, they remove some of these nutrients from the soil. Without replenishment, land suffers from nutrient depletion and becomes either unusable or suffers from reduced yields. Sustainable agriculture depends on replenishing the soil while minimizing the use of non-renewable resources, such as natural gas (used in converting atmospheric nitrogen into synthetic fertilizer), or mineral ores (e.g., phosphate). Definition from Wikipedia

³² Community Economic Development- is action taken locally by a community to provide economic opportunities and improve social conditions in a sustainable way. Often CED initiatives aim to improve the lot of those who are disadvantaged. An aspect of “localizing economics,” CED is a community-centred process that blends social and economic development to foster the economic, social, ecological and cultural well-being of communities. It may form part of an ESCED initiative. Community economic development is an alternative to conventional economic development. Its central tenet is that: “... problems facing communities—unemployment, poverty, job loss, environmental degradation and loss of community control—need to be addressed in a holistic and participatory way.” Community Economic Development is often involved in a process of building Social Enterprises. Sometimes called the Third Sector, a community enterprise is a partnership between government agencies, small to medium enterprises, large national or transnational corporations and the not-for-profit sector, and aims for social, economic and/or environmental outcomes that none of these agencies could achieve for and by themselves.

³³ nutrient-dense foods are those foods that provide substantial amounts of vitamins and minerals and relatively few calories. For example, eggs, meat, cheese, fruit and vegetables are considered nutrient-dense food, while products containing added sugars, processed cereals, and alcohol are considered nutrient-poor food. Nutrient density can also be understood as the ratio of the nutrient composition of a given food to the nutrient requirements of the human body. Therefore, a nutrient-dense food is the food that delivers a complete nutritional package.

Case Study:

Garden projects with a social focus are abundant in the San Francisco Bay Area. Both community gardens and schoolyard gardens are common. There are gardening initiatives to support youth at risk, people suffering from drug addiction, ex-offenders, incarcerated prisoners and many others. The Homeless Garden Project (HGP) in Santa Cruz is one of these programs. It is the only program I have been able to find that works exclusively in a garden setting with homeless people and people at risk of becoming homeless. The program was started in May of 1990 by the Citizens Committee for the Homeless, a SCC non-profit. The first location for the program was an existing quarter acre community garden that with time grew to incorporate 2.5 acres of adjacent land. In 1994 the program expanded and came to include another 1.5 acre parcel. With this new land there was a focus on flower production for flower crafts to be sold by the Women's Organic Flower enterprise, an offshoot of the homeless garden project. Some may be surprised at the lack of pictures of homeless people in this report. This has been a conscious choice. One of the points that I try to get across in the description of the homeless population is that it is a very broad and diverse group. The iconic picture of a homeless person is perhaps a dirty drunk man sitting on the street begging. It would be easy for me to go out and take that picture. But it would only show a portion of the homeless population. The homeless women and children who are hiding in shelters for battered women, the homeless man who works three jobs and then go to sleep in his car or the homeless teenager who attends a drug rehab program during the day and sleeps in a thicket of shrubs in a park at night will not be represented. There are many ways to define homelessness but the most commonly used definition is in the McKinney-Vento Act. The

McKinney-Vento Act definition is currently used by federal and local authorities alike in their policy work. This definition allows for sheltered, or housed, individuals to be defined as homeless. Therefore “home means a place that is established and that the individual has some control over. In practice this has come to include all people (not only children) who are; —*sharing the housing of other persons due to loss of housing, economic hardship, or a similar reason; are living in motels, hotels, trailer parks, or camping grounds due to lack of alternative adequate accommodations.*.. This means that for instance people who live out of their vehicle, have had to move in with relatives or are “couch hopping are also considered homeless. The housed and the non housed are two of the major sub groups in the homeless population. The “absolute homeless” are people without any shelter and the “relative homeless” are the people who have a shelter but one that inadequately meets basic standards for safety and hygiene. Single (un-married) homeless adults are more likely to be male than female. One survey showed that single men comprised 43% of the homeless population and single women 17%. This is also true for SCC where single males are over represented and single females are underrepresented in comparison with the general population. Children under the age of 18 represented 39% of the homeless population in 2003; of these children 42% were under the age of five. Families with children have increased significantly in the homeless statistics over the past decade and it is among the fastest growing segments of the homeless population. It is believed that families with children comprise 33% of all homeless people. As a result of the intense stress that homeless people live under, many suffer from depression. In SCC 54.8% of the homeless reported that they suffer from depression. Another 18.5% said that they were suffering from mental illness. Poverty and homelessness are inextricably linked.

The two main trends responsible for the rise in homelessness over the past 20-25 years are; a growing shortage of affordable rental housing combined with a simultaneous increase in poverty.

The federal definition of affordable housing says that the cost for renting a one or two bedroom apartment must be less than 30% of minimum wage salary to be affordable housing. A recent U.S. Conference of Mayors concluded that in every state more than 30% of a minimum wage income was needed to rent a one or two bedroom apartment. Eroding employment opportunities for large segments of the work force and the declining value and availability of public assistance are two factors that help account for increasing poverty. According to the Economic Policy Institute (2007) the real value of a minimum wage salary in 2006 was 30% less than it was in 1979. Statistics show rising incomes but this growth is largely due to more hours worked. Twenty seven US cities recognized mental illness as a cause of homelessness in 2004. However, there were large numbers of severely mentally ill patients released from the US mental hospitals in the 1950's and 1960's and the dramatic increase in homelessness did not occur until the 1980's. Addictive disorders are disproportionately frequent in the homeless population but they cannot by themselves explain the increase in homelessness. Most alcohol and drug addicts never become homeless. However, people who are poor and addicted are clearly at increased risk of becoming homeless. A medical study claims that the levels of stress in homeless populations are among the highest ever measured. Stress research indicates that a stressful stimulus is detrimental to a person's overall well being. Stress plays a key role in perpetuating drug use and relapse (in addition to the drug itself). Little is known about the high levels of depression among homeless persons despite the fact that it is one

of the most common mental health problems in that group. Life circumstances have significant direct effects on depression. It has been proven that many homeless persons have been suffering from post traumatic stress disorder, also known as PTSD, prior to becoming homeless. War veterans are another overrepresented group in the homeless population and many of them suffer from PTSD as a result of trauma from their time in service. Although I have not seen any studies that suggest this I find it probable that some homeless develop PTSD from the traumatic experience homelessness itself may generate. The homeless garden project aims to cultivate self sufficiency and self esteem. Their official mission is;

—To bring together people from throughout the community in the beauty and security of our certified organic garden.

Practice and teach principles of economic and ecological sustainability through classes and hands on experience.

Provide homeless men and women job training and transitional employment□

It seems to me that the program has more ambitions than what the mission statement reveals. I feel that the commitment to work for long term change of the conditions for the trainees by working with their life situation as a whole and empowering them to make changes has been left out of the mission statement. The Homeless Garden Projects job training program is a way to provide the homeless participants with job training and an income as well as a community space for them to grow feel supported and connect with other community members in. It gives people the opportunity to give back to the community which is an important part of a homeless persons healing process. By producing seedlings, plants, food and flowers for sale to the greater community they are

given the opportunity to contribute to society in a way that they had previously been unable to. This helps them to move towards reestablishing their self esteem to reclaim a place, a function, for themselves in the world. At the same time they gain skills that can be useful for further contribution. The homeless community is often viewed by the housed community in very negative terms. They are typically seen as unproductive and lazy which grinds down their self esteem and sets off a downward spiral that makes many homeless feel that they actually cannot be of any help. The HGP's job training consists of three social enterprises that the trainees work in Natural Bridges Farm, Homegrown Gardens Nursery and Women's Organic Flower Enterprise (WOFE). On the farm the trainees learn how to grow and market organic produce and cut flowers. The produce is available to the community through a CSA program, sold to local restaurants and a portion is also used to feed the program participants and volunteers. In the nursery, trainees learn specialized horticultural skills and greenhouse operations as well as customer service, inventory and retail experience relevant to nursery management. Many of the seedlings for the farm are produced there and the rest are sold to the public. As previously mentioned the Women's Organic Flower Enterprise used to be a woman only part of the operation but has, in recent years, been changed to include both men and women from the program. Applying to the program is the same as applying to any other job. There is a form that the applicants are asked to fill out with name, contact information, previous employments, education level, skills and why they want to apply for the position. In order to be eligible for the program, applicants must be homeless or in the immediate risk of becoming homeless, be willing to put in the effort to change their situation and abide by the program rules. Those who are believed to be a good match are

brought in for a face to face job interview with the farm and garden staff. In person people with marginal reading and writing skills get a chance to come across better and you can also tell more about the person when you see them, such as if they are actively using drugs. Although, seeing the signs of drug use sometimes takes a trained eye. It is then up to the garden staff to decide who is accepted. The amount of applicants varies a lot but there are always more applicants than spaces. Once the applicant has accepted the job they are introduced to someone from the Community Connections Program that is set up for aiding the Homeless Garden clients to access other relevant social services. This will help them get housing, food stamps, SSI (Supplemental Security Income) etc. The person in charge of Community Connections has an overview over the client's entire case. This includes their mental and physical health, their criminal records, financial situation, status with government welfare and healthcare programs etc. The program has a disciplinary point system that gives ample opportunity for second chances. The clients are given a certain number of points for each infraction; showing up for work late, failing to call in sick, getting into a fight, coming to work under the influence of drugs or other behaviors that qualify for a point in the system. After having been given a certain amount of points the client is no longer allowed to come into work. The trainees can stay within the program for a maximum of three years. Long term change with sustained effect is the goal of the program and the long program time is considered necessary to work on the many complex issues that brought about and keep the person in homelessness. People who stay longer tend to be better off financially and emotionally than those who leave prematurely. However, few people stay the entire time. Most people leave within the first month, they find that the program is not for them. If a person doesn't make contact for a

week they are considered to have resigned. Employees are initially paid \$7.50 / hour (which is the current minimum wage in CA). As they acquire job skills and prove that they can handle certain responsibilities they get a raise. The revenue from plant, flower and vegetable sales pays for almost all the salaries of the trainees. Each client is asked to set up a series of personal goals in conversation with the Community Connections director. These goals are then used to pinpoint and bring focus to the most significant barriers preventing the trainee to gaining enough stability to move out of homelessness. This is followed up by regular check-ins to see how the client is progressing to reach those personal goals. This helps evaluate what further support is needed to help achieve them. Some people move onto work in the agricultural or horticultural sector after having finished the program. However, most do not. The most important skills that are taught are perhaps not how to propagate plants, harvest, drip irrigate, prepare cultivation beds, weed etc. All those skills are important and may very well be necessary for future jobs but even more important is learning how to behave at work, to call in when sick, to be on time, to show responsibility, and gain confidence from being able to use information learned in the classroom out in the field. The program gives the trainees some stability in their lives and provides both practical and therapeutic aid in moving out of homelessness. No shelter is offered within the program although the Community Connections program tries to advocate for housing by contacting organizations that do offer such services (however, they do not get any special treatment or easier access to housing available). Food is offered every work day. Despite the fact that SCC has many organizations that give out food some clients still come to work without having had any food that day. A large variety of plants are cultivated to create a greater horticultural vocabulary for the trainees.

The garden director Patrick Williams also say that it is good to have a lot of biodiversity since different plants affect people differently. Some people may resonate deeply with roses while others are touched by wheat grass. Working with different plant material also helps the trainees to keep their interest. The farm and garden always feel pressed to generate more revenue to support the program. The staff has to maintain a difficult balance between an effective production garden and a place of healing and learning for the trainees. The real foundation of the programs work is how people are developing, everything else is a byproduct. But without the money made from the sale of produce and crafts there will be no resources to pay the trainees a salary. It can also be good for the trainees to see the need to produce. The fact that the garden is so accessible to many different people aids in community building and helps break down walls between groups in society. When asked what the most therapeutic element in the program was, both the garden director and the assistant garden director said that working in the garden had the most positive therapeutic effect. They felt that it has a meditative quality that gives a counterpoint to the realities of the homeless situation that is not achieved by, for instance counseling or group therapy. It also helps the trainees in raising their self esteem by showing them that they can achieve, produce and care for something. They can make things grow! This is a key insight, which over time can be transformed in order to be applied to the homeless trainees themselves. More traditional creative work such as making bouquets, wreaths and other crafts also boosted the self esteem among the trainees. The benefits of creating beautiful garden crafts are seen more visibly after the first year. The hands-on training, where tips and advice are transmitted individually in the garden as the trainees work, is considered an important tool to help the participants in

succeeding with their tasks in the garden. Classroom lectures are another more abstract and technical tool for aiding the trainees in their garden work and beyond. By proving to themselves that they can sit through and absorb the information in a class, they may gain the confidence necessary to consider further education at a community college or a similar institution. Everything produced at the farm and garden is grown using organic cultivation techniques. There are no chemical fertilizers and no pesticides or herbicides used in the garden. I think this has several important implications. Products from organic agriculture generally produce high quality and more expensive produce. It is modern (although many of the techniques are old), popular and has a high status with the SCC community at large. This makes the garden more attractive in the public eye and raises the status of the trainees work. Organic agriculture takes a holistic view on the garden which permeates into everything in the program and fits the approach the program has in dealing with the needs of the trainees. The organic approach is a healing and gentle philosophy that focuses on taking responsibility for ones actions. This is an important lesson for the trainees. It also raises the trainees self-esteem and status to have a real paying job rather than being in a welfare program. They are trainees not patients, employed, not solely on welfare. The salaries they receive also help relieve them of some of the stress of poverty.³⁴

Recommendations:

There are vacant plots of land in the inner city that could be turned into community gardens. Growing food is cheaper than purchasing it from a grocery store. By

³⁴ Horticultural Therapy for Homeless People 2007 by Johan Niklasson

growing food the economic pressure on families to purchase food from a grocery store they can't afford would be greatly reduced. It would reduce pressure on the greater Kenosha community to donate food to the Shalom Center (the local food pantry).

