City of Elgin Sustainability Action Plan

Developed and written by Elgin Citizens participating in Elgin's sustainability working groups

Version 2.1, August 2011

Acknowledgements

The city of Elgin is proud to join the many communities around the country and world actively working to reduce their environmental impact, serve as responsible environmental stewards and instill an environmental ethic in today's society.

Special acknowledgement and thanks to:

Mayor and Members of the City Council
Sustainability Advisory Team
ICLEI Local Governments for Sustainability
AECOM
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Citizens of Elgin

Table of Contents

i.....Acknowledgements
ii.....Table of Contents

Section 1 Executive Summary

iv.....Executive Summary

Section 2 Introduction

v.....Introduction to Working Groups
vi.....What is Sustainability?
vii.....Background

Section 3 Alternative Energy

1.....Goal I Encourage energy conservation by city of Elgin Residents and Businesses.
3.....Goal II Develop clean and renewable energy alternatives unique to Elgin.
6.....Goal III Pursue alternatives and renewable energy systems to reduce Elgin's urban peak energy demand.
9.....Goal IV Encourage and increase the use of renewable energy by the city of Elgin and its residents and businesses.
11.....Additional Resources/Best Practices

Section 4 Economic Development

13.....Goal I Increase the Wealth of Elgin's Citizens and Businesses.
14.....Goal II Leverage available infrastructure programs and tax incentives to encourage businesses to locate and remain in Elgin.
16.....Goal III Encourage a strong educational system and workforce training to provide skilled labor for existing and prospective businesses.
17.....Goal IV Identify the "Sustainability Industry" as a burgeoning market and encourage a "business cluster" to further attract businesses to Elgin..
19.....Additional Resources/Best Practices

Section 5 Green Building Technology and Energy Conservation

20.....Goal I Educate all groups in the principles and practices of sustainable and energy-efficient design.
22.....Goal II Develop and implement sustainable building polices
25.....Goal III Developing Financial Programs for Sustainable Building and Energy Efficiency
27.....Goal IV Establish sustainability programs for future development of new and existing buildings
30.....Additional Resources/Best Practices

Section 6 Green Infrastructure

32.....Goal I Achieve integrity of open space along the regional waterways
34.....Goal II Reduce surface runoff
37.....Goal III To protect, preserve, and enhance natural resources, parks, and other public areas.
39.....Additional Resources/Best Practices

Table of Contents (continued)

Section 7 Healthy Living and Community Education

40.....Goal I Educate the community on the value of sustainable practices and healthy living.

Section 8 Recycling and Waste Management

45.....Goal I Increase recycling and waste reduction in the business sector of the community.
47.....Goal II Encourage increased recycling, composting, source reduction and waste reduction in residential properties.
50.....Goal III Encourage the city of Elgin and its residents to purchase and use products made from recycled or reclaimed materials or environmentally friendly materials.
51.....Additional Resources/Best Practices

Section 9 Transportation and Mobility

52.....Goal I Reduce Energy Consumption and Pollution from Transportation Operations
53.....Goal II Reduce Energy Consumption and Pollution related to Transportation Infrastructure
54.....Goal III Promote Alternative Transportation Options
55.....Additional Resources/Best Practices

Section 10 Urban Design

58.....Goal I Foster a Livable Community
60.....Goal II Foster Sustainable Transportation
61.....Goal III Responsible Land Use
64.....Additional Resources/Best Practices

Section 11 Water Resources

67.....Goal I Encourage Water Conservation
70.....Goal II Educate residents about pollutants that affect Elgin's water supply.
72.....Goal III Improve water quality throughout Elgin's waterways
75.....Additional Resources/Best Practices

Section 12 Appendices

76.....Appendix A: Elgin Environmental Research
85.....Appendix B: Existing Environmental Initiatives
94.....Appendix C: Sustainability Briefs
95.....Permeable Pavement, *Water Resources Group*
97.....Organic Food Composting, *Recycling and Waste Management Group*
99.....Plantings*, Green Infrastructure Group*
102.....Context Sensitive Solutions, *Urban Design Group*
103.....Recommended Sustainability Indicators, *Urban Design Group*
106.....Complete Streets, *Urban Design Group*

Executive Summary

The Phase 1 Sustainable City Master Plan, begun in 2009 and spring 2010, provided the city of Elgin with a sustainable vision, citing opportunities for sustainable practices and serving as a guidepost for developing a sustainable philosophy. It identified areas which could address sustainability in terms of energy, water, construction and building technology, economic viability, a respect for the environment, transportation, and sustainable living practices. A critical component of this Phase 1 process was the creation of the nine citizen-based working groups consisting of over one hundred citizens committed to learning about sustainable practices - but stopping short of defining specific tasks.

With this as a starting point, and under the direction and leadership of the City Council, the city of Elgin opted to take the Sustainability Master Plan one step further – to develop the Phase 2 Sustainability Action Plan. The core value of this process was in citizen involvement and participation. While Phase 1 addressed theoretical opportunities and a sustainable vision, Phase 2 has been action-oriented, with the citizen groups establishing sustainability goals for Elgin's unique character and recommending paths to achieve these goals.

Each of the nine citizen working groups researched sustainable practices, and in this document have made specific recommendations to the city of Elgin for implementation of sustainable strategies appropriate to Elgin's demographics, landscape, economy, geographical proximity to the adjacent urban corridor, implications of the Fox River, the existing transportation hub and radiating arteries, as well as the feasibility of implementing sustainable and healthy living strategies. The working groups addressed the following nine areas of sustainability:

- Alternative Energy
- Green Building Technology
- Healthy Living & Community Education
- Transportation & Mobility
- Water Resources
- Economic Development
- Green Infrastructure
- Recycling & Waste Management
- Urban Design

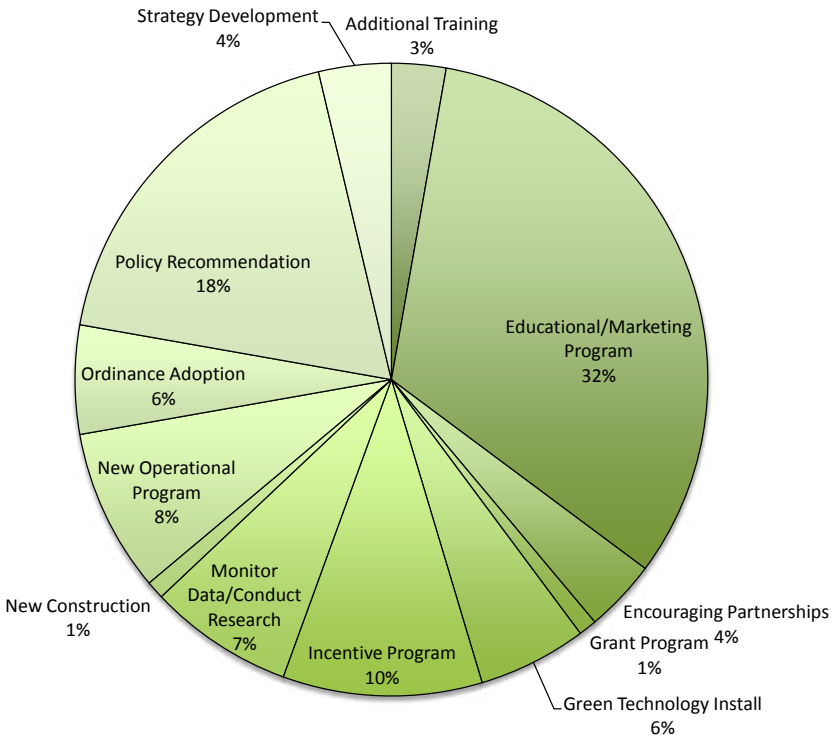
However, it is important to understand that the volunteer groups are not only comprised of professionals in the environmental design field. They are citizens with a passion for improving Elgin's environmental footprint and having a sustainability conscience committed to making reasonable and viable recommendations. These recommendations are not all-inclusive or represent all sustainability solutions. They merely reflect the current vision of the working groups, identifying a starting point for improving Elgin's sustainability effort. It is anticipated that the Sustainability Action Plan will be dynamic and ever-changing as recommendations become implemented and as Elgin's collective sustainability vision evolves.