1. Create an agricultural enterprise zone so citizens can have a community garden to generate some extra income by selling their fresh fruits and vegetables at the local farmers market.
2. The push to create a co-operative farm inside the city should be established. It should be a joint effort between Kenosha County UW-Extension and the City of Kenosha office of Planning and Development.
3. The city and the county should also strongly consider revising the ordinances pertaining to livestock mainly chicken. There are a number of cities and counties that allow chickens to be kept as pets so the owners can eat the eggs. Chickens are considered a healthy source of fresh protein. One ordinance proposal from Milwaukee suggests that citizens who wish to have chickens can only have a certain number as part of their household, the person must take a class on caring for chickens offered by UW-Extension and they must have a permit in order to keep the birds. Having chickens in populated areas is regulated in very much the same way cats and dogs are regulated.
4. EBT reads should be installed at farmers markets so that people can eat cheaper and healthier.
5. Senior citizens should automatically be enrolled in a program where they have a stake in a co-operative farm and receive food on a monthly basis.

6. Work with Gateway Technical College to provide a program that takes people from the garden to the kitchen and train people in the culinary arts and sustainable agriculture.
7. Participate in the Fallen Fruit project placing fruit and nut trees in public spaces.
8. Encourage local officials to participate in the Field of Dreams project.
9. Examine the potential in participating in the Farm to School project to reduce obesity and increase the health and nutrition of our youth.
10. Participate in the brownfield site assessment grant.
11. Participate in the brownfields, green space, and public facilities grant program.
12. Work with the EPA, Carthage, Gateway and UW-Parkside to develop phytoremediation sites.
13. Petition the state to make community gardens part of the community service jobs program.
14. Look at ordinances and state laws concerning composting.

Mass Transit



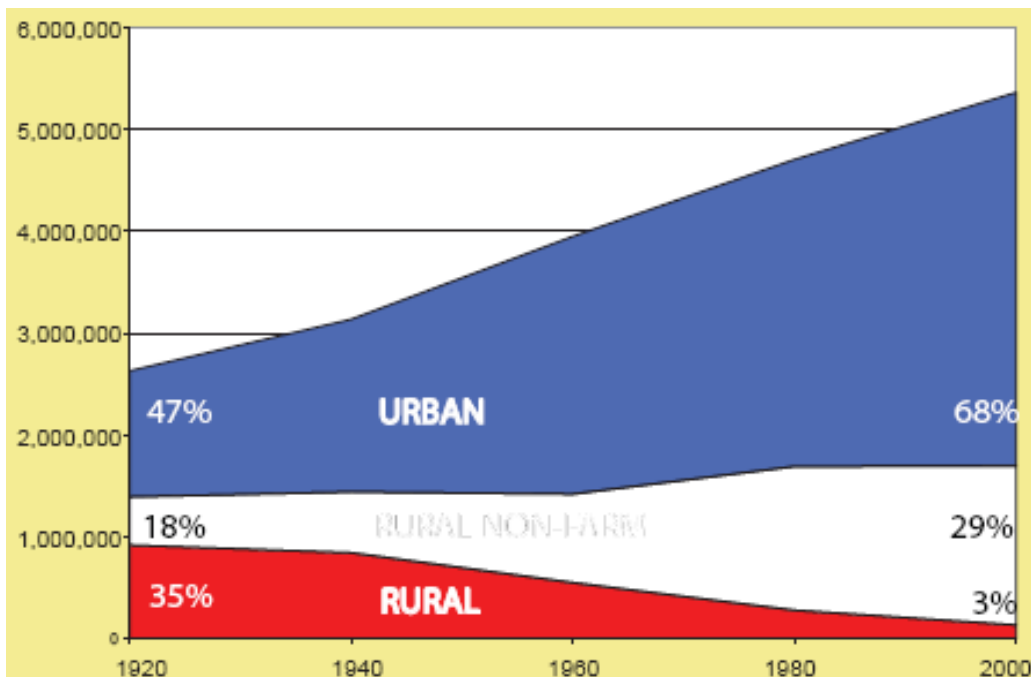
Background:

Mass Transportation is about planning for population density, accessibility, and affordability. Over the last several decades Wisconsin has seen lots of population growth in its urban areas. (See figure 12.) The baby boom generation is soon going to be the largest group of United States retirees in modern history. The Kenosha county Economic Summit of 2001, the Kenosha County Economic Summit of 2007, the Southeastern Wisconsin Regional Planning Commission and University of Wisconsin Extension Community Planning Cafe as well as other reports all cite that Kenosha has a problem retaining younger people. The overall population of Kenosha County is projected to increase 40% by 2035.³⁵ While the overall population is expected to increase, a projected decline in those aged 44 and under is expected by 8%. Those aged 45 and older is expected to increase by 7%.³⁶ With a population increase we will have to monitor population density and our built environment much more carefully. Figure 8 shows the 2030 projected population density for the state of Wisconsin.

³⁵ Southeastern Wisconsin Regional Planning Commission SEWRPC Community Assistance Planning Report number 299 A Multi Jurisdictional Comprehensive Plan for Kenosha County: 2035 Chapter 7 Issues and Opportunities Element page 3.

³⁶ Ibid

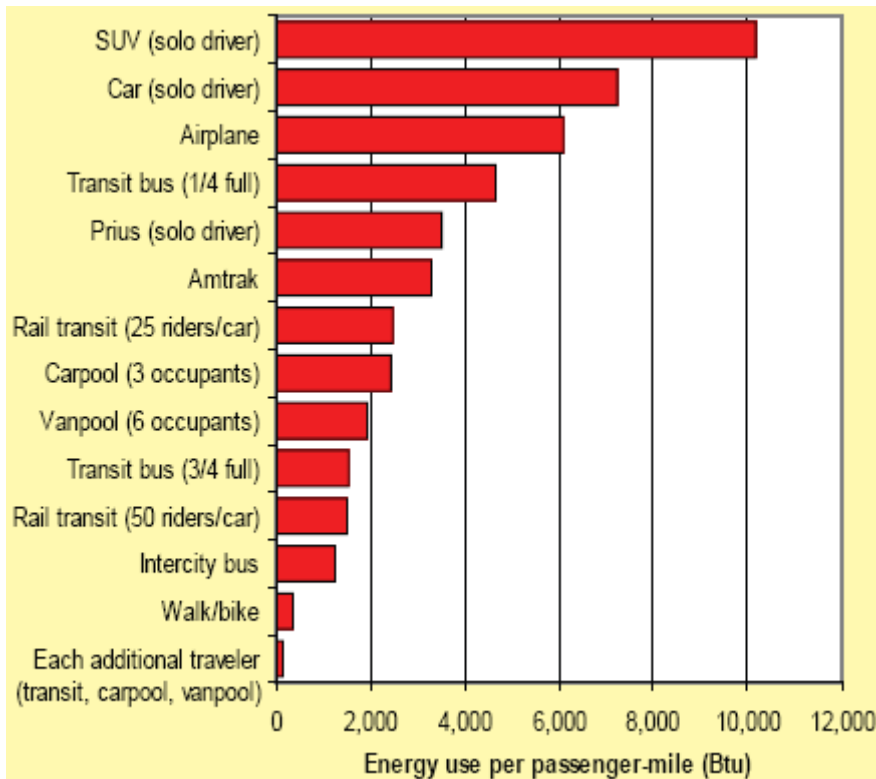
Figure 12. Wisconsin Population Shifts 1920-2000³⁷



With so many people approaching being a senior citizen, people may opt out of having a car or find that having a car is too much of an economic burden. Kenosha also has a very active bar culture. Mass transportation consumes less energy per person and provides an alternative method for keeping people out of cars and off the roads. (see figure 13.) Mass transportation whether it is bus, commuter rail, high speed rail, or subway is most effective when it is located in very populous areas. It is extremely difficult to plan public transportation after an area has become heavily populated. Therefore targeting an area so that it can accommodate an increase in population density should be what drives the planning process. One transportation engineer used the term, “density footprint”.

³⁷ Megatrends: Housing University of Wisconsin-Stevens Point College of Natural Resources, University of Wisconsin-Extension

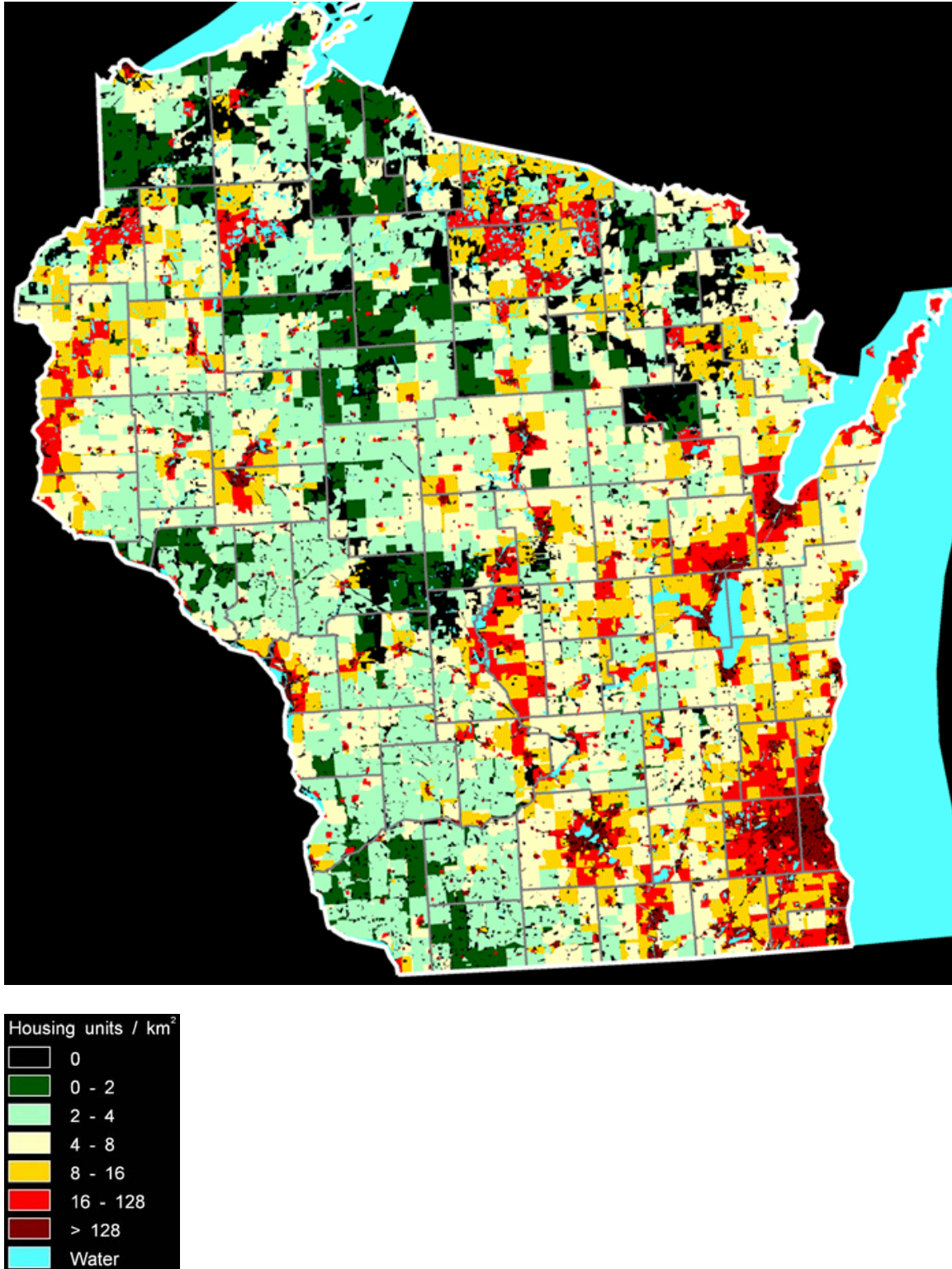
Figure 13. Energy Consumption by Travel Type³⁸



Walkability should also be something that is considered in the transportation planning process. A person has to walk from their point of origin to the bus station, rail station or subway platform use the transportation system then walk to their destination. If it is a round trip commute than this same process will have to be repeated over again.

³⁸ Megatrends: Energy University of Wisconsin-Stevens Point College of Natural Resources, University of Wisconsin-Extension

Figure 14. 2030 Wisconsin Projected Population Density³⁹



³⁹ University of Wisconsin-Madison Forest and Wildlife Ecology SILVIS Laboratory

County wide we have focused much of our efforts on zoning and building single family homes. If the homes have not gotten bigger the plots of land they sit on have. Zoning and building for more people in a given area increases the probability, affordability and incentive for people to utilize mass transportation. Economically, a good transportation system costs less money to operate when there are more people using it. With that in mind it can be clear that single family homes are not in the best interest of supporting transportation.

Mass transportation has the capability to promote citizen interaction, raise the quality of life, increase public health, assist our most vulnerable populations with their day to day transportation needs, and save citizens money.

Solutions:

Mass transportation builds community by promoting social interaction. As people take their daily trips they encounter other people. Everything from casual conversations to finding ones significant other can happen from socializing on mass transportation. Mass transit also reduces road rage and boosts the quality of life. Harvard Political Science professor Dr. Robert Putnam states, “There’s a simple rule of thumb: Every ten minutes of commuting results in ten per cent fewer social connections.”⁴⁰ Commuting is connected to social isolation, which causes unhappiness.” Road rage is just as much psychological as it is social. When a person drives a car they become socially isolated. They become a machine operating a machine. If another machine does something inappropriate a person acting as a machine might utilize their machine to prove a point. Remember machines analyze and react they don’t ask why. The commuting paradox

⁴⁰ There and Back Again: The Soul of the Commuter by Nick Paumgarten New Yorker Magazine 4/16/2007

reflects the notion that many people, who are supposedly rational, commute even though it makes them miserable. They are not, in the final accounting, adequately compensated. They found that, if your trip is an hour each way, you'd have to make forty per cent more in salary to be as "satisfied" with life as a noncommuter is.⁴¹ Mass transit reduces road rage because by interacting with others the person as machine process does not take place. Mass Transportation takes cars off the road thereby reducing the levels of car emissions in the environment. The reduction of vehicle emission levels reduces the rates of asthma and heart disease in areas heavily traveled by cars. Mass transit is a great option for young people who do not have access to cars, adults who do not have cars, anyone who wish to save money, and elderly people who want to retain a sense of personal independence.