The Elgin Sustainability Action Plan (ESAP), while not all encompassing, is certainly ambitious. Recommended strategies range from low cost, short term, actionable steps to longer term policy and operational recommendations. It is important to remember its overall mission while reading the document:

To improve the quality of life for Elgin citizens and improve its local environment, while making Elgin a more viable and vibrant place to live.

This plan offers strategies to manage Elgin's environmental assets, reduce its environmental impact, promote citizen engagement and educate the community-at-large through a variety of ways. The following page depicts the plan's one hundred and eight and breaks them down into broad categories defined by the appropriate working group.

Working Groups



Beginning in July of 2010, largely due to working group members' desire to create and implement sustainable strategies, working groups were tasked with developing the following action plan. In essence, Elgin's citizens are its consultants.

Alternative Energy
Evaluating opportunities to supplement the city of Elgin's traditional electrical supply sources with renewable power.

Economic Development
Considering economic and demographic trends, forecasted employment and opportunities for job growth; and projected residential, retail, and office development to support a more vibrant city.

Green Building Technology
Exploring green building technologies, discussing opportunities for reducing energy consumption and replacing carbon-based energy with renewable sources – in particular, energy efficiency opportunities within existing buildings.

Green Infrastructure
Discussing opportunities for recreation while protecting and restoring sensitive habitats, expanding native planting and wildlife corridors, as well as improving the overall livability of the city of Elgin.

Healthy Living and Community Education
Focusing on collaborative efforts to reach all interested stakeholders and fostering excitement and knowledge about sustainable efforts, programs and healthy lifestyles.

Recycling and Waste Management
Exploring and educating the community-at-large about a variety of alternative recycling and reuse options, proper household hazardous waste disposal, and finding new uses for recycled items - ultimately reducing the amount of trash being sent to a landfill.

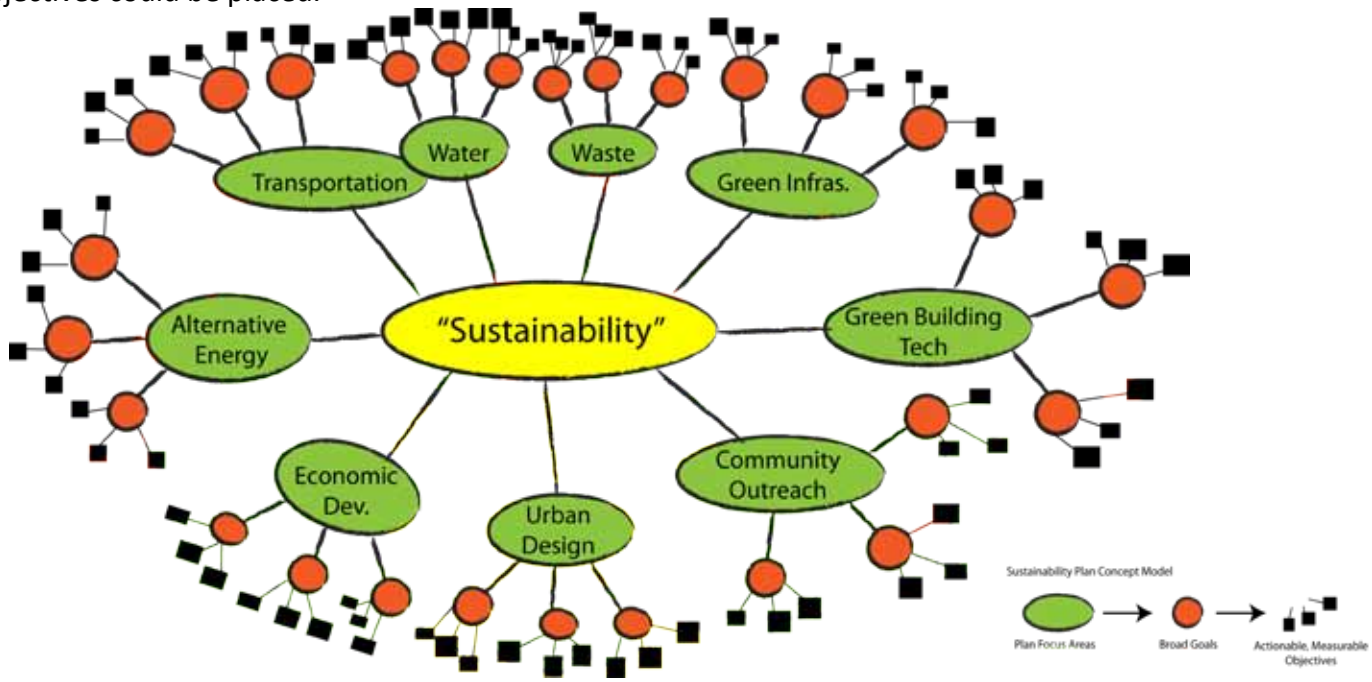
Transportation and Mobility
Focusing on sustainable transportation networks and resources; amenities for pedestrians and bicyclists; a strong connection between land use, transit, and non-transit modes of transportation; low-emission vehicles; and car sharing.

Urban Design
Considering development patterns over time in Elgin and elsewhere, the interconnected nature of planning and development, and opportunities to encourage future development in Elgin.

Water Resources
Studying, educating and recommending to stakeholders a range of sustainable strategies for the management of potable water, stormwater, and wastewater.

Methodology

The Elgin SAP was crafted using a framework consisting of first defining the term "sustainability" for Elgin, then through the lens of each working group, developing broad goals under which more actionable, task oriented objectives could be placed.



What is Sustainability?

Sustainability can be defined any number of ways. Some definitions are extremely long and detailed while other are more succinct but vague. When developing its Sustainability Action Plan, the city of Elgin desired a definition that was both specific, yet broad enough to encapsulate the scope of the plan.

During the working group meeting on July 13th, 2010 each group developed their own definition of sustainability. These definitions were then combined and synthesized into a unique, Elgin specific, definition of sustainability.

Sustainability for Elgin, Illinois is a movement that complements community values to foster a cooperative spirit and reward efficient use of all resources locally, regionally and globally; accomplished by incorporating the social, economic and environmental objectives of our citizens into our policy, development and culture.

Elgin's sustainability movement is guided by these principles:

To create a self-sustaining community.

To ensure that future generations can enjoy at least the same natural resources that we did.

To preserve, minimize and restore.

To accept that we are one species among many.

To evaluate current practices and policies to lessen our environmental footprint.

Background

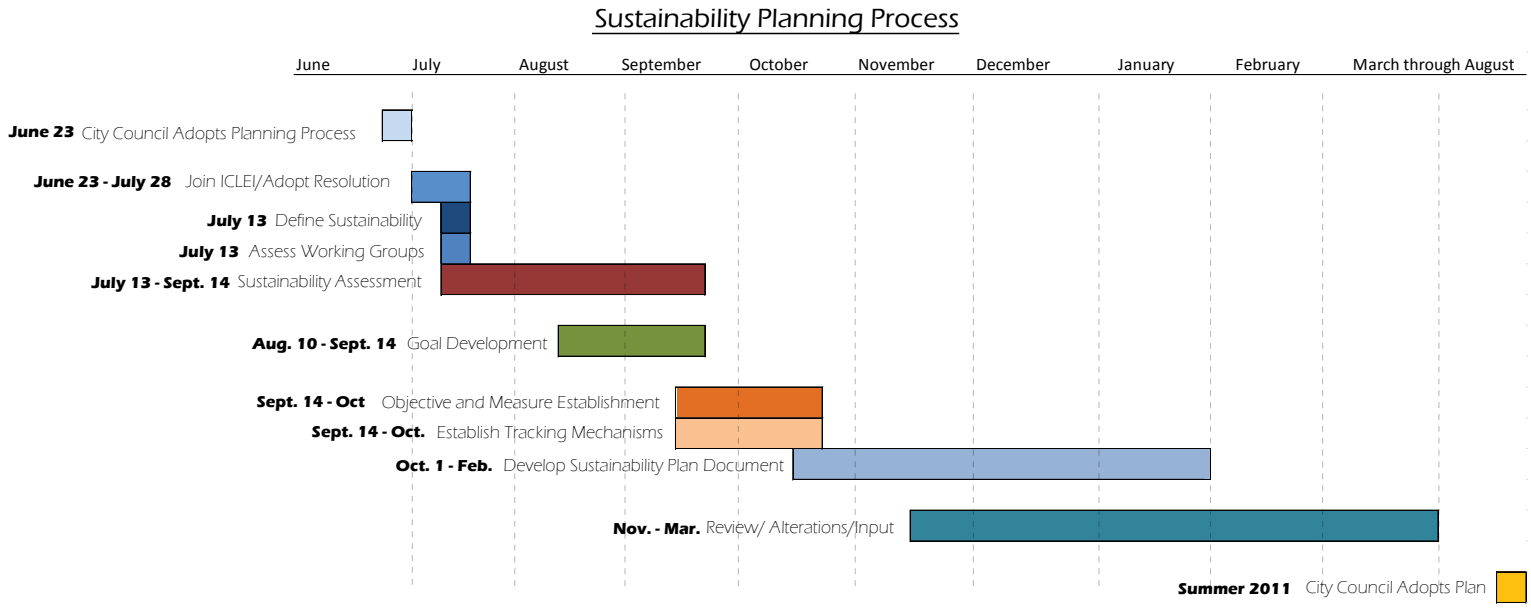
In April of 2008, the city of Elgin issued a request for proposals to retain a consulting firm to assist in the development of a Sustainable City Master Plan (SMP). The plan was intended to shape the future development of Elgin by addressing current community, governmental and development related practices, making them more environmentally sustainable. It would be broad in scope and encompass many aspects of sustainability; including review of existing policies and plans, infrastructure and community development, as well as resource consumption and energy conservation.

To complete the plan, the firm chosen was AECOM, in conjunction with the Center for Neighborhood Technologies (CNT) and Sieban Energy Associates.

Phase I of the SMP consisted of a policy analysis, energy analysis and transportation emissions inventory.

After the completion of Phase I in the summer of 2010, there was a desire from city staff, working group members and elected officials for a more community based, structured planning process. It was decided to utilize the expertise and enthusiasm of Elgin citizens to complete the sustainable action plan as an extension of Phase I.

To accomplish this, the Advisory Team recommended a new course of action to the City Council at its June 23rd, 2010 meeting. Their recommendation involved a working group driven process, utilizing the tools and resources from ICLEI: Local Governments for Sustainability and the assistance of a technical advisor, Bruce R. Dahlquist, AIA, LEED AP BD+C, of DLA Architects, Ltd. The plan was to prepare a draft by 2011 and conduct public outreach and comment throughout the spring of 2011. In summer 2011 the plan was presented to City Council and adopted August 10, 2011.



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Alternative Energy

The purpose of the Alternative Energy working group is to investigate and recommend potential alternative energy options, policies, and incentives which may be addressed by the city of Elgin and other public agencies, businesses, as well as the community-at-large. This may involve the production of energy generated from solar, wind, geothermal, hydropower, biomass, etc. or how it energy is harnessed and consumed.

Energy consumption is part of our lifeblood, whether it is energy used for transportation, buildings or communication. As shown by the U.S. Green Building Council, buildings in the United States account for 39% of energy use, 72% of electricity consumption, and 38% of all carbon dioxide emissions.

While the Alternative Energy working group has investigated many opportunities for energy conservation, many others still exist – and many others have not yet been developed. The challenge brought forth by Alternative Energy is to look at and evaluate opportunities for the reduction of energy consumption and greenhouse gas emissions.

Alternative Energy Goal I

Encourage energy conservation by city of Elgin residents and businesses.

The purpose of this goal is to organize programs to educate, facilitate, as well as provide incentives to citizens and businesses of the city of Elgin for investing in cost effective, ROI-based improvements to existing residential and commercial buildings that conserve energy.

These programs will increase the community's awareness, access and ways for:

- Reducing the cost and amount of energy required to comfortably heat, cool, light, and power residential and commercial buildings.
- Reducing the use of finite fossil fuels, as well as sources of renewable energy, to promote a more sustainable per capita rate of energy consumption.
- Increasing the demand for "green" businesses to locate in Elgin and the Fox River Valley to serve the area's residents and businesses.

Objective 1

Organize a program to educate, citizens and businesses about the benefits of energy audits to identify cost effective ROI-based improvements that conserve energy.

Tasks/Metrics

1. Research energy audit industry standards and practices for performing commercial and residential building energy audit assessments.
2. Identify the types of improvements providing the highest energy conservation ROI.
3. Identify existing (and proposed) energy conservation incentives, rebates, and discounts offered by governmental agencies, utilities, and local energy auditors and contractors.
4. Meet with local energy conservation organizations to learn what they are doing to encourage governmental agencies, utilities, and other groups to promote energy conservation through educational programs and incentives.
5. Develop a presentation that summarizes the energy audit process and provide actionable information about the types of building improvements that provide the highest ROI, existing (and proposed) energy conservation incentives, rebates, and discounts, and local organizations that encourage energy conservation.
6. Provide the presentation at several Elgin area venues (sustainability meetings, Elgin Alive, Gail Borden Library, local conservation organizations, etc.).

Objective 2

Pursue establishing a volume-based discount program to provide a standardized before/after energy audit, and make the types of improvements that produce the highest energy conservation ROI.

Tasks/Metrics

1. Identify local Energy Auditors and contractors who perform energy conservation oriented building improvements.
2. Develop a checklist of questions (e.g., licensed, insured, certified, BBB rating, etc.) used to vet Energy Auditor and contractors.
3. Meet with candidates to review the checklist and gather information about their services and business practices. Interview a sample of their customers to document their satisfaction with the services provided. Based on this information, energy auditors and contractors can be selected to participate in a program to offer discounted Energy Audits and energy conservation oriented building improvements.
4. Negotiate volume pricing with the recommended Energy Auditors and contractors and obtain an agreement from them to provide discounted services to residential and commercial property owners of the city of Elgin.
5. Energy auditors agree to discount their assessments and contractors agree to discount energy conservation oriented building improvements on a sliding scale, (i.e. 10% to 25%) if a specified number of residential or business property owners purchase energy assessment and make typical energy conservation building improvements within a specified period.
6. Develop a presentation that summarizes the volume-based discount program to provide a standardized before/after energy audit, and typical improvements that produce the highest energy conservation ROI. Include a brief summary of the Energy Audit process, the types of building improvements that provide the highest ROI, and existing (and proposed) energy conservation incentives, rebates, and discounts.
7. Report the results of the Energy Conservation volume pricing program to the Elgin City Council over a period of 5 years. Publish the following statistics quarterly:
    - Number of Energy Audits performed by each Energy Auditor
    - Number of energy conservation oriented building improvements by type performed by each contractor
    - Difference between before and after energy audit results
    - ROI of energy conservation oriented building improvements
    - Qualitative feedback from residential and business program participants

Foreseeable Challenges

The greatest challenge associated with accomplishing these objectives will be to motivate and channel the efforts of citizen volunteers, many of whom have full time jobs and who commit much of their free time to their families.