Case Study:

In 2007 Charlotte North Carolina Mayor Patrick McCrory was elected to his 7th term. Throughout his time in office 2 billion dollars had been spent on state and local road projects. His reelection came with controversy concerning mass transportation. The mayor, a champion of fiscal conservancy, backed a plan to build light rail inside of the city of Charlotte. Newspaper cartoons and newspaper columns saying that the Mayor McCrory had lost his way were all over the city and threatened to end his political career.⁴² When the day of the election came, the voters backed the mayor and backed the plan for light rail. Mayor McCrory secured \$200 million dollars in federal funds for light

⁴¹ Stress That Doesn't Pay: The Commuting Paradox by Alois Stutzer and Bruno S. Frey University of Zurich August 2004 discussion paper number 1278

⁴² PBS Now Stimulus Roadblock 2/13/2009

rail.⁴³ The Mayor was banking on big international companies such as Cherokee Investment Partners, located in Charlotte, to swoop down, buy land and put up pedestrian-friendly businesses and homes around new transit stations. This is not to suggest that progress in Charlotte has been easy. Arranging streets, parking, condominiums, shops, plazas and other components of development around transit here involves many choices. Planners and developers still are struggling to balance the competing needs of parking and active street life in these new projects. But in terms of a market and a vision, there is increasing clarity. Living near a transit stop has become part of a tried-and-true formula of downtown living. Charlotte opened its \$465 million, 15-stop, 10-mile "blue line" last November. LYNX, as it is called, has about 13,000 riders daily, well ahead of the low-ball federal projections. Now, the city and region are working on the many other ideas for lines and extensions. A total of 7,000 new condominiums are planned along the line. David King, who helped shepherd through assistance for LYNX from the state's transportation department when he was its deputy secretary, says, "Most people don't realize this is going to change the face and shape of Charlotte." Last November, just weeks before LYNX opened, a grassroots referendum backed by angry anti-tax and anti-transit activists asked voters to repeal the half-cent sales tax for transit funding. It failed by a two-to-one margin. "The light-rail vote was a seminal moment," says Mark Peres, the president and editor of Charlotte Viewpoint, a magazine about culture and civic life. "We were being held hostage by a minority viewpoint. Those people just sort of went away. It's just seismic in its impact." The original plan for financing the system, however, builds in some difficulties for the future. Back in the late 1990s, Mecklenburg County and the city of Charlotte banded together

⁴³ Charlotte, North Carolina Mayors homepage

with Raleigh, Durham, Greensboro and other cities to push a bill through the legislature allowing counties to propose tax increases to their citizens to fund transit. Charlotte's voters approved the tax in a referendum. There also emerged an agreement that the state DOT would match local funding, or 25 percent of the total cost. The federal government was expected to pay 50 percent. Now, as new lines are planned that go beyond Mecklenburg, there is a question of who will pay and how. Will surrounding counties and localities enact their own sales taxes? Or is Charlotte expected to be the primary local funder, even for lines outside Mecklenburg County? And what should the role of the state transportation agency be? It is, after all, the one agency whose jurisdiction cuts across multiple county lines. I believe the parties should explore having the state agency take more direct responsibility for building and paying for transit within urban areas. When the state builds a road, it takes on the burden of coordinating with all the counties it goes through. It buys land, negotiates rights of way and designs and builds a project. Departments of transportation are traditionally highway-minded, and North Carolina's is certainly no exception. But bringing these agencies into the transit fold suggests a way to turn them into allies. Eventually, it makes sense for state transportation money to be portable and to be used for either roads or transit lines, as conditions fit. Whatever the models developed, it's a near-certainty that the new lines here in Charlotte will be built. There is simply too much interest in this new way of living.⁴⁴

Recommendations:

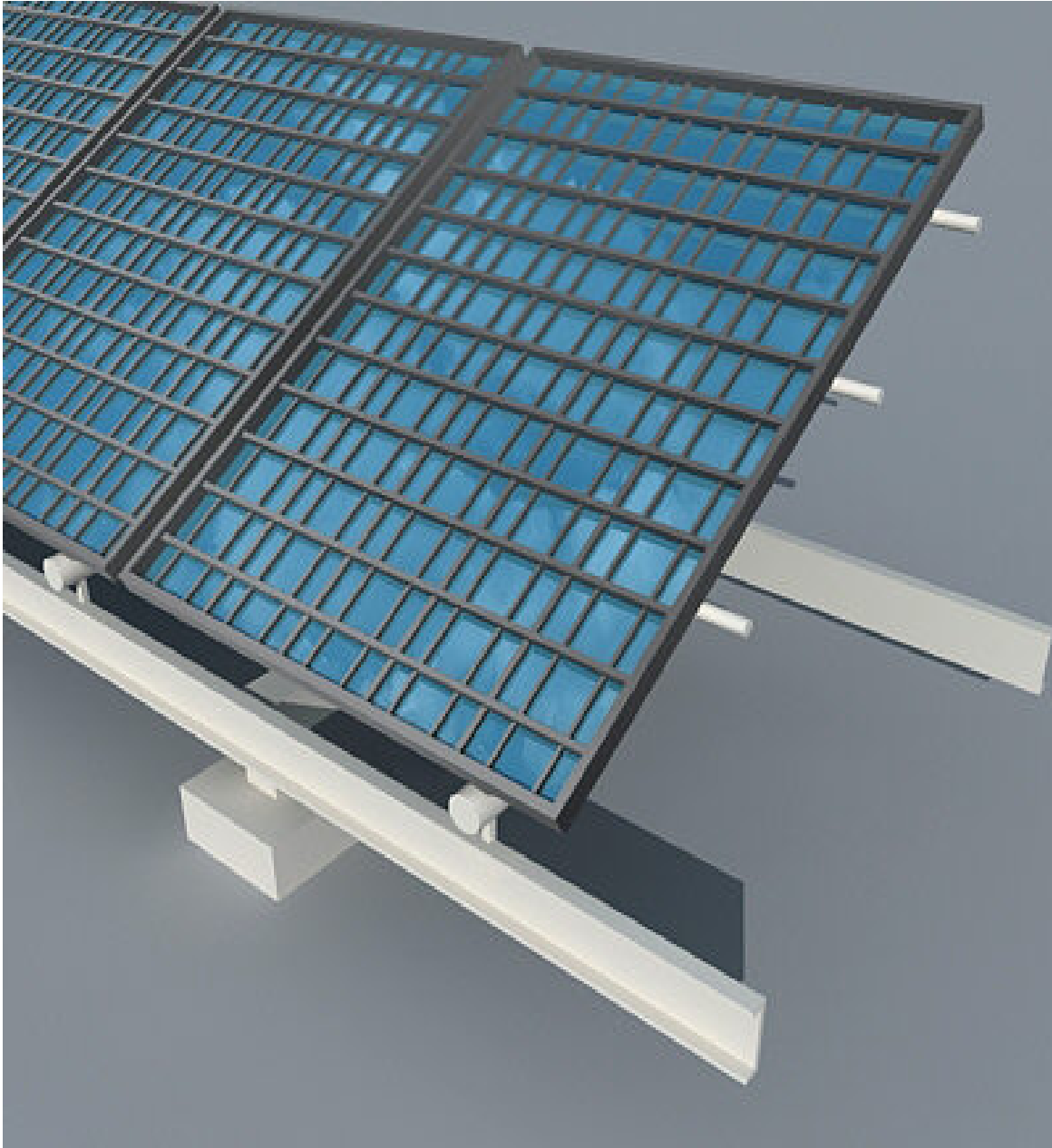
To better plan and make use of mass transit Kenosha County should:

1. Survey and target areas for potential strong population growth.

⁴⁴ Governing Magazine More than Just a Train by Alex Marshall 2008

2. Plan the mode of transportation that will be used to get people from place to place.
3. Zone the areas for mixed housing styles and mixed income areas to get people more socially comfortable with intermingling and using methods of transportation together. Not everyone can afford or wants a home.
4. Encourage the development for more apartments and townhomes for various income levels.
5. Put together an advertising campaign encouraging people to take mass transportation.
6. Find commercial or industrial developers who focus on creating interesting walking environments.
7. Reexamine the proximity of industrial areas to commercial area and residential areas in planning and zoning.
8. Look for opportunities for mass transit to use electricity, hydrogen, or biofuels for power. If possible make mass transit zero emission.
9. Look for ways to make mass transit accessible and affordable for the elderly.
10. Find ways to incorporate bicycle racks into heavily trafficked areas. Have a bicycle rack ordinance.

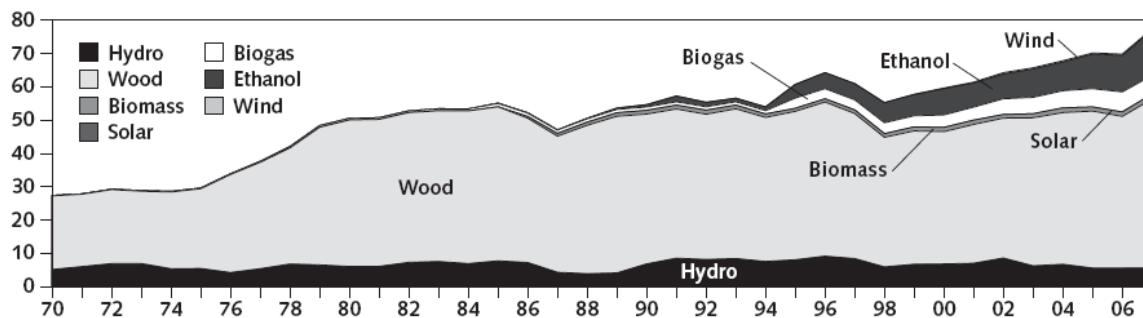
Solar



Background:

With everything that we build we increase the demand for energy thereby putting stress on the power company to supply more and increase the strain on our budgets. The energy needs of industry, commerce, and government can be rather large. In the year 2007, 71% of our total energy consumption went to the residential, commercial and industrial sectors.⁴⁵ Buildings make up our built environment. Our built environment in conjunction with **appropriate technology** offers us a lot of new opportunities to use space in ways we would not have considered before. By factoring in solar energy into how we use space we can create jobs, reduce waste, and keep the demand for energy in step with the supply in a way that won't harm our physical health. (see figure15.)

Figure15. Wisconsin Renewable Energy Production 1970-2007 in Trillions of Btu⁴⁶



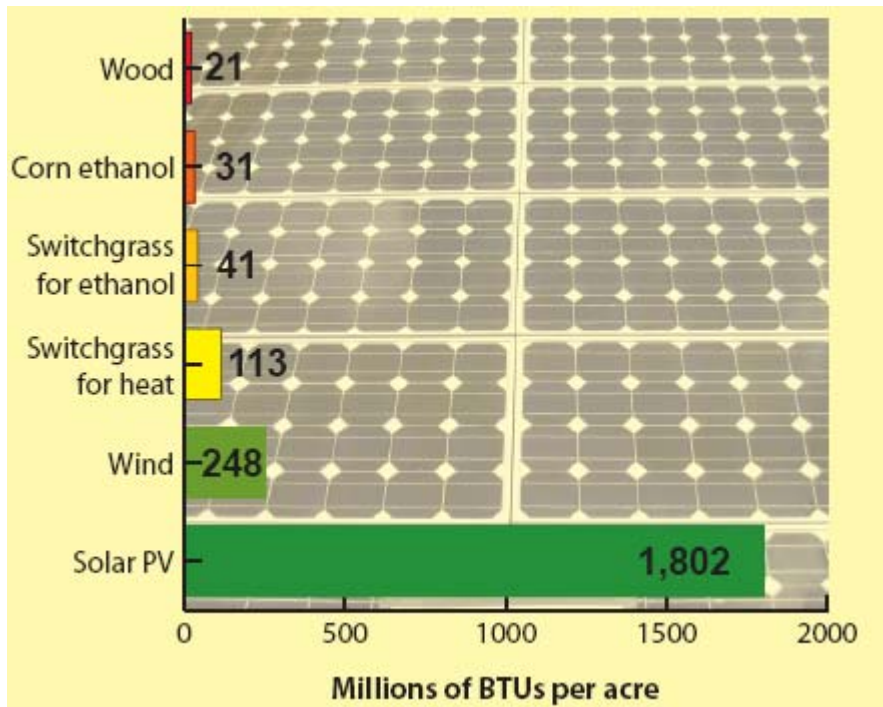
There is even the potential for an individual person to make some money in the process. There are two types of solar energy, thermal and photovoltaic. Solar thermal devices use direct heat from the sun, concentrating it in some manner to produce heat at useful temperatures.⁴⁷

Figure 16. Wisconsin Renewable Energy Production per Acre⁴⁸

⁴⁵ United States Energy Information Administration Energy Consumption by Sector 2007 report figure 2.1a

⁴⁶ State of Wisconsin Office of Energy Independence Renewable energy Portfolio

⁴⁷ United States Energy Information Administration



Solar photovoltaic devices use semi conducting materials to convert sunlight directly into electricity. Solar radiation, which is nearly constant outside the Earth's atmosphere, varies with changing atmospheric conditions (clouds and dust) and the changing position of the Earth relative to the sun. Nevertheless, almost all U.S. regions have useful solar resources that can be accessed.⁴⁹ Solar photovoltaic devices are what is most often mentioned when people reference solar energy.

Solution(s):

The rooftops of our buildings are great places to collect the sun's rays and use them for energy. Encouraging citizens to join together and create electric cooperatives to share the power ought to be investigated.