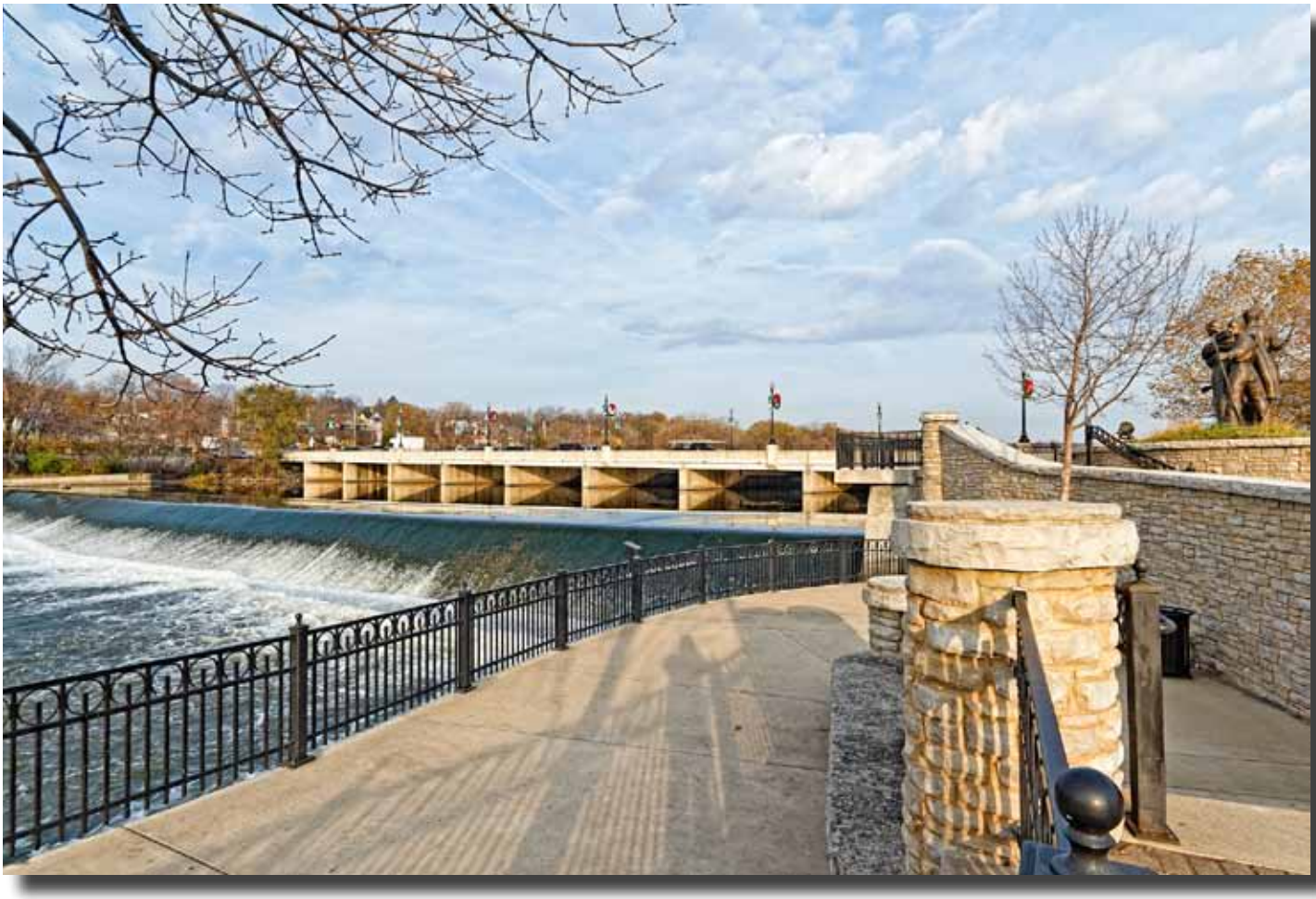
Green Glossary

Alternative energy is defined as energy that is produced without the undesirable consequences of the burning of fossil fuels or without having high carbon dioxide emissions.

Renewable energy is defined as natural recurring potential energy sources to be harvested without the detrimental effects of carbon emissions.

Alternative Energy Goal II
Develop clean and renewable energy alternatives unique to Elgin

The most sustainable lifestyles maximize the use of local and renewable natural resources. In regards to alternative energy, this idea focuses upon the use of available geothermal, solar, wind, and water power. This can be done on a community-wide basis for large projects, or a single building at a time.



Objective 1
Pursue the construction of a hydropower dam at the Kimball Street Dam

The power of the Fox River is a historic asset of the community that may be under-utilized. The use of a low-head, hydro-electric generation unit (generator) on the Kimball Street Dam, should be re-evaluated using the current funding options. If it is found to be a viable project, it should be constructed.

As a part of the updated evaluation, include all current resources, such as current costs for energy, lower cost for interest, sales of Renewable Energy Certificates, and Clean Energy Grants. If the generator is economically viable, this plan recommends the City pursue construction.

There are several benefits to the hydro-electric dam project including:

Demonstration of Elgin's continuing commitment to sustainable living.
The project will demonstrate the Elgin's long-term goal of living sustainably.

Return on Investment
The power generated will be a predicable commodity. The project will only be approved if it is economically justified. Therefore, if it is constructed, it should be a reliable source of income for the Elgin.

Renewable energy
It is understood that hydropower is one of the most economically viable forms of renewable energy. The investment is primarily in the dam structure itself. The flow of the water provides a substantial, predictable, and reliable amount of baseload energy. In this case, the dam is almost a permanent installation due to the need to backup water for the drinking water facility. This makes using the energy even a more viable option than other projects where dam removal is possible.

Reduced line losses by generating power at a city center.
Energy losses are a fact in any operation. The fact that this generation facility is in the midst of electricity users makes this an installation with above average efficiencies.

Improved dam safety.
The energy of the water running over the dam is the primary cause for the churning action at the base of a dam, which has been a hazard. In this case, the vast majority of the water will be routed through the generation system. This means that the energy at the base of the dam is greatly reduced. This should greatly reduce the chance for a tragedy at the Kimball Street dam. Sufficient water will be routed over the dam to retain the aesthetic, and historic, appearance of the dam.

Reduced cost for dam maintenance.
The energy of the water running over the dam is the primary cause for damage to the dam's structure. In this case, the vast majority of the water will be routed through the generation system. Therefore the energy that may damage the dam is reduced.

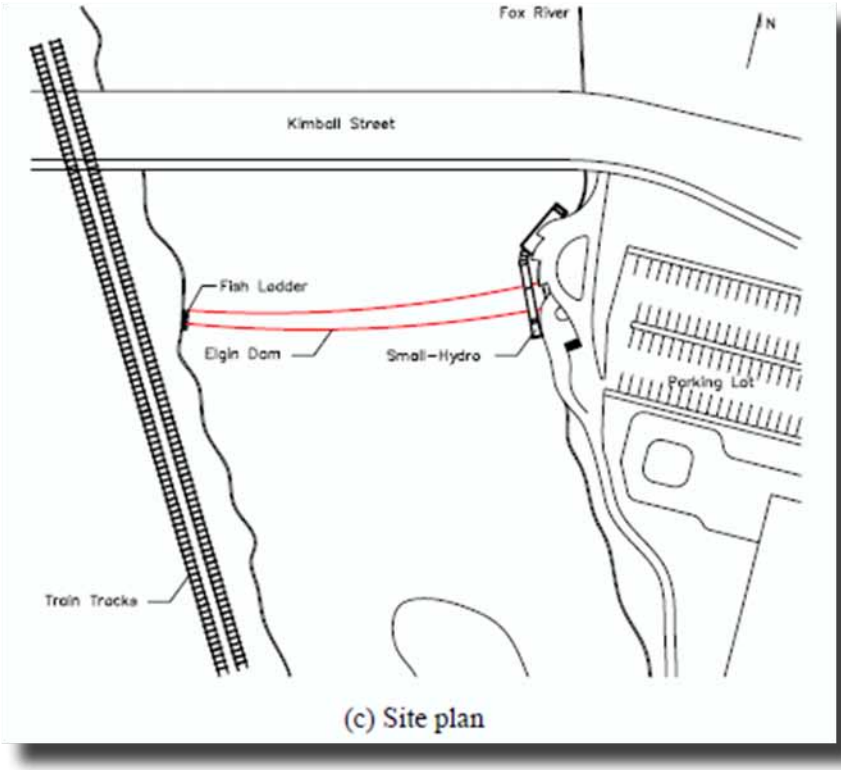
Reduced dependence on fossil fuels.
Hydropower generation units provide the majority of the country's renewable energy resources. They have been installed for decades, even when oil and natural gas prices have been much lower than they are today. This is an indication of the extremely beneficial economics of generating electricity from dams.

Reduced carbon footprint.
Renewable energy reduces the need for fossil fuels, improving economic stability and security.

Demonstration of viability to other communities with low-head dams.
The project should serve as a demonstration to other communities.

RECs for sale, or use as part of Green Power Community certification.
Renewable energy certificates (REC's) are a new part of the evaluation. These are a salable asset that is expected to grow in value as more mandates for renewable energy are required within Illinois and nationwide.

The evaluation for this project can be started immediately and completed within a year. The permitting process for a generator on the dam can take up to three years. The construction could start immediately after permitting and completed within another year. Completion before 2016 is a realistic schedule.



Potential Dam Layout

Objective 1 Pursue the construction of a hydropower dam at the Kimball Street Dam (cont.)

Tasks/Metrics

1. Evaluate the feasibility of the project
2. Conduct a selection process to choose a dam consultant
3. Decision to proceed with final design and construction.
4. Obtain permits from required jurisdictions
5. Engage local population and interest groups
6. Secure funding
7. After bidding, and prior to award, the economics of the bid price, versus the design price should be compared. If the decision were made to scrap the project due to economics, the threshold price where it becomes viable should be calculated. Availability of grants may be a deciding factor.
8. Construction
9. Operation
10. Confirm operation results in expected efficient generation of low-cost power (i.e. commissioning)

Foreseeable Challenges

Economics
Economics and ROI need to be evaluated. According to a presentation by Orenco Systems at the December 1, 2010 meeting of the Elgin City Council, the payback on the dam could be as low as four years. Construction costs are currently estimated at $1.5M.

Appearance
There can be aesthetic concerns about generator facilities because high-power dams where water is not seen overtopping the massive dam structure. In fact, there will be little change to what people see today. With low-head generating units about 10% of the water is allowed to overtop the dam, maintaining the historic view of the Kimball Street Dam. Outreach showing current dams in the area and digital images of before and after views of the Kimball Street Dam site should be prepared.

The second visual concern is the expectation of a large generator beside the dam. In fact, the generation unit will mostly be below ground and quite unobtrusive. Once again, a public education program will likely be necessary.

Safety
Safety is a concern at the Kimball Street Dam. A significant advantage of the generator is that safety is substantially improved by adding it. Without at generator, 100% of the water passes over the dam. This water generates extensive turbulence and churning action at the base of the dam, which is the primary hazard. With a generator, 90% of the water is directed through the generator, reducing the churning at the base of the dam.

Environmental Issues
Dams are a concern of some environmental advocacy groups as they do segment the river, preventing fish passage upstream. In addition, in the pool upstream of the dam can often suffer from excessive sediment deposition and low levels of dissolved oxygen. In this case, the dam is necessary for Elgin's water treatment plants to operate. Therefore, the issue is not if the dam is good or not, it is: "If the Kimball Street dam will be present for the next several decades, is it a good idea for Elgin to generate power from that dam?"

In addition, the construction of the dam can be used to improve the problems associated with the existing dam. Modifications to the dam can include installations of the most modern fish ladders. The fish ladders will be easier to traverse since the rate of flow over the top of the dam is reduced by 90%. In addition, dissolved oxygen can be supplemented by a fountain or bubbler system powered by the dam. Engaging environmental activist groups early-on in the evaluation process is a necessary step.

There is also a concern that fish will be harmed by the generator. In fact, large fish are excluded from the generator by a screen at the intake and maintaining a slow enough rate of flow into the screen that large fish can easily swim away from the screen. Modern designs of generators result in a low amount of turbulence for water passing through the generator. This results in smaller fish mostly passing through the generator without harm. So there is some harm, however the number of injured fish by the generator must be compared with what occurs with the current dam where all fish that are pulled over the dam are subjected to the churning at the base of the dam.

Alternative Energy Goal III
Pursue alternatives and renewable energy systems to reduce Elgin's urban peak energy demand.

Benefits of alternative and renewable energy systems

- Alternative and renewable energy systems can reduce Elgin's peak power requirements and avoid costly infrastructure of new electrical peaker energy supply plants.
- Alternative and renewable energy allows for future sustainable growth of the region. They also prepare the downtown urban environment for global warming rising temperature effects. It is projected that Illinois' future climate temperatures will equal those of the State of Texas by 2050 if emissions remain high.
- Projection of global warming's impact on the Mid-West: Heat waves that are more frequent, more severe, and longer-lasting are projected. The frequency of hot days and the length of the heat-wave season will both be more than twice as great under a higher emissions scenario versus a lower one. Alternative and renewable energy systems help reduce emissions.

Objective 1
Continue Elgin's Center City Commercial Retrofit grant program, focusing on thermal efficiency.

Tasks/Metrics

1. Through participation in Elgin's Center City Commercial Retrofit program, reduce the thermal energy required for the interior conditioned working environment of Elgin's urban business districts by 30% with the following:
    - High efficiency lighting systems and daylighting
    - High efficiency air conditioning systems
    - Building automation computerized systems
    - Use of cost effective utility rates and conservation programs (real-time-pricing)
    - Make the roofs, windows, walls of buildings more thermally efficient
    - Energy effective operational procedures
    - Proactive preventive maintenance and behavior
2. Study additional funding opportunities for the program such as a Property Assessed Clean Energy (PACE) assessment, revolving loan or with TIF district monies
3. Pursue the addition of a Vacancy Rebate Program to the program similar to Richmond, California and Sudbury, Ontario to target vacant properties to improve the energy efficiency of their vacant buildings thus increasing their marketability.

What is a peaker power plant?

"Peaker" power plants run only when there is a high demand, known as peak demand, for electricity. In Illinois, this occurs during the summer when air conditioning load is high, and other power plants cannot meet the demand for power.

Objective 2
Investigate the opportunity to contract with a solar leasing company for providing photovoltaic solar panels and installation to viable roof surfaces, parking garages, parking lots and buildings in the downtown business district.

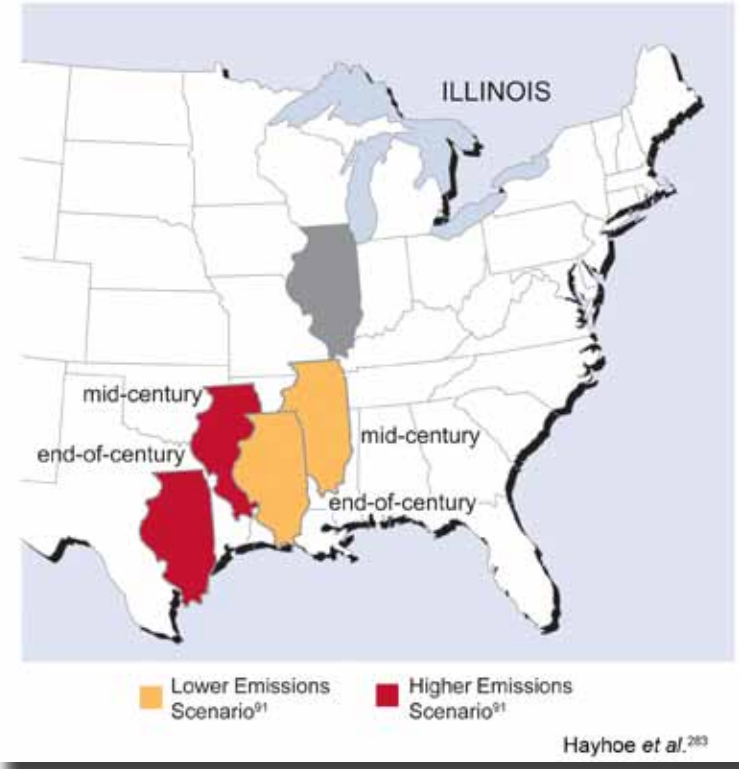
Solar power considerations include:

Timing and Location
Consider that solar power is producing power when our energy demands and costs are highest. Solar power will benefit the end user by producing power where it is needed with no transmission losses and with minimal infrastructure costs.

Also, solar panel costs are trending downward as standardization and mass manufacturing become more prevalent, similar to the same downward trend of the silicon chip industry of a decade ago.

Leasing vs. Owning
Investigate the idea of leasing solar panels. The general idea is the solar company and utility team up to give consumers panels with no up front costs. Companies pay for the panels and installation. An example of this would be where the owner then pays the utility a leasing fee, roughly $100 in most cases, for a 15 year term. Any government incentives also are passed through to the utility.

So, why do this? First consumers do not have any up front costs. Secondly, utility bills should be reduced by more than the monthly lease payment. This way, the utility benefits from a reduced demand on the grid and consumers benefit from reduced energy bills.