⁴⁸ Megatrends: Energy University of Wisconsin-Stevens Point College of Natural Resources, University of Wisconsin-Extension

⁴⁹ United States Energy Information Administration

Case Study:

Ohio State Representative Lou Blessing, of Cincinnati, wants to start the program in Northeast Ohio in school districts served by First Energy Corp's Illuminating Co. and Ohio Edison. He figures the project would rescue districts from skyrocketing electric bills if First Energy ends discounted school rates next year, as it has told the state it intends to. School districts here are bracing for 40 percent higher bills if the discounts end. During the school year, Blessing says, districts could use the solar power generated on their roofs rather than buy it from First Energy. On hot summer days, when school was out, the power would flow into the utility's local distribution grid, just as demand peaks. A First Energy spokeswoman said the Akron-based utility would be interested in buying the power. The utility already takes power from homeowners who have installed solar panels. Blessing wants to use Ohio-made solar panels - and eventually roofing materials with built-in solar modules. The plan, he said, would jump-start solar manufacturing in the Buckeye state. He estimates the project would cost \$6 billion, although some analysts say the cost could be higher. Accelerated depreciation under federal tax rules and a 30 percent renewable energy tax credit, which is up for renewal in Congress, would cut that in half, Blessing said. Reduced electric bills for the schools would make up the difference over time, he says. "A project of this size would literally turn Ohio's economy around," Blessing said in an interview. "It's a \$6 billion jobs and progress plan. And the state doesn't have to spend anything." Because Ohio would place the largest order in U.S. history, the cost of solar panels would fall, Blessing argues. "The beauty of this is that panels could become inexpensive enough for homeowners to buy them." The solar-equipped school buildings also could lower overall summer power prices by generating

up to a billion watts of extra electricity, about as much as one of First Energy's nuclear reactors produces. But in this case, there would be no fuel bills. Blessing is a member of the Public Utilities Committee of the Ohio House and has sat through weeks of hearings over Gov. Ted Strickland's comprehensive energy bill aimed at restructuring the state's utility regulations and creating a renewable energy manufacturing base in Ohio. As Strickland wrote it, the bill would keep utility rates under state control and require Ohio's utilities to generate 25 percent of their power by 2025 with renewable and advanced technologies, such as solar, wind and high-tech coal-burning systems. The House Republican leadership, which has been reviewing the bill since November, is adding more stringent rules on renewable power but has hinted that it is looking at allowing utilities to move out of rate regulation. A rewritten, substitute bill is expected late this week or early next week. House Speaker Jon Husted last week said he had not seen details of Blessing's proposal but was familiar with the concept. Blessing said he got the idea after reading a Plain Dealer article airing the complaints of Northeast Ohio school officials at a hearing about First Energy rates. The utility has offered all schools a lower rate and included an extra discount for districts that paid three years ahead. But First Energy wants to base its electric rates on wholesale power markets beginning in 2009; a move it says would require it to end all discounts. "I read that story and thought it would be absolutely insane not to do this," Blessing said. Ken Clickenger, business manager of the Euclid schools, welcomed the idea. "Anything that will help us save energy in the future sounds like a good thing," he said. "It's a great idea. I would not restrict it just to solar. What about fuel cells or geothermal systems?" Blessing said he submitted an amendment to Strickland's bill last week and also gave the proposal to the governor's

office. Mark Shanahan, Strickland's energy adviser, said: "I think it is a really interesting proposition. If his numbers work out to be right, it is a good project." The amendment would require the School Facilities Commission and the Ohio Department of Development to work together to create the solar program, if Congress extends the 30 percent federal tax credits. The state would be required to negotiate with manufacturers for discounted prices for the huge orders of solar equipment needed. Blessing has already talked to one company, the Xunlight Corp., a Toledo-based spin-off from tax-funded research at the University of Toledo. He said he planned to sit down today with representatives of First Solar Inc., an established thin-film solar panel producer in Perrysburg. The 9-year-old company exports most of its current production. Xunlight (pronounced Sunlight) plans to begin limited production in the next couple of months of thin-film solar modules printed on flexible stainless steel. Commercial production is planned for the fall, with a ramp-up next year. "When you are talking about 100 million square feet of solar modules, as a solar manufacturer we are very interested," said Matthew Longthorne, vice president of development at Xunlight. "One of the advantages that we believe we have is that our product is lightweight and flexible," he said. "We would like to have that module integrated into the roofing membrane and go down on a flat roof. It would be perfect for schools." Xunlight has contacted Incorporated, a Cleveland-based, century-old roofing manufacturer that just weeks ago won a \$1 million Ohio Third Frontier grant to commercialize a process to meld solar modules into roofing membranes. "We are already putting solar on school building roofs, just not in Ohio," said Brian Lambert, a director at Garland. "We've done it in California. We'd love to do it in Ohio. We'd love to work with Xunlight." Blessing said a number of analysts have

reviewed his plan's financial assumptions. Not all analysts agree that installation costs would be what he assumes. An industrial analyst and a number of smaller solar installers reviewed the proposal for The Plain Dealer. The consensus: The project could cost more than the \$6 billion Blessing projects. "I think the lawmaker's idea is a good start," said Erika Weliczko, owner of REpower Solutions of Cleveland. "But it needs some development." Even if the price of thin-film solar modules plummets in coming years as analysts expect, installation costs will be harder to streamline, they said. A one-piece membrane as envisioned by Garland Co. and Xunlight could help, however.⁵⁰

Recommendations:

To better make use of solar energy Kenosha County should:

1. Host a seminar for contractors about the benefits of solar energy.
2. Target parking garages, businesses, local government institutions, and educational institutions for the placement of solar panels.
3. Convert LED street lamps and all other to solar power with a battery.
4. Look for ways to have electric cooperatives in neighborhoods, towns, and villages.

⁵⁰ Cleveland.com News Solar Panels Proposed for Ohio 2,000 New School Roofs by John Funk 4/8/2008

Waste



Background:

The concept of waste has been applied to virtually everything. If it's old, dirty, broken, or deformed just throw it away. Everyday the landfills of our nation get a little fuller. Finding a place to put all of our waste without our waste poisoning us is becoming a problem for cities all across America. There is always the fear that leachate, the liquid produced by landfills as the items in the landfill decompose, will leak out into the water supply or contaminate the soil. Environmental cleanup from a disaster of this magnitude can be a highly costly endeavor. The average Wisconsin resident will throw away 4.7 pounds of trash each day and recycles 1.9 pounds of that trash or recycles 40%⁵¹. (see figure 17.) The act of throwing things away also erodes our economic potential to provide jobs, services, and reduce the cost of goods. This means that each adult will leave a legacy of 90,000 lbs. of trash for his or her children. By rethinking our concept of waste we can reduce the cost of goods, provide hundreds of new jobs, and use less of the earth's resources. (see figure 18.)

⁵¹ Southeastern Wisconsin Regional Planning Commission Multi-Jurisdictional Comprehensive Plan
Kenosha County Fact Sheet Chapter Five Inventory of Existing utilities and Community Facilities Page 2

Figure 17. Materials Generated in Municipal Solid Waste 2007⁵²

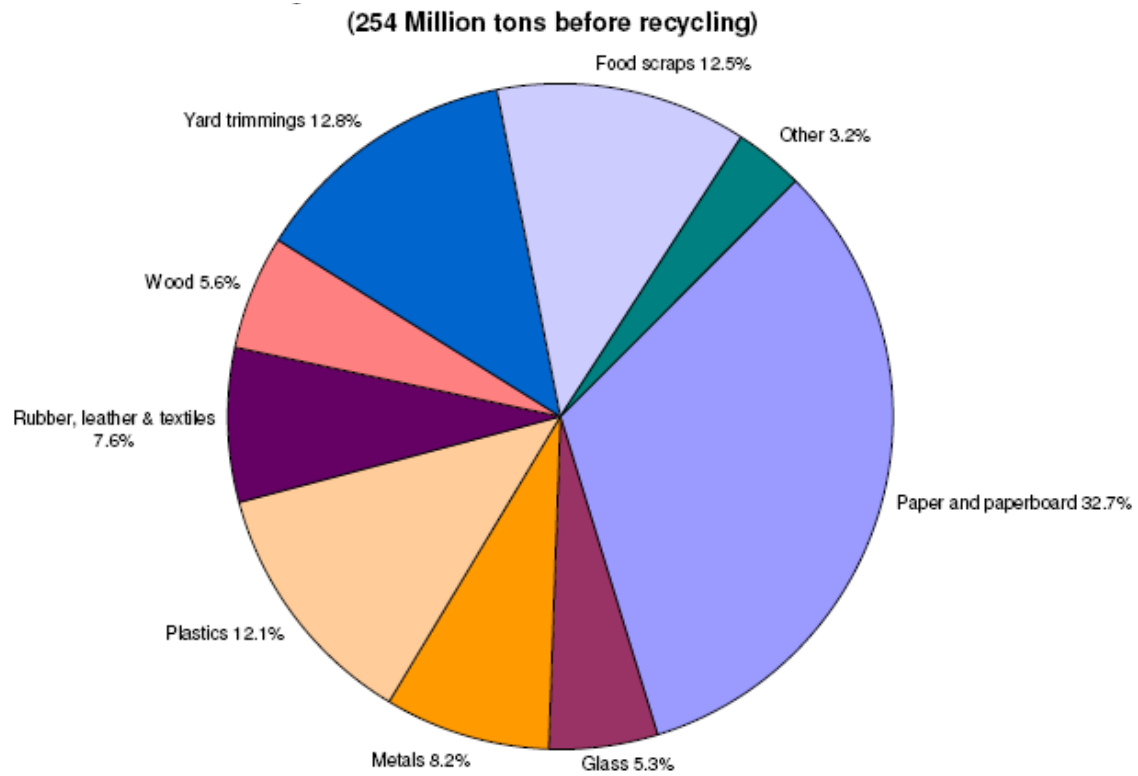
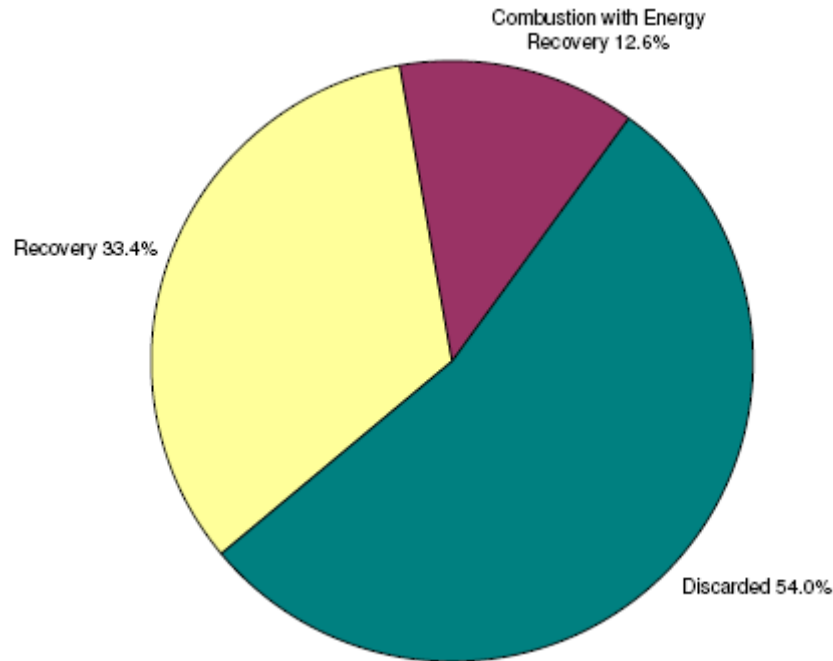


Figure 18. Management of Municipal Solid Waste in the United States⁵³

⁵² United States Environmental protection Agency Municipal solid Waste 2007 Facts and Figures

⁵³ Ibid



Solution(s):

Recycled goods can be used to make products such as glass panels, carpet, upholstery, desks, tables, chairs, lamps, cars, computers, t-shirts, cell phones, and other items. By recycling more of the things we use instead of throwing them away we create a chain of jobs in several industries simply because we have chosen to take a different action. Composting should be practiced to maximize the nutritional density of our food.

Case Study:

Reuse is the recovery of discarded, yet usable materials from the waste stream. While recycling extracts materials such as metal, glass, and plastics from discards, reuse preserves them whole, including the value of labor, technology, and energy incorporated in them. Reuse enterprises offer quality products to people with limited means and generate jobs and business activity that contribute to the city's economy -- an alternative to costly exports of reusables as waste. New York City's newest reuse venture is Build It Green! (BIG!), a non-profit retail outlet for reusable building materials in Astoria,

Queens. For its opening on Feb.12 it had 45 tons of doors, windows, sinks, cabinets, flooring, lighting and other goods priced at 30% to 70% less than new.“ Customers purchasing salvaged and surplus building materials not only save money“,says Justin Green, BIG!'s program director, „they also help keep perfectly useful material out of the landfill.“ Housed in 17,500 square feet of a former foundry, BIG! plans to expand its inventory to add new environmentally-friendly materials that aren't regulady stocked by commercial suppliers of building materials. BIG! also offers a deconstruction service with crews that carefully dismantle buildings to salvage reusable materials - a green alternative to demolition. To date, these crews have salvaged over 70 tons of reusables and recyclables as part of two large-scale deconstruction projects of The Durst Organization a NYC-based company that has pioneered commercial green development. In the future, BIG! plans to include green building consultancy in its services. The merchandise BIG! sells is a mix of materials salvaged from buildings and donated by suppliers or manufacturers discontinuing product lines or cleanng out storage space. BIG! is a service of Community Environmental Center, which provides energy conservation services throughout the New York metro area. Diverse ventures. New York City's reuse sector offers a variety of goods and services from refurbished computers and industrial surplus to household items and skills/job training. Programs such as Materials for the Arts, NY WaSteMatch, Tools for Schools, Recycle-a-Bicycle, Goodwill and City Harvest offer affordable materials to people operating on tight budgets, provide tax benefits and reduced disposal costs to businesses and individuals, and help educate the public about waste prevention. To have a substantial impact on NYC's trash burden, however, the number and scale of reuse programs must increase. In 2003, more than 20 reuse

enterprises came together under the umbrella of the Reuse Alliance (RA) the nation's first member-led regional reuse organization. It aims to build a dynamic network of organizations and interested parties, says founding director MaryEllen Etienne, that will improve reuse infrastructure, share resources and technical support, attract new investment; and increase public awareness. A recent RA effort is to build support for large-scale community reuse complexes that can provide retail and warehouse space for expansion of existing reuse programs and incubator space for new ones. The model is Hunts Point Markets --fish, produce, and meat -- for which the city provided low-cost land and buildings as well as technical assistance and business services. The savings to the city in decreased waste disposal could offset its investment. „We believe cooperatively managed facilities can do for reuse what Hunts Point has done for food distribution“, Etienne says.⁵⁴

Recommendations:

To increase our recycling and composting efforts we can:

1. Government, educational institutions, and industry should purchase goods made from recycled materials. Setting a recycled materials goal can help purchasing. Goods purchased should have a percentage content recycled standard set by the institution.
2. An online data base should be made of businesses in Wisconsin that deal in recycled goods.
3. Public areas of local government buildings, parks, streets and educational institutions should have separate receptacles for glass, plastic, paper and trash.