Source: U.S. Global Change Research http://globalchange.gov/publications/reports/scientific-assessments/us-impacts/regional-climate-change-impacts/midwest/

Illustrates Illinois' changing climate if current CO2 emissions trends continue

Real Cost of Coal Generation
Because coal-based electricity generation accounts for about a third of U.S. CO2 emissions (some 2 billion metric tons) and with future price signaling of carbon emissions either with a carbon tax or a cap and trade legislation (incentive based) or EPA policy (command and control), the cost of coal will increase. If implemented properly, the price signaling will allow our aging coal-fired plants to be replaced with renewable sources.

Tasks/Metrics
1. Conduct a solar assessment survey of usable roof areas and parking areas for solar panel electrical production through visual surveys and aerial maps.
2. Conduct a solar installation survey study inventorying the roof type, age and conditions of the usable roofs to determine which roofs are due for replacement.
3. Coordinate with the Downtown Neighborhood Association (DNA) to assist in outreach to reach building and business owners as well as help in developing a Vacancy Rebate Program to target vacant commercial buildings.
4. Coordinate with the solar provider and electrical utility provider for outreach and participation of the target area building and business owners.
5. Begin to install solar roof arrays.
6. Develop testimonials with electrical cost saving of solar panel installation with continued outreach.
7. Examine feasibility of direct current micro grid to lower system installation cost by eliminating inverter costs at each installation. If feasible, begin direct current micro grid for solar and wind systems to eliminate inverter initial cost and continuing maintenance or replacement costs.
8. Track on-going performance and cost of solar panels.

Objective 3

Look to adopt a "Heat Island" mitigation policy for solar shading strategies. Focusing on streets, parking pavement, the use of cool roofing products for reroofing existing roof surfaces as well as streetscape-paving material with high reflectivity value.

Tasks/Metrics

1. Identify trees which reduce the heat island effect, putting them in the proper location to maximize their ability to shade buildings and hardscapes, as well as block winds throughout the year.
2. Draft a resolution to mitigate Elgin's urban heat island effect.
3. Through an ordinance strive to reduce parking stall requirements of parking lot areas for new and redevelopment projects. Consider future trends with work- from-home initiatives, shared way to work, shared parking and e-commerce.
4. Implement solar shading with plantings coordinated with ground mounted solar arrays at parking lot locations, public spaces and public rights of way.
5. Strive to adopt an ordinance that establishes standards limiting the amount of solar energy absorbed with an accepted list of cool roofing materials, and paving materials for high reflectivity.

Green Roof Display courtesy of DLA Architects, Ltd.

Alternative Energy Goal IV
Encourage and increase the use of renewable energy by the city of Elgin and its residents and businesses.

Benefits of renewable energy include:

Possible lower energy costs
Conventional energy sources are vulnerable to political instabilities, trade disputes, embargoes, and wars. In 1973, the U.S. imported 34% of its oil. Today, the U.S. imports more than 53%. Natural gas prices are also likely to rise in the future (citizensutilityboard.org). Including renewable energy technologies can help insulate consumers from price spikes due to unpredictable natural gas costs.

Reduces carbon footprint
Fossil fuels pollute the atmosphere with carbon, leading to acid rain and other environmental and health impacts. Alternative energy options produce little or no carbon emissions. In fact, the "Biomass Sustainability and Carbon Policy Study" commissioned by Massachusetts Department of Energy Resources (MA DOER) and authored by the Manomet Center demonstrates that even biomass (plant matter) generates substantially less carbon emissions than fossil fuels. [http://www.mass.gov/Eoeea/docs/doer/renewables/biomass/Manomet_Biomass_Report_Full_HiRez.pdf]

Supports new renewable energy generation, creates new clean energy American jobs, and helps to create a clean energy American economy.
Renewables can contribute to economic development by providing opportunities to build export industries. In developing countries that do not have electricity grids, pipelines, or other energy infrastructure, renewable energy technologies can be the most cost-effective options for electrifying rural villages. The American Wind Energy Association has estimated that global markets for wind turbines alone will amount to as much as $400 billion between 1998 and 2020.

Objective 1
Track the effectiveness of alternative fuel vehicles within the municipal fleet; encourage the use of alternative fuel vehicles.

Alternative fueled vehicles operate on fuels other than gasoline or ordinary diesel, such as compressed natural gas (CNG), liquid natural gas (LNG), propane, biodiesel/petroleum blend, electricity, hybrid gasoline and electricity, and hydrogen. The benefits of alternative fuel vehicles include improvement in environmental and human health resulting from reduced dependence on fossil fuels, greenhouse gas emissions and air pollution. Automobiles are, by their nature, highly visible, making it possible for the community itself to provide role models to residents and businesses. As gas prices continue to rise, this also presents an opportunity for the community to save money.

Tasks/Metrics
1. Analyze cost per mile of alternative fuel vehicles and compare them to a baseline for the existing non-alternative fuel vehicle fleet.
2. Determine the cost of vehicle based on lifecycle (purchase price, maintenance, fuel, etc.)
3. Report results to guide fleet related decisions

Objective 2
Continue research on alternative and renewable energies

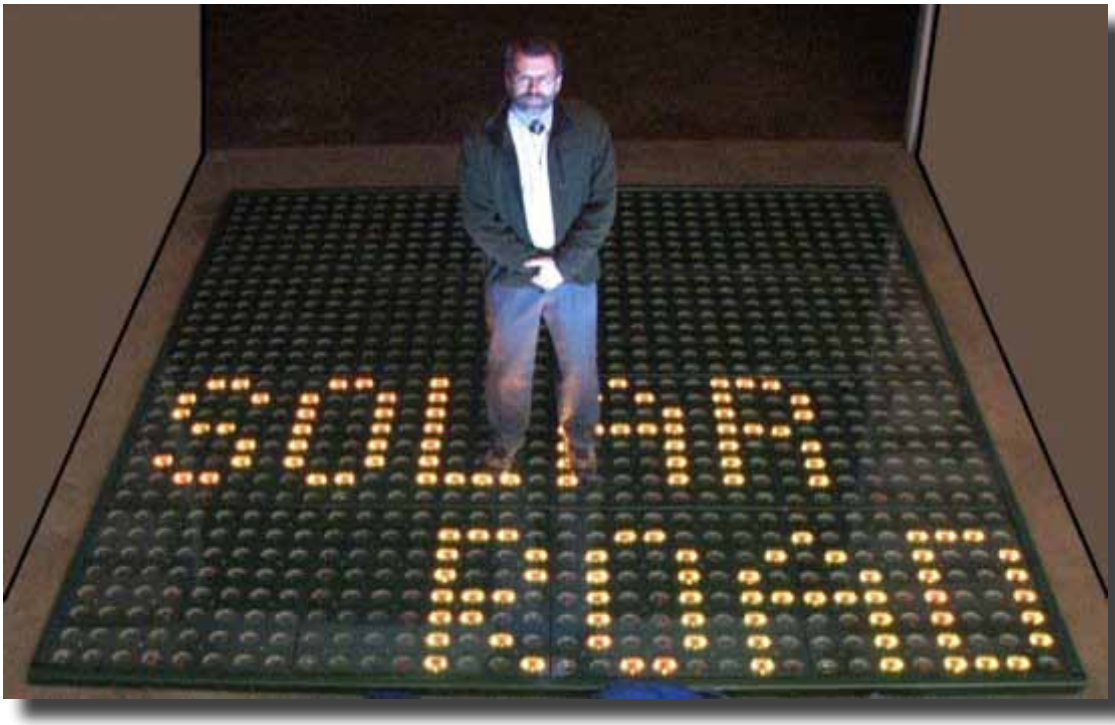
The Alternative Energy working group studied a variety of energy options over the development of this plan. The research conducted led to many promising concepts that are simply too "bleeding edge" for implementation in 2010 or 2011; however, the alternative energy landscape is constantly evolving and these technologies should be periodically reviewed. Examples of the systems we investigated are:

Tasks/Metrics

1. Hydrogen Fuel Cell electricity generators for municipal, business and residential buildings. The technology is valid and being used in hundreds of applications across the country, including Whole Foods Markets, Coca-Cola, Pepperidge Farm Bakery, an Anaheim California Police Station and many universities [http://www1.eere.energy.gov/hydrogenandfuelcells/adoption.html]. When we contacted manufacturers for additional information, we were informed that unless state and local incentives exist, the initial installation cost in Illinois does not provide a suitable ROI for this market to be taken seriously. The local electricity rate would have to exceed $0.12 per kWh to be economically feasible without the availability of new incentives.

2. Solar and Wind power should be further investigated, because changes in this industry are happening quickly. For instance, current legislation might allow Elgin to form a co-op with other municipalities to construct a wind or solar farm in rural areas of the state that are more suited to these technologies. The power generated could be fed into the grid and the co-op would be paid for the power generated by the utilities. At the very least current ordinances should be evaluated to determine what types of alternative energy residents and businesses could install at their site and what limitations might be needed (aesthetic, maximum power production per square foot of property, etc.)

3. Solar Roadways are in the R&D stages, but current funding prospects are positive (including GE's Ecomagination project). This technology could be especially beneficial to Elgin in a variety of ways. Solar panels would be installed instead of asphalt or concrete surfaces for roads, parking lots, patios and sidewalks. The road would then generate electricity which could be transmitted into the power grid; this means that deteriorating overhead power lines could be replaced. Another benefit would be the solar roadways ability to transmit small amounts of heat, enough to melt any snow or ice on the surface, meaning that the snow removal fleet wouldn't need to work as hard. Another safety benefit would be the integrated lights the system offers. The lights can be static, simply for marking lanes, or the lights could be programmed for short term messaging (as in marking the route for the Fox Trot or directing traffic to festival parking, etc). Pressure pads in the system could also make it an alert system for obstacles ahead, such as children or animals in the roadway. For additional examples of solar roadways visit: http://www.solarroadways.com/main.html



http://www.solarroadways.com/prototype.shtml

Additional Resources/Best Practices

American Wind Energy Association, Wind Energy and Climate Change: A Proposal for a Strategic Initiative, October 1997
http://www.awea.org/policy/ccwp.html

Ashland, Oregon
http://www.ashland.or.us/Page.asp?NavID=1366

Austin, Texas energy conservation ordinance
http://www.austinenergy.com/About%20Us/Environmental%20Initiatives/ordinance/index.htm

Richmond, California Town hall Vacancy Rebate Program
http://www.richmondhill.ca/subpage.asp?pageid=townhall_vacancy_rebate_program

Carbon/Coal Video
http://www.sunrunhome.com/why-solar/solar-video/the-story-of-coal

Combating the urban heat island effect across the USA
http://yosemite.epa.gov/gw/heatisland.nsf/HIRIInitiativeTypesbyStateLocal?openview&count=500

Cool Roofs
http://www.energystar.gov/ia/partners/manuf_res/OurSaviors_new.pdf

Energy Matters
http://www.buildingscience.com/documents/insights/bsi-012-why-energy-matters?topic=doctypes/insights

Energy-Saving Tips from ENERGY STAR
http://www.energystar.gov/index.cfm?c=business.bus_index

Florida Atlantic University Solar installation project
http://www.fau.edu/broward/sustain/EnergyProjectFLL.php

Government Fleet Website
http://www.government-fleet.com/Channel/Green-Fleet/News/List.aspx

National Renewable Energy Laboratory, a DOE national laboratory, Dollars from Sense: the Economic Benefits of Renewable Energy http://www.nrel.gov/docs/legosti/fy97/20505.pdf

One Block Off the Grid established a grass roots organization for combining the buying power of large groups of motivated citizens to purchase energy audit and contractor services for increasing home energy efficiency before installing such alternative energy technologies as solar, wind and geothermal systems. Typical discounts for home energy audits are 15%.

http://www.youtube.com/watch?v=bAWS5eLuAKQ
http://howsolarworks.1bog.org/12-ways-to-increase-home-energy-efficiency-before-installing-solar-panels/
http://www.youtube.com/watch?v=rD8aBvaJXY8&feature=related

Prioritizing Green—It's the Energy Stupid
http://www.buildingscience.com/documents/insights/bsi-007-prioritizing-green-it-s-the-energy-stupid?topic=doctypes/insights

Rocky Mountain Institute solar PV analysis
http://www.rmi.org/rmi/SolarPVBOS

Solar Shading
http://www.ci.gilbert.az.us/planning/urbanheatisland.cfm

Sudbury, Ontario vacancy rebate program
http://www.city.greatersudbury.on.ca/cms/index.cfm?app=div_tax&lang=en&currID=6195

The Federal Energy Management Program provides materials for establishing an Energy Awareness Campaign
http://www1.eere.energy.gov/femp/services/create_campaign.html

Ukiah, Oregon
http://www.cityofukiah.com/pageserver/?page=energy_conserv

US Dept of Energy's Petroleum Reduction Tool for Fleet Management
https://www.afdc.energy.gov/afdc/prep/index.php

Union of Concerned Scientists
http://www.ucsusa.org/clean_energy/technology_and_impacts/impacts/public-benefits-of-renewable.html#44

Western Organization of Resource Councils
http://www.worc.org/userfiles/file/benefitsofrenewableenergy.pdf

Wheaton, Illinois
https://www.wheaton.il.us/EnergyPrograms/

Economic Development

We've all seen the images in photos, on movie screens, or along the highway as we travel across our great nation, remnants of towns, such as abandoned buildings and homes, are wistful reminders of happier times when communities flourished. Why do towns die? Towns can die for various reasons, but a common scenario involves the loss of economic vitality. Citizens must be able to provide for themselves and their families. It is an essential part of the human condition. They need access to goods and services, and the ability to pay for those goods and services. When a city's goods or services are not desirable or affordable, its residents look to obtain what they need elsewhere. When good jobs are not available, citizens relocate to other communities.

The Economic Development working group seeks to suggest policies and actions to the city of Elgin that would create an environment of opportunity for citizens to increase their economic wealth. Such policies and actions will support and nurture the creative abilities of both industry and individuals, recognizing their interdependence.

Economic Development Goal I
Increase the Wealth of Elgin's Citizens and Businesses

The better Elgin is perceived, the more likely it is to attract key businesses and their employees to live and work in Elgin. Our goal is to raise the economic wealth of Elgin by increasing the median house-hold income from it's current level.

Objective 1
Increase the median household income in Elgin.

The Economic Development working group feels that this is the most important metric by which to judge economic growth. It is also the most important demographic element that businesses consider in relocation.

Currently, the median household income in Elgin is significantly lower than its area neighbors. Yet, the amenities offered to Elgin's residents are substantially superior to what neighboring communities have to offer. Elgin must leverage these offerings to attract key companies and residents that would serve to increase the median household income.

Tasks/Metrics

1. Monitor household income and other economic indicators by accessing the Record Information Services website (http://www.public-record.com/)

2. Strive for an increase of 3% in the median household income by the end of the 2011 calendar year. This would serve to substantiate the claim that Elgin is indeed growing economically.

Objective 2
Consider retaining a high profile public relations firm (international in scope) to draft and launch an ongoing campaign that effectively communicates that Elgin is a business and resident friendly location.

In the over-communicated society we live in, it is not enough to hope that those interests or people you are trying to communicate your message to will find you. You must aggressively seek to make your message heard above the fray.

Elgin has worked, and continues to work hard, to create a vibrant, sustainable, resident and business friendly community. It is time to let the world know.

Tasks/Metrics

1. Market Elgin aggressively as a premier location to work and live.
2. Strive to improve the gateway by increasing city wide way finding signage. The more amenities that are indicated throughout the city, the more awareness is raised regarding the benefits and advantages of the Elgin community.
3. Suggest that the city council adopt a measure to continue this program to increase the signage by 100% by the end of 2011.

Economic Development Goal II
Leverage available infrastructure programs and tax incentives to encourage businesses to locate and remain in Elgin.