⁵⁴ Reuse Enterprises Keep Discards out of Landfills New York City Sierran by John Pearson 10/21/2008

4. Local governing bodies should do away with using polystyrene (styrofoam) and plastic containers for water.
5. Local governing bodies and educational institutions should make the effort to go paperless where possible.
6. All paper that is purchased should be recycled paper.
7. Efforts should be made to teach kids how to recycle. The city of Kenosha had a recycling coordinator. The city of Kenosha also has a part time keep Kenosha Beautiful coordinator. UW-Extension has recycling coordinators. Explore the possibility of a joint city-county sustainability director.
8. Local ordinances regarding composting should be reexamined.
9. Local ordinances and state laws regarding composting should be examined.
10. If it is possible bins should be made available to citizens for composting organic matter.
11. Explore ways to have a more effective recycling program.
12. Consider ordinances mandating recycling for businesses.
13. Participate in the recycling market development program.

Water

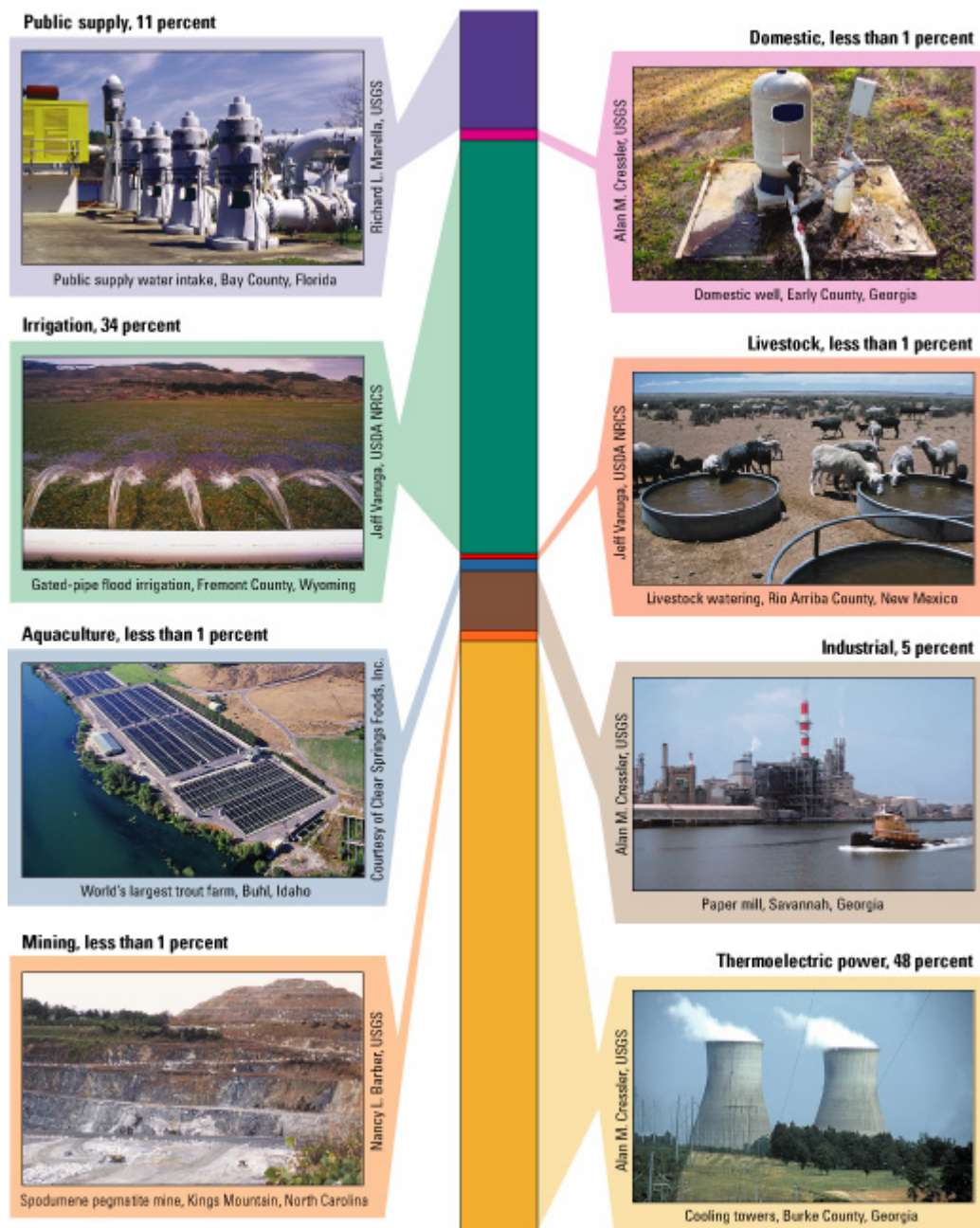


Background:

The battle over water rights in the 21st Century has officially begun. Many southern and western states are looking at the Great Lakes as a way to solve their water crisis. Many of these states are arid climates that use water to grow oranges, grow their lawns (grass is the largest crop in America), and hydrate people. Native American people have expressed their concern about being shut out from having access to water. New Mexico Governor Bill Richardson wanted to build a pipeline from Lake Michigan to his state to provide water for the citizens of his state. Concerned citizens, activists, and government leadership from the states that border the Great Lakes felt the need to come together to protect their fresh water jewel. It was out of this coordinated effort the Great Lakes Compact was born.

The commotion that has arisen from the demand for water has led people to ask the following questions: Where does our water come from? Are we treating the source of our water with the respect it deserves? Are there other sources of water we are under utilizing? Answering the questions requires us to look at the long term growth projections of our municipalities. Some municipalities in Kenosha County use underground aquifers to supply their water. The streams, rivers, and lakes that exist in the manner that we use them today, may not be there tomorrow. Smart planning is needed to keep the supply of water consistent with the demand. (see figure 19.)

Figure 19. Total Water Withdrawals by Category: 2000⁵⁵



Our efforts today should focus on efficiency, conservation, and recycling.

⁵⁵ United State Geological Survey Report Estimated use of Water in the United States in 2000

Solution(s):

Our water planning has to be a multi pronged approach. Municipalities in Kenosha County get their water from a variety of sources. By doing things like turning off the water when we brush our teeth we are conserving water, we take less water from our streams, rivers, and lakes. By having appliances that use energy and water more efficiently we use less water to do more things. The surfaces we pave in our county, where possible, should be porous to allow the water to replenish underground aquifers. We can also recycle water and collect rain water. In theory, about six-tenths of a gallon of water is produced by one inch of rainfall on one square foot of roof area.⁵⁶

Case Study:

In California, water recycling, or the beneficial use of reclaimed water, involves the reuse of treated wastewater for non-potable or indirect-potable uses. Recycled water has been used as planned non-potable water supply in California for over a century, beginning in the 1880s, when raw wastewater was used to irrigate orchard crops. By the mid-1990s, nearly 600 million cubic meters of treated wastewater was being used annually for agriculture, landscape irrigation, groundwater recharge, environmental needs, and urban based uses such as landscape irrigation and industrial processes. Cities and water districts in California are increasingly turning to recycled water as a source of supply as access to new supplies of fresh water becomes more constrained. Agencies in southern California have turned to recycled water for groundwater recharge, which not only helps replenish aquifers, but also provides an alternative to purchasing imported surface supplies for recharge. The County Sanitation Districts of Los Angeles County, Los Angeles County Department of Public Works, and the Water Replenishment District

⁵⁶ Rainwater Harvesting Systems for Montana University of Wisconsin Extension Montana Mt 199707

of Southern California have been recharging the Central Basin groundwater aquifers with treated effluent since the 1960s. Orange County Water District has used recycled water in its seawater barrier injection operations since 1976, and the district is developing a proposal for a groundwater recharge project that will recharge more than 100 million cubic meters of recycled water annually. In Monterey County, the Monterey Regional Water Pollution Control Agency and Monterey County Water Resources Agency are cooperating in a US\$75 million regional water-recycling project to ultimately provide around 20 million cubic meters of water annually for nearly 5,000 hectares of farmland. This would replace groundwater pumping from a coastal aquifer that is over drafted and suffering from seawater intrusion. The Irvine Ranch Water District in southern California has promoted broad use of recycled water for urban landscaping for nearly 30 years and now also provides recycled water for commercial high-rises to flush toilets. The East Bay Municipal Utility District in northern California has worked with industry to develop a recycling project to serve cooling water needs for oil refinery operations. As the cost of potable supplies increases, recycled water projects will increasingly become more viable economic alternatives for stretching California's freshwater resources. On the financial side, benefits of the recycled water projects are clear but not always easy to value in a purely economic fashion. Water recycling may not be the least-cost alternative in traditional economic terms, but it offers long-term economic benefits of future reliability and/or environmental benefits that other alternatives may not offer. Additionally, projects provide environmental benefits in terms of reducing wastewater flows and substituting for potable supplies. The sharing of these kinds of costs or the recovery of these values continues to be difficult. Most often, the costs are borne by those undertaking the project.

While the long-term benefits may be clear, they do not always accrue to the entity financing the project, nor can the organization always afford the initial capital costs. Finding partnerships can help share costs, and this is where it is particularly important to make the connection between wastewater and water supply and the benefits that accrue to both. Overcoming traditional institutional barriers that separate wastewater and water-supply functions is important for cost-sharing reasons. Additionally, it allows for better identification of benefits and cooperative exploration of a more comprehensive alternative that can serve both wastewater and water-supply needs. Finally, as projects seek to expand water reuse options, it becomes increasingly important that the science and regulations keep pace with identifying, verifying, and permitting the safe practice of new uses. The Laguna Wastewater Treatment Plant (WTP) treats wastewater collected from the cities of Santa Rosa, Rohnert Park, Cotati, and Sebastopol, from the South Park County Sanitation District, and septic systems from most of Sonoma County. The city of Santa Rosa is the managing partner of this sub regional wastewater reclamation system. The city has a history of reuse, dating back to 1974, providing secondary-treated water for local agricultural uses. In 1978, WTP provided secondary-treated water to about 1,200 hectares of fodder and pasture for local dairies. In 1989 it expanded and upgraded its treatment process to tertiary treatment to increase disposal options. Historically, water reuse has been driven by the area's need to meet wastewater discharge regulations. The Laguna WTP is currently permitted to treat 68,127 cubic meters per day (average dry-weather flow), and its annual average flow was 26.5 million cubic meters in 1994. It discharges into the Laguna de Santa Rosa and Santa Rosa Creek, which flows about 16 kilometers to the Russian River. The plant is only allowed to discharge to the

Russian River when river flows are a minimum of 28 cubic meters per second (usually by November), and then only up to 1 percent of the river flow. Flows that exceed the discharge requirement must be stored. Laguna WTP has storage facilities that can hold about 5.7 million cubic meters of reclaimed water. The plant is not allowed to discharge into the Russian River at all from May 15 to October 1. Thus, during this period, tertiary-treated wastewater from the Laguna WTP has been directed to various water recycling projects in the area. In fact, during the October 1 to May 15 discharge season, Laguna WTP has regularly sought a temporary increase to discharge up to 5 percent of Russian River flows. Difficulty meeting the current regulations (1 percent of flow limitation) and concerns about future growth (the plant expects wastewater flows to increase to over 30.3 million cubic meters per year) led the city to develop a long-term wastewater plan to address those needs. Maximizing reuse and water conservation were part of all long-term alternatives under consideration. In spring 1998, the city council approved the Geysers recharge alternative. This will involve providing an average of 41,633 cubic meters per day of recycled water for injection and recharge at the Geysers steam field located in the Mayacamas Mountains northeast of Healdsburg, which is used as a source for geothermal energy. Provision of recycled water year-round would limit discharges into the Russian River to peak wet weather events. The city of Santa Rosa has long adopted a water reuse program to accommodate growth and manage its wastewater program. Water recycling allows the city to meet wastewater discharge requirements that restrict the amount of effluent that can be discharged to surface streams. It uses its tertiary-treated water to irrigate about 2,400 hectares of land in and around Santa Rosa. A principle that guides their recycled water reuse is to help support an agricultural greenbelt around the city that

includes dairies, vineyards, and farms. Recycled water is also being used in an organic vegetable farm and a constructed wetlands project. To expand and further diversify its reuse options, the city recently approved a recharge project that will take reclaimed water year-round for recharging a steam field for geothermal energy. The city of Santa Rosa reuse projects have always been primarily guided by wastewater disposal requirements. It has consciously sought to improve treatment practices to diversify and expand reuse opportunities. Laguna WTP's conversion to tertiary-treated water in 1989 increased the range of agricultural uses for its recycled water and, in 1995; they established UV treatment to eliminate the use of chlorine in disinfection processes. The treatment plant now provides water to about 1,660 hectares of fodder, sod and pasture, 202 hectares of urban landscaping, 283 hectares of vineyards, 101 hectares of row crops, and 2.8 hectares of organic vegetables. The row crops are primarily several varieties of squash; they are started with recycled water, and then switched to well water when the fruit sets.

Agricultural water users take the recycled water free of charge. In fact, some of the earlier contracts were written with incentives \pm farmers were paid to take a specified amount of recycled water for irrigation. Urban irrigators are provided with recycled water at a rate set at three-fourths the potable rate. To date, the demand for the plant's recycled water during the summer months is greater than the supply. The plant is able to store water (up to 5.7 million cubic meters) during the spring to provide additional recycled water during the irrigation season and provides an average of 13.6 million cubic meters per year for irrigation. New requests for service can only be granted if users are willing to provide for storage of the water during the wet season. In 1994, Ann Austin and Lawrence Jaffe approached the city of Santa Rosa to lease land and use recycled water to

grow organic vegetables for direct human consumption. Their lease was approved in a public hearing by the Santa Rosa City Council. They must apply over 4,500 cubic meters of water per hectare annually, since the city's interest is wastewater disposal. As part of the lease, the city delivers pressurized reclaimed water directly to a sprinkler irrigation system that came with the land. In addition to the 2.3 hectares leased in 1994, the city just agreed to lease an additional 1.2 hectares that will also be served by recycled water. Left Field Farm's neighbors are dairies, a cattle farm, and a poultry plant that also receive tertiary-treated water from Laguna WTP. The poultry plant gives chicken manure to Left Field Farm. Left Field Farm also takes compost from Sonoma Compost, the company that composts Santa Rosa's green waste. Sonoma Compost is considering using tertiary-treated water to irrigate its compost. Left Field Farm prides itself that it "closes the loop" between city and farm by using reclaimed urban water and composted urban green waste to grow vegetables that it then sells directly back to the community. Left Field Farm grows 47 varieties of vegetables with recycled water. The local climate allows them to grow "spring" crops throughout the year, and the recycled water supply is sufficient to grow broccoli and cauliflower that nearby growers cannot produce. Eighty percent of Left Field Farm's sales are retail. Left Field Farms is registered with the state's Department of Food and Agriculture as an organic farm, in accordance with the California Organic Food Act of 1990. If Left Field Farms wants its produce to be certified organic (as opposed to simply being labeled "organic"), the farm must be inspected and approved by an independent certifying organization. The largest certifying body in the state, the California Certified Organic Farmers, has a policy denying certification to a farm where tertiary-treated water comes into contact with the edible

portion of the crop. Another certifying organization, Scientific Certification Systems (NutriClean), has accepted Left Field Farms' application for certification, and is checking that the water used and the crops grown on the farm meet all organic standards. When LFF's certification is complete, it will be the first certified organic farm to use tertiary-treated recycled water. Although Santa Rosa's primary motivation for supporting reuse projects has been a regulatory one to remain in compliance with its discharge permit ± the city has appreciated other benefits of reuse. Since the city of Santa Rosa's wastewater is treated to tertiary levels, its disposal and reuse options are quite broad. The city's use of recycled water was guided by the community's choice to surround the city with agricultural open space. Supplying low-cost water and leases to agricultural users also helps the city maintain a greenbelt that contributes to the cherished rural character of the area. If reclaimed water was not available, an alternative source of supply would have to be located, at substantial cost. Santa Rosa has been able to extend current uses of recycled water to create wetlands and support an organic farm. Reuse projects have resulted in a more efficient use of water. Not only is water used more than once, but using recycled water for agriculture lessens some of the demand for surface or groundwater. In Santa Rosa, farmers along the creek banks previously pumped irrigation water directly from the creek or from private wells. Providing these farmers with reclaimed water has improved the natural flow of the creek. For farmers inland from the creek, reclaimed water has allowed them to irrigate and farm year-round instead of being restricted to dryland-cropping. Recycled water also allows for the formation of waterfowl habitat (duck ponds and other wetlands) that otherwise would not be possible for lack of adequate supplies.⁵⁷

⁵⁷ Overview to water recycling in California: success stories by Arlene K. Wong and Peter H. Gleick

Recommendations:

To better develop a plan to manage water Kenosha County should:

1. Start a program telling citizens not to use the washer during heavy rainstorms.
2. Pave the western portions of our county with pavement that is porous to help replenish the underground aquifer.
3. Find ways for local government, educational institutions, and businesses to use rainwater to water their plants instead of using water from the tap. Rainwater can also be used for flushing toilets.
4. Make rain barrels available to Kenosha county citizens.
5. Utilize urban forestry as a way to manage storm water
6. Explore possibilities for government, educational institutions and businesses to recycle their **greywater**.⁵⁸

Pacific Institute for Studies in Development, Environment and Security

⁵⁸ Greywater-water that has been used to wash clothes, hands or dishes. Soap that is used to wash items must not contain phosphates if the greywater is going to be used on plants. Black water is water that contains human waste. Black water must be treated at the sewage treatment plant

Wind



Background:

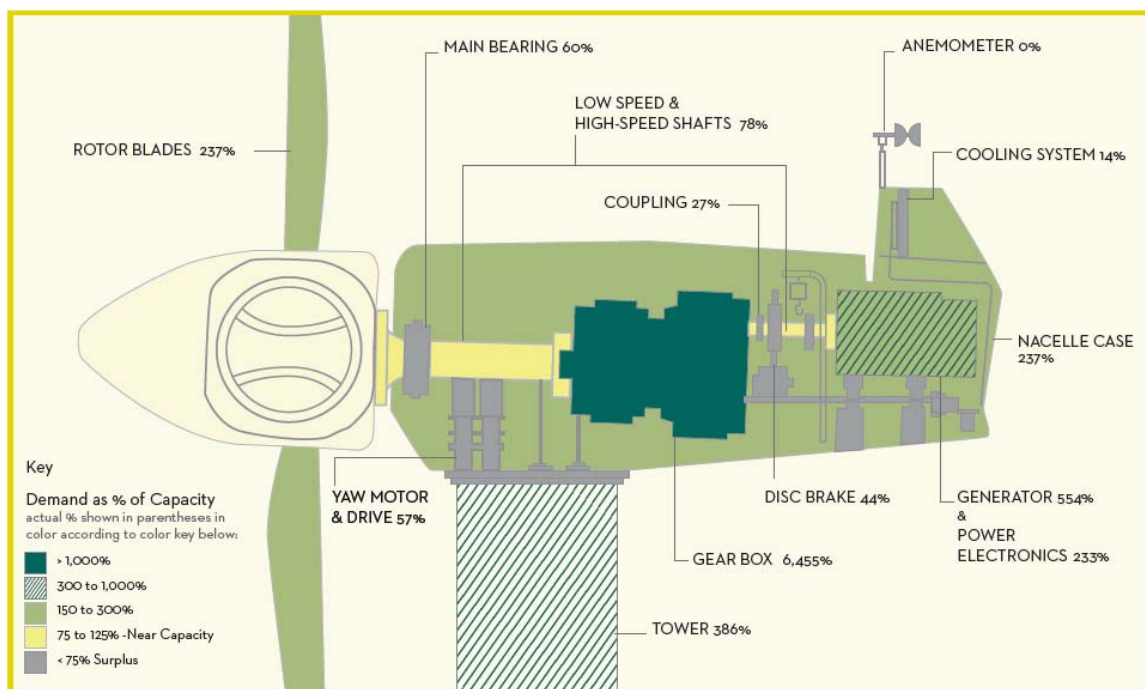
Much of America use to be agricultural, including Kenosha County. As farmland started being bought up by developers for houses and roads and we further congregated into concentrated pockets of people and the demand for energy rose exponentially. On the rural American farm windmills were able to provide power and pump water. Our present situation has us looking at the old idea of wind power with a new twist. Our need for jobs and energy that does not harm our physical health or our landscape can provide us with the answer to many of our economic and educational problems.

Solution(s):

One of the bases of our county has been manufacturing. For many years we made wagons, mattresses and autos. Where manufacturing in the United States has changed there is a growing need for certain items. The demand for wind turbines has blossomed over the last several years. (see figure 20.) From 2002-2007 electricity generated from wind in the United States grew 187%. In 2007 the United States consumed 32,143,244 thousand Kilowatt hours of wind energy.⁵⁹ Billionaire oilman, now wind entrepreneur, T. Boone Pickens has called the American Midwest the Middle East of wind because the central United states get large wind gusts that could provide power for much of the nation. The need for gears, casings, torque wrenches and other parts that support the existence of wind turbines can provide jobs in manufacturing, electronics engineering, and repairs. This need was recognized by the passage of county board resolution number 111. Passed in January of 2009.

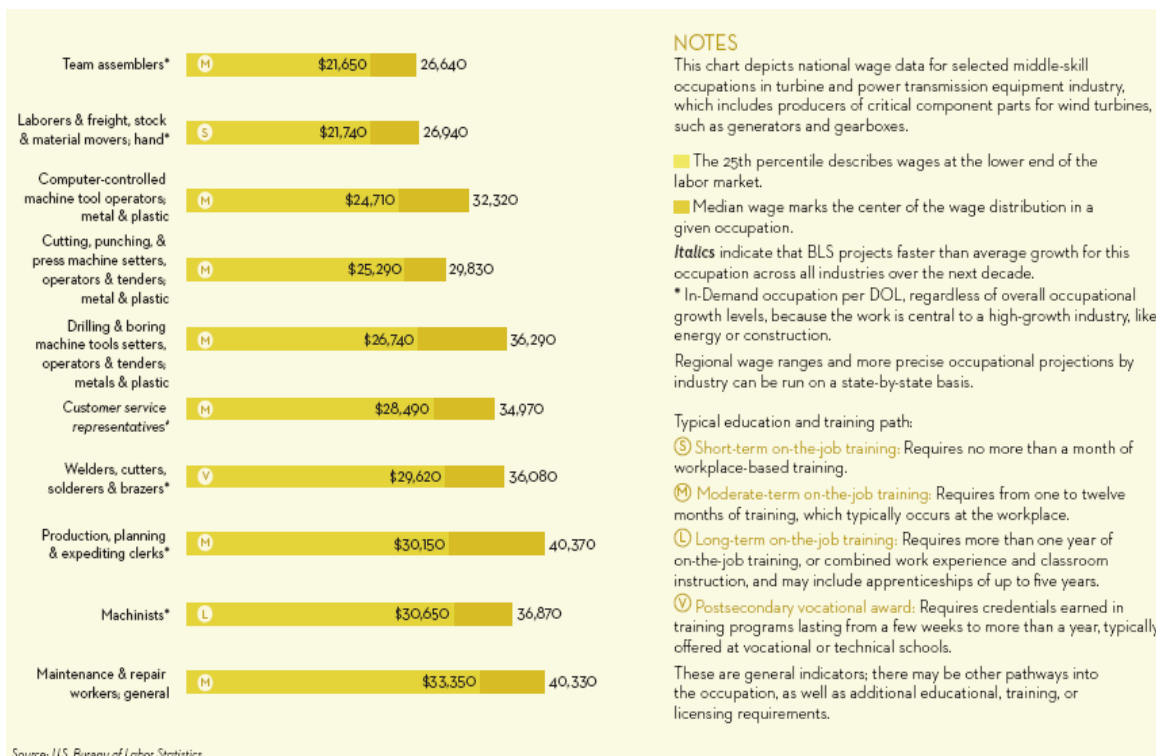
⁵⁹ Energy Information Administration Table 3. Electricity Net Generation From Renewable Energy by Energy Use Sector and Energy Source, 2003-2007

*Figure 20. Wind Turbine Components: Supply Chain Bottle Necks*⁶⁰



⁶⁰ Renewable Energy Policy Project Report and Greener Pathways

Figure 21. Future Outlook for Jobs in the Wind Energy Sector



Source: U.S. Bureau of Labor Statistics

Key Points

- Jobs in wind turbine production look a lot like traditional manufacturing jobs.
- While only customer service shows faster than average projected growth, the Department of Labor (DOL) identifies six of these jobs as "in-demand" because they are critical to high-growth industries.
- Total employment in U.S. manufacturing is declining. Public and private investment in renewables can help connect the industrial base to a more sustainable future, thereby preserving domestic manufacturing jobs.
- To stabilize carbon emission levels, the U.S. needs to add 185,000 MW of renewable energy in ten years. The Renewable Energy Policy Project calculates wind power's share to be roughly 125,000 MW, which would support close to 400,000 domestic manufacturing jobs.
- The American wind industry is growing at an astonishing 45% per year. State and federal policy should encourage its continued expansion, and ensure that its benefits are shared with the communities and workers that manufacture, install, and operate its wind turbines.

Case Study:

Morrow and Umatilla counties are located in northeast Oregon, bordered by the Columbia River to the north and the Blue Mountains to the south. There has been rapid expansion in the last decade with a number of new businesses locating in the area. These

Jobs to Watch

While the majority of well-paid wind industry jobs requiring less than a bachelor's degree will likely stem from component manufacturing, there will also be good jobs in installation and operations. Some of these, like Wind Technicians, are relatively new; we do not have good wage and employment data for such occupations because they are not yet tracked by the U.S. Bureau of Labor Statistics (BLS).

Local industry research is the most reliable source of specific information about emerging occupations. In Oregon's Columbia River Gorge, for example, a forward-thinking workforce partnership started training wind technicians after assessing demand in the regional labor market. Similarly, Minnesota West Community and Technical College found that employers wanted graduates of three related tracks:

Wind energy technician
 Wind energy mechanic
 Windsmith

include a Wal-Mart regional distribution center and a locomotive maintenance facility for Union Pacific. There has also been expansion in the government sector with a new correctional institution constructed and a chemical weapons incinerator at the Umatilla Army Depot. The Vansycle Ridge wind power development is the first of two wind power developments located in Umatilla County. It consists of 38 Vestas 660 kW turbines in an array of two strings. The site spans 2.5 miles, but the actual footprint of the turbine pads and access roads is 7.8 acres. The project's rating is 24.9 MW, and it produces 67.3 million kWh annually. Production started in November 1998. The project is owned by FPL Energy, which sells the power to Portland General Electric. Over one-third of the region's output comes from manufacturing, which produces output valued at nearly \$1.2 billion, and employs nearly 6,300. The leading industry in terms of employment is services, with more than 9,500 jobs, followed by trade, with nearly 8,600 jobs. Morrow and Umatilla counties have encountered an increase in total employment over recent years. Construction employment has also increased somewhat, as the recent population growth created a greater need for housing. In 1999, the per capita income for Morrow County was \$16,841, which ranked 33rd of Oregon's 36 counties. Residents of Umatilla County were somewhat better off, with a 1999 per capita income of \$22,024, ranking 18th in the state. Oregon categorizes most wind power structures, such as towers, pads, and turbines, as real property. Any equipment and supplies used in an office setting would be subject to personal property assessment. Each year the state assesses the value of all utilities including wind generation plants based on a list of the wind generation property and its depreciation rate filed by the utility. Further, under current tax laws, the taxable value of each property in the state is limited by a maximum assessed value, which

cannot increase by more than three percent per year. Permanent operating tax rate limits were set for most taxing districts in Oregon in 1997-1998. Some bonds and “local option taxes” or temporary increases in taxes may be allowed. Such increases must be approved by receiving a majority of votes with 50 percent plus one of the district’s registered voters voting, or a “double majority.” The tax rates for the bonds and local option taxes are determined by dividing the total “levy” or tax burden resulting from the bonds and options by the total assessed value of property within the applicable taxing district. The final tax rates (determined by a combination of the set tax rate and the bond and local option tax rates) are then applied to the total taxable value of each property in the county. However, a 1997-1998 law limits the total tax that may be collected for each property tax account. The law limits the taxes collected for education to 0.5 percent on the lowest selling value or “real market value” of the property, and general government taxes are limited to one percent of the real market value. If taxes in either category exceed the limit for that property, the taxes are reduced or “compressed” until the limit is reached. Local option taxes are “compressed” first. If the local option tax is compressed to zero, and the limit still has not been reached, the other taxes in the category are proportionally reduced. The sum of the resulting amounts is the tax burden of the owner of the property. Pacific Power and Light (PacifiCorp) and Umatilla Electric Cooperative provide electricity service in western Umatilla County. Umatilla Electric Cooperative serves mainly customers located outside of urban areas throughout Umatilla County and parts of Morrow County. As the permanent impact of employment from this development is minimal, the community services already in place are adequate to meet the needs arising from the construction and operations and maintenance of the Vansycle Wind Power

Project. Local sources reported that two new jobs were added to the local economy to support the operation and maintenance of the project. The Stateline wind power project has recently been completed in the area, and it is likely that more operation and maintenance work force will be located in the local area to service the two projects. It is estimated that over \$105 thousand in personal income in the economies of Morrow and Umatilla counties were supported by the construction phase of the project. Major sectors affected were the manufacturing, trade, and services sectors. The taxing code district in which the project is located in Umatilla County was subject to a tax rate of roughly 1.1 percent in fiscal years 1999-2000, 2000-2001, and 2001-2002. Total taxes were \$243,580 in 1999, \$241,580 in 2000, and \$229,680 in 2001. Taxes paid on the project were about 0.6 percent of the total taxes paid in the county in 1999 and 2000. Schools get slightly over half of the taxes collected. The county and the townships each receive a little less than 20 percent of the taxes. The fire protection district receives roughly four percent and libraries an additional two percent. The remaining taxes go to the Cemetery District (0.5 percent), the Water Control District (0.149 percent), Parks and Recreation (0.12 percent), Vector Control (0.62 percent), the Port of Umatilla, (0.95 percent), the Urban Renewal District (0.59 percent), and “Miscellaneous” (1.14 percent). Assuming an average royalty payment to landowners of \$2,000 per turbine, the estimated average of wind projects in the Pacific Northwest, with the 38 turbines in the Vansycle Ridge wind project, the total gross revenue to landowners is approximately \$76,000. FPL, the owners of the Vansycle project, states that the wind site crosses 2.5 miles, and nine acres of farm and range land are lost to production, including roadways. The annual opportunity cost (lost potential revenues) to the landowner associated with those nine acres no longer in production is

assumed to be \$356, based on an opportunity cost of \$61 per acre for the six acres of wheat and no net loss for the three acres of cattle rangeland. This results in total annual net (after tax) revenue to landowners of \$64,300.⁶¹

Recommendations:

Kenosha County can make use of the wind market by:

1. Create green industrial zones to try and encourage companies to take advantage of locating in Kenosha County.
2. Look at nearby regions that wish to purchase wind turbines.
3. Utilize Snap On tools and Gateway Technical College as recruitment tool in bringing the wind industry to Kenosha.
4. Work with trade associations like the AWEA (American Wind Energy Association), the Kenosha Area business Alliance, and the Kenosha Chamber of Commerce to create a pipeline in bringing business to Kenosha.

⁶¹ Assessing the Economic Development Impacts of Wind Power by Northwest Economic Associates 2/12/2003 pages 22-32

Government & Society



If sustainable living is going to happen in Kenosha County, there are some shifts in thought that need to happen. A number of things require our attention for reconsideration. First, we must better understand the changes that have taken place in how labor and the economy are structured. Second, we must better understand the role of government. Third, we will have to rethink and reexamine our arguments regarding the taxpayer. Fourth, we need openness, accountability and transparency. Fifth, we must rethink community and be inclusive of all people. Sixth, we will have to better understand the powers and limitations of institutions. By doing these things we are undertaking the task of thinking critically about systems. This will help us find new models and new criteria for governing so that we make better decisions by increasing participation.

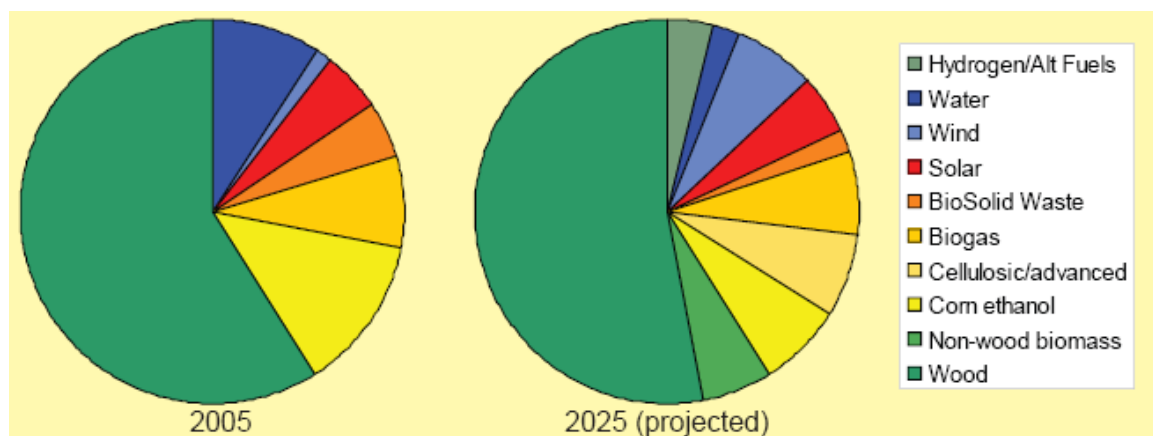
It has been suggested that we are living in a post industrial society. Post industrial does not mean past industry. It means past the industrial age. Post industrial is a rearrangement of our society. In the industrial age the world is technical and rational. The goods produced are a game against fabricated nature. Energy is the basis for productivity- the mass output of standardized goods. Energy and machines form the basis of the work. Skills are broken down into smaller parts. Things are timed, people, materials, coordination and brought together for the exact moment of assembly. Bureaucracy and hierarchy keep order. The post-industrial society has a different societal arrangement than the industrial society. A post industrial society focuses on human services, professional, and technical services. It is a game between persons based off of highly specialized knowledge.⁶² Knowledge is the ability to use information to create, innovate, design and change products to those that have a much higher value. Knowledge is not the property of

⁶² Daniel Bell the Cultural Contradictions of Capitalism

companies. Workers own the knowledge, use the knowledge and are compensated for it.⁶³ The focus is on community where coordination and reciprocity are needed to keep things in balance.

There are those who ask why should government do anything? First off, sustainable living is not the responsibility of a single entity. Governments have regulatory authority but sustainable living cannot happen if levels of government act independently from another. Like a combination lock with many tumblers, each level of government, federal, state, county, city, village, and town have varying degrees and jurisdictions of regulatory authority. Therefore each level of government must act to open up channels for new possibilities. There are several federal departments/agencies that can aid us in our endeavor. The governor of Wisconsin, Jim Doyle, has sated a goal of 25% of Wisconsin's energy coming from renewable sources by 2025. (see figure 22.)

Figure 22. Snapshot of Wisconsin's Renewable Energy Portfolio⁶⁴



⁶³ Kenosha County Economic Summit 2007 "Solutions for the Future" remark by Terry Ludeman
Wisconsin Department of Workforce Development, Office of Economic Advisors

⁶⁴ Megatrends: Energy University of Wisconsin-Stevens Point College of Natural Resources, University of Wisconsin-Extension

Another thing to reconsider are our conversations regarding the taxpayer. Many conversations in our local political culture have been centered on protecting the taxpayer. Protecting the taxpayer is a two part question. Much of the conversation is asking about the quantity of money being spent. Occasionally the second half of the question about the quality of what the money is being spent on surfaces. Yes we should protect the taxpayer when it comes to the question of quantity (how much a person pays). We should also protect the taxpayer when it comes to the idea of quality and give the question of quality just as much airtime as we give the question of quantity. However, we should also find ways of growing the taxpayer base both with an influx of new citizens and pulling people from the underclass and lower class of our society. This is where the question of quality and quantity become excellent partners. In sustainable living the effort to increase the quality of life often creates situations where the quantity of the money being spent can be minimized. Sustainable living does this by encouraging us to take different actions that give us different outcomes. By choosing a different action we create new jobs, new opportunities for people to get trained and educated, we create new economic sectors allowing more people to come out of poverty. By using the carefully coordinated tools and efforts of government, education, and business working together we can create paths that lift people out of distressed economic circumstances.

Openness, accountability, and inclusion must also be part of our normal mode of operations. Technology can help with the issues of openness and accountability. Communicating to people through a variety of methods, internet, newspaper/newsletter, phone call, TV, can be an effective means of hearing peoples concerns and responding to

them. Virtually everything we do in government from concept to action should and can be made available to the public through the internet.

Thinking of ourselves in terms of communities can help with us being inclusive. A single person is both an individual and simultaneously a member of many communities. With thinking of ourselves as members of communities we have to be sure that we acknowledge the competing or mutual interests of people from other communities. We must remember that community never preexists it must be created. The process of creating community is one where we not only recognize who we are, but also who we want to become. By embedding this notion of community in our institutions, we are able to have a repeat engagement with one another allowing us to mobilize our collective power more effectively around issues and circumstances.

Institutions are comprised of groups of people. Groups of people are comprised of individuals. Thoughts and beliefs drive the actions of individuals and groups. When a person or group of persons thought pattern changes, different actions will occur yielding different results. A single person or member of an institution has the power to fundamentally change the institution. Likewise groups of people or members of an institution have the power to change the institution if they make a commitment to something and stick to it. If an institution regards something as important, the institution will find a way to get that thing done.

Finally it will be the reconsideration of these things and understanding systems that will provide new models and new criteria for governance. Sustainable Living must be thought of in terms of a whole system. Like a mosaic, if we stare at only one tile we will never see the whole picture or understand its complexity. The role that government

has concerning regulatory authority is an important one. Schools, technical colleges, colleges and universities have the educational resources and technical know how of the various components of sustainable living. Businesses have the ability to define the parameters of what is affordable, provide livable wages and provide resources not attainable by regular citizens. Non-for-profit organizations and citizens provide valuable information about the impact certain decisions have or will have. If we approach our problem solving from such an integrated framework we produce more innovative, efficient, engaging solutions. Perhaps, taking a **native world view**⁶⁵ or better understanding **social ecology**⁶⁶ would be a good way to start.

⁶⁵ Native World View- Native American Indians view nature as an extended family or society of living ensouled beings. Western (American) culture views nature as material mechanical and devoid of spirit. The Native American view provides foundations for ethical restraint towards mistreating non-human nature. The Western (American) view invites unrestrained exploitation of non-human nature.

⁶⁶ Social Ecology- The study of human and natural ecosystems and the social relations that affect the relation of society as a whole with nature. It is a holistic world view of appropriate technology, reconstruction of damaged ecosystems, and creative human enterprise. It combines considerations of equity and social justice with energy efficiency and appropriate technology. Social Ecology goes beyond environmentalism insisting that the issue at hand for society is not simply protecting nature but rather creating an ecological society in harmony with nature. The primary social unit is the eco community, a human scale, sustainable settlement based on ecological balance, community self reliance, and democracy. Social ecology envisions a confederation of community assemblies working together to foster meaning full communication, cooperation, and public service in the everyday practices of civic life and a municipal concept of citizenship which cuts across class and economic barriers to address dangers such as economic breakdown and nuclear war. Cooperation and coordination within and between communities is considered to be able to transcend the destructive trends of centralized power. The city can function as an ecological and ethical arena for vibrant political culture and a highly committed citizenry.

Figure 23. Process of Institutional Behavior Change Model



Figure 24. Eco Community Planning Model

1. Monitor the input and output of community resources.
2. Involve the community in the decision making.
3. Employ multiple housing arrangements (multifamily and cooperative housing, cooperative housing shares heat/water/power)
4. Design for pedestrian use.
5. Incorporate natural areas into the community.
6. Use experimental projects to induce gradual change of opinion.
7. Change the role of the community designer
8. Plan in stages and for the long term
9. Share information
10. Maintain a balance, an integration of focus and continuity

Figure 22. Urban Ecology Planning Model

- a. Revise land use priorities to create compact diverse, green, safe, pleasant, and vital mixed use communities near transit nodes and other transportation facilities.
- b. Revise transit priorities to favor foot, bicycle, cart and transit over autos and emphasize “access by proximity”.
- c. Restore damaged urban environments: creeks, shorelines, ridges, and wetlands
- d. Create decent affordable safe convenient, racially and economically mixed housing.
- e. Nurture social justice and create improved opportunities for women, people of color, and the disabled.
- f. Support local agriculture, urban greening projects, and community gardens.
- g. Promote recycling, innovative appropriate technology, and resource conservation while reducing pollution and hazardous wastes.
- h. Work with businesses and non profits to support ecologically sound economic activity while discouraging pollution, waste, and the usage/production of hazardous materials.
- i. Promote voluntary simplicity and discourage excessive consumption of material goods.
- j. Increase awareness of the local environment and bio region through activist and educational projects that increase public awareness of ecological sustainability issues.

Implementation, Monitoring, & Analysis

Implementing sustainable living is a fairly simple procedure. I have proposed forming a committee of 13 people. The committee would be composed in the following manner: 3 Kenosha County Board Supervisors; 3 alderman from the City of Kenosha; 1 seat representing Gateway Technical College; 1 seat representing Carthage College; 1 seat representing UW-Parkside; 1 seat representing Kenosha Unified School District; a seat for 1 member of the large business community (employment of 500 + people); 1 members of the midsize business community (employment of 100-500 people); 2 members of the small business community (employment of 6-100 people); and 3 seats for general citizens. One city or county staff person will need to be chosen to take the minutes and get information out to those on the committee and get things posted on the website. Additionally, meeting dates and locations will have to be chosen to accommodate the size of the committee. This is an inclusive decision making process. This type of organization brings all of the stakeholders in this together at the table at one time.

Notification about this committee and its members will be presented in the form of press releases, memos and posted on the internet. A series of sustainable/"green" town halls may want to be held to gain greater citizen input as to what citizens want to see from the committee. The committee should have the power to suggest, make, review, and examine policies and procedures as they pertain to sustainable living. All recommendations, reviews, reports, and policy changes made by the committee shall be forwarded to the proper governmental authority for appropriate action. Information requests and requests to appear before the committee should be regarded with the same

level of seriousness as other committees. Work if necessary can be divided into subcommittees. Possible subcommittees are: education and awareness; business and small business development; farming co-operatives and community gardens; building codes and design; waste, water, composting and recycling; and transportation.

In order to monitor the progress regarding sustainable living an overall mission statement shall be prepared and adopted by the committee with the approval of the city council and the county board. The committee will than move forward in preparing the goals. Local units of government, the media, educational institutions, the Kenosha Area Business Alliance and the Kenosha Chamber of Commerce will be notified of the mission and goals of the sustainable living committee. The mission statement and goals will also be posted on the website, Facebook and Twitter. Specific objectives will be laid down to give the committee guidance in accomplishing its goals. Reports from the committee shall be made on a periodic basis in the form of printed documents, electronic documents, and personal testimony. Reports shall also be made available for the general public.

Analysis of the programs and policies as they pertain to sustainable living can occur when a problem has arisen or after some time has passed and the committee wishes to clarify why a certain goal has not yet been achieved. A report will be developed explaining the issue its solutions and the reason for the delay in meeting the goal.

Figure 25. Barriers to Policy Implementation

1. Perceptual/behavioral barriers
 - a. Belief that ability to affect consumptive behavior is limited because it is entrenched in cultural values (Most often people's behavior is only partly due to their values and is heavily influenced by contextual setting and tradition. A world that historically has been designed for unsustainable living leaves little opportunity of individuals to make alternative choices.

When such choices are possible, action which supports sustainability may still not be adopted if it is perceived that the personal sacrifices are greater than the benefits both to the community at large and to the individual. If one feels that one's own sacrifice will be taken advantage of by someone else thereby nullifying any possible benefits, motivation to act diminishes. In a society where cultural norms inherited from past decades of sanctified consumption continue to define the aspirations of many citizens the perception that individual actions will not produce change seems validated. This becomes the rationale for not supporting sustainability.)

- b. Only senior levels of government can implement change municipal government can only act symbolically
- c. Political attempts to bring about change are secondary in impact to those of technological improvement
- d. Institutional/structural barriers-the government entity, bureaucratic structure, have competing issues and a lack of cooperation, supporting the status quo(fear of losing constituents, power, support; weak links in governments, weak links with constituents, segregated civic departments, government agencies with incompatible agendas and conflicting policies
- e. Economic/financial barriers-economic realities influence what is and what is not feasible (inadequate funds, existing funds pre-allocated to on going programs, motives for financial gain, failure to guarantee results, marginal pricing, economic valuation, lack of prioritizing mechanism, unwillingness to pay more taxes, and fear of disadvantaging the poor)
- f. Knowledge and Action-understand how individuals form perception about which needs are to be met and what priority they should take becomes crucial to understanding larger social patterns. Our perceptions determine our consent to operate within existing political and institutional structures that appear to meet our needs and they condition out acceptance of the economic constructs which heavily influence the operations of corporations and public institutions. However many cultural values, government regulations and financial accounting systems ignore the importance of taking responsibility for the social and environmental consequences of our activities. As a result, they contribute to a society structured to encourage actions that do not support sustainability and a population whose behavior patterns are not conducive to its long term survival.

Glossary

Appropriate technology- modern knowledge and experience compatible with the laws of ecology, gentle in use of scarce resources, designed to serve people. Criteria include 1) low resource usage coupled with extensive recycling 2) preference for renewable over non-renewable resources 3) emphasis on environmental harmony 4) emphasis on small scale industries 5) high degree of social cohesion and a sense of community

Community economic development- Community Economic Development- is action taken locally by a community to provide economic opportunities and improve social conditions in a sustainable way. Often CED initiatives aim to improve the lot of those who are disadvantaged. An aspect of “localizing economics,” CED is a community-centred process that blends social and economic development to foster the economic, social, ecological and cultural well-being of communities. It may form part of an ESCED initiative. Community economic development is an alternative to conventional economic development. Its central tenet is that: “problems facing communities—unemployment, poverty, job loss, environmental degradation and loss of community control—need to be addressed in a holistic and participatory way.” Community Economic Development is often involved in a process of building Social Enterprises. Sometimes called the Third Sector, a community enterprise is a partnership between government agencies, small to medium enterprises, large national or transnational corporations and the not-for-profit sector, and aims for social, economic and/or environmental outcomes that none of these agencies could achieve for and by themselves.

Economic adequacy- having a sufficient level of economic activity that ensures the basic needs for all are met.

Economically secure- a variety of businesses, industries and institutions which are environmentally sound financially viable, provide training, education, and other forms of assistance to adjust future needs, provide jobs and spend money within a community and enable employees to have a voice in decisions which affect them. A more sustainable community also is one in which citizens money remains in the community.

Energy/water conservation- lessens the demand side by turning things off like faucets and lights.

Energy/water efficiency- lessens the supply side of energy/water by using less power/water to perform the same function.

Food insecure- a condition in which people lack basic food intake to provide them with the energy and nutrients for fully productive lives. A 2006 survey of almost 4,000 households with elementary-age children in the Kenosha Unified School District indicated that 20% of Kenosha area families (1 out of 5) are food insecure, compared with 12% of Wisconsin households statewide and 11% nationally. This means that out of the roughly 7,700 KUSD households with young children, 1,540 families struggle to put food on the table at some time.

Green collar job- 2847 the Green Jobs Act of 2007 defines a Green Job as: the energy-efficient building, construction, and retrofits industries; the renewable electric power industry; the energy efficient and advanced drive train vehicle industry; the biofuels industry; the deconstruction and materials use industries; the energy efficiency assessment industry serving the residential, commercial, or industrial sectors; and

manufacturers that produce sustainable products using environmentally sustainable processes and materials.

Native world view- Native American Indians view nature as an extended family or society of living ensouled beings. Western (American) culture views nature as material mechanical and devoid of spirit. The Native American view provides foundations for ethical restraint towards mistreating non-human nature. The Western (American) view invites unrestrained exploitation of non-human nature.

Nutritional density- Those foods that provide substantial amounts of vitamins and minerals and relatively few calories. For example, eggs, meat, cheese, fruit and vegetables are considered nutrient-dense food, while products containing added sugars, processed cereals, and alcohol are considered nutrient-poor food. Nutrient density can also be understood as the ratio of the nutrient composition of a given food to the nutrient requirements of the human body. Therefore, a nutrient-dense food is the food that delivers a complete nutritional package.

Social ecology- The study of human and natural ecosystems and the social relations that affect the relation of society as a whole with nature. It is a holistic world view of appropriate technology, reconstruction of damaged ecosystems, and creative human enterprise. It combines considerations of equity and social justice with energy efficiency and appropriate technology. Social Ecology goes beyond environmentalism insisting that the issue at hand for society is not simply protecting nature but rather creating an ecological society in harmony with nature. The primary social unit is the eco community, a human scale, sustainable settlement based on ecological balance, community self reliance, and democracy. Social ecology envisions a confederation of

community assemblies working together to foster meaning full communication, cooperation, and public service in the everyday practices of civic life and a municipal concept of citizenship which cuts across class and economic barriers to address dangers such as economic breakdown and nuclear war. Cooperation and coordination within and between communities is considered to be able to transcend the destructive trends of centralized power. The city can function as an ecological and ethical arena for vibrant political culture and a highly committed citizenry.

Sustainable agriculture- modern knowledge and experience compatible with the laws of ecology, gentle in use of scarce resources, designed to serve people. Criteria include 1) low resource usage coupled with extensive recycling 2) preference for renewable over non-renewable resources 3) emphasis on environmental harmony 4) emphasis on small scale industries 5) high degree of social cohesion and a sense of community.

Sustainable living-meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Underemployment- the condition in which people in a labor force are employed at less than full-time or regular jobs or at jobs inadequate with respect to their training or economic needs.

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Appendix

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Eco-City Dimensions: Healthy communities, Healthy planet by Mark Roseland

Toward Sustainable communities: a handbook for citizens and their government by Mark Roseland and Stacy Mitchell

Street Reclaiming by David Engwicht

Suburban Nation the Rise and Fall of the American Dream by Andres Duany, Elizabeth Plater-Zyberk, and Jeff Speck

Democracy in Suburbia by J. Eric Oliver

Urban Sprawl Sprawl: A Comprehensive Reference guide by David C. Soule

Hot Flat and Crowded by Thomas Friedman

In Defense of Food by Michael Pollan

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The Green Collar Economy by Van Jones

Supercapitalism by Robert B. Reich

Strategies for the Green Economy: Opportunities and Challenges in the New World of Business by Joel Makower

Lives Per Gallon: The True Cost of Our Oil Addiction by Terry Tamminen

Economics and the Environment by Eban S. Goodstein

Renewable Energy Handbook: a Guide to Rural Energy Independence, Off-Grid and Sustainable Living by William H. Kemp

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Biofuels

<http://www.internationalbiofuels.org/>

<http://www.pewclimate.org/biofuels-transportation>

Housing and Construction

<http://wgba.org/>
<http://www.greenglobes.com/>
<http://www.greenerbuildings.com>
<http://www.usgbc.org/>
<http://www.regreenprogram.org/>
<http://www2.uwsuper.edu/sustainability/>

Local Food Systems

<http://www.usda.gov/wps/portal/usdahome>
<http://www.datcp.state.wi.us/>
<http://www.growingpower.org/>
<http://www.michaelfieldsagainst.org/>
<http://www.mosesorganic.org/treefruit/intro.htm>
<http://www.farmtoschool.org/>
<http://www.reapfoodgroup.org/farmtoschool>
<http://www.fallenfruit.org/>
<http://myapa.planning.org/divisions/pdf/foodwhitepaper.pdf>
<http://www.ifmwi.org/>
http://www.valuechains.org/rfswg/RFSWG_guide_081406.pdf

Mass Transportation

<http://www.completestreets.org/>
<http://www.dot.state.wi.us/localgov/aid/saferoutes.htm>
<http://www.fhwa.dot.gov/hep/climatechange/newsletter/index.htm>
<http://www.pewclimate.org/node/1064>
<http://www.1kfriends.org/Transportation/Transportation.htm>
<http://www.dot.wisconsin.gov/projects/state/docs/bike-facility.pdf>

Solar and Wind

<http://www.awea.org/>
<http://www.seia.org/>
<http://www.alliantenergy.com/>
<http://www.meuw.org/>
<http://www.wisconsinpublicservice.com/>
<http://www.oriones.com/home.html>

Waste

<http://www.recyclebank.com/>
<http://www.wastecapwi.org>
<http://www.recyclecurbside.org/>
<http://cdm267601.cdmhost.com/u/?p267601coll4,665>

Water

<http://v3.mmsd.com/>

Purchasing

<http://www.purchasing.upenn.edu/social/>

<http://www.mmd.admin.state.mn.us/envir.htm>

<http://www.deq.mt.gov/Recycle/3Rs/3RPurchasing.asp>

http://www.responsiblepurchasing.org/purchasing_guides/all/

<http://gpnews.com/Issue/Article/78795/Issue>

<http://www.metrokc.gov/procure/green/>

<http://www.ofee.gov/gp/gp.asp>

Business and Economics

<http://www.ceres.org/BICEP>

Film

The Garden by Scott Hamilton Kennedy

Gimmie Green by Issac Brown and Eric Flagg

Cape Wind by Robbie Gemmel

Fuel by Josh Tickell

Food Inc. by Robert Kenner

Our Daily Bread by Nikolaus Geyrhalter

Unlimited by One Light Camera Productions

Insulate! By Warren Wilson College