Infrastructure is a vital piece of economic growth. Providing good roads and access to major transportation routes allows businesses to prosper and, in turn, benefit the city and its citizens. Bring into the mix access to communications, broadband access, quality utility service and similar amenities and you provide an environment that is welcoming to business. Encouraging businesses to be leaders through technology, energy sustainability and transportation is one of the most important attractions and retainers a city can offer.

Objective 1
Promote Elgin's willingness to embrace the business community through custom incentives.

Elevating the perception of Elgin as a progressive, business-friendly city in terms of what it offers to businesses through relocation and expansion incentives helps entice new and encourage existing businesses to prioritize Elgin as a vitally important location for business. This type of economic support system is most effective when customized to each business' need. These customized incentives are value added to the business and include:

- Grants - Energy Efficiency Improvement grants and partnership facilitation for low-cost loans
- Fast track permitting
- Review and fee abatement
- Low utility rates – Provide incentives of electrical rates that fall below the average of most areas. Energy efficiency can be significant when local and state codes, ordinances, plans and programs support sustainable development and practices.

Objective 1
Promote Elgin's willingness to embrace the business community through custom incentives (cont.)

Tasks / Metrics

1. All of this information must be visible, accessible and, most importantly, promoted to those researching the area.

2. Though our incentives are customized to each individual prospective business interest, a broad statement verbalizing the city's commitment to infrastructure and incentives is an important piece to the allure of Elgin.

3. To continually evaluate these commitments, there must be a continuing discussion with both local and county officials as well as IDOT and transit companies. Custom programs such as the one Hoffman Estates put together with Pace to service Sears was a key component in facilitating the relocation of a major corporate headquarters to their taxing area.

4. Adopt a measure to review current mass transit (train, bus, walk-able community) and initiate a plan to leverage it to support the Elgin business community. Touting the fact that the Metra Train system already in place can deliver a labor force of four million to Elgin from the Chicago metro area is significant to prospective businesses. Also notable is the already existing Pace bus system that can deliver those workers to the businesses' locations.

Objective 2
Duplicate successful local and regional TIF programs in older Elgin business parks to rejuvenate specific areas into modern sustainable business communities.

Revitalize older industrial parks using TIF Districts (Tax Increment Financing). This is a public financing method which has been used as a subsidy for redevelopment and community improvement projects. It would help to eliminate high vacancy areas that are distressed and of no interest to prospective businesses and make them into sustainable, technological, productive areas for business development and retention.

Tax increment financing (TIF) is an alluring tool that allows municipalities to promote economic development by earmarking property tax revenue from increases in assessed values within a designated TIF district. The Chicago metropolitan area has the largest number of TIF districts in the nation.

Revitalizing the building inventory into modern, sustainable, energy efficient business parks will attract and retain additional companies which in turn will bring higher paying jobs and a much higher tax base. This will benefit the city and other taxing bodies such as schools.

Tasks / Metrics

1. The Miller Davis Industrial Park has obsolete and high vacancy industrial and office properties that do not represent the highest and best use of land in Elgin. Given its current condition, and proximity to I-90, with access from both Route 31 and Randall Road, it is suggested the Miller Davis Industrial Park be studied as a candidate for an initial TIF targeted area.

2. It is also suggested that a review committee be set up to implement the best practices of this kind of program. Once successful, such a project should be duplicated in the many older industrial and downtown areas to bring those communities back to life.

Economic Development Goal III
Encourage a strong educational system and workforce training to provide skilled labor for existing and prospective businesses.

Objective 1
Promote Elgin WorkKeys Program

WorkKeys® is a job skills assessment system that helps employers select, hire, train, develop, and retain a high-performance workforce. It aims to develop and document the skills of the current and future workforce to benefit job seekers and employers, and strengthen economic development efforts in the region.

The Elgin Chamber of Commerce recently partnered with several area agencies to launch "The 1,000 Worker Skills Initiative." The intention is to offer WorkKeys training, assessments, and a National Career Readiness Certificate—at no cost—to 1,000 unemployed residents in the Elgin Community College District. The initiative is funded by the United Way of Elgin and Elgin Community College, with support from the Chamber, the Gail Borden Public Library, the Illinois Department of Employment Security, the River Valley Workforce Investment Board, the city of Elgin, and School District U-46. It is designed to provide documented proof of an individual's skills to make it easier for them to find employment. While the initiative is off to a solid start, communicating and promoting it will be a significant benefit to Elgin's business community and residents.

Tasks / Metrics

1. Educate industry leaders on value of adopting WorkKeys
2. Support U-46's goal to certify all graduates by 2015
3. Educate public on WorkKeys, addressing misconceptions and fears
4. Support increased ESL training – involve other volunteer groups, ex. Retirees, churches, etc.

Economic Development Goal IV
Identify the "Sustainability Industry" as a burgeoning market and encourage a "business cluster" to further attract businesses to Elgin.

The workforce has a central role in the sustainability action plan of the city. The wealth of the community is directly affected by the supporting number and types of jobs.

One central focus of economic development is to focus on developing business clusters that could have a major effect on local employment.

Objective 1
Partner with surrounding organizations to develop "green" workforce training opportunities in Elgin

Elgin has significant employment in health care with two major hospitals and associated facilities. Other growing clusters are marketing exhibits, food and associated products, and plastics. Now, it is important to recognize and prepare citizens for employment in sustainable products manufacturing and services. The global movement to incorporate environmental considerations in our day-to-day lives has generated a sizable and rapidly growing consumer market for goods and services that satisfy the new targets of social and environmental responsibility - the so-called "green" market.

The Natural Marketing Institute (NMI), in coordination with Georgetown University, released in 2010 an analysis of the consumer spending for the "Lifestyle of Health & Sustainability" (LOHAS) market. The LOHAS market for 2008 came in at $290 billion broken down as follows:

Personal Health	$ 117 Billion (natural/organic food, personal care, supplements)
Green Building	$ 100 Billion (Energy Star appliances, certified homes, etc.)
Alternative Transportation	$ 20 Billion (hybrids, diesel vehicles, electric vehicles, car share)
Eco-tourism	$ 42 Billion (travel spent on nature excursions, etc.)
Natural Lifestyles Products	$ 10 Billion (home furnishings, apparel, etc.)
Alternative Energy	$1 Billion (renewable power)

The growth rates for green products is very high. Building products are estimated to grow in a range between 17-23% per year according to NMI, while renewable energy production is projected to grow 40% annually and production of all green products are projected at 100% growth in three years .

Tasks / Metrics

1. Move to develop workforce initiatives along service and manufacturing lines to take advantage of the growth in the green economy. Target those green economy segments that would best give Elgin an economic advantage, and yet are reasonable and attainable.
2. Collaborate with existing Elgin companies involved in the green economy to determine how the workforce can be enhanced in order to take full advantage of the situation.
3. Aggressively market the opportunities to Elgin businesses, bringing them together in roundtables to find means to build a green workforce.
4. At this time, Elgin Community College is developing an Energy and Green Institute and Judson University is considering a Sustainability Management Degree program. These institutions will be important to the full collaboration for workforce development.

Objective 2
Develop opportunities for other allied businesses to enjoy Elgin incentives.

There are significant opportunities in other green industries – e. g. green chemistry, water conservation, recycling and reuse, etc. Many companies are interested in greening their processes, and certainly there is a need to find ways to do this. We project green businesses will be formed around performing these tasks for other businesses.

Current "green" business specific demand from the business sector is in wind turbine businesses. Suzlon Energy, an India headquartered firm is establishing a training center in Elgin to train specialized maintenance employees to work on wind turbine nacelles. This is demanding work with a large safety component. Suzlon Energy has asked Elgin Community College to provide a safety training program that focuses on the maintenance work component.

Tasks / Metrics

1. Document the current green work in Elgin and to delineate the green business segments that we know we want to grow in the city.

Future Considerations
Elgin has some exciting cultural and recreational events on the horizon:

Artspace
The Elgin Artspace project provides 55 affordable housing units for Illinois artists and their families in downtown Elgin; increased property tax revenue by returning an existing vacant, historic, downtown building back to the tax rolls; 100 plus construction-related jobs and 12-15 permanent jobs at the project's completion.

Elgin funded a $750,000 pre-development contract for architecture, engineering, staff time, fees and other various costs associated with the pre development of any housing project. The total project cost is $11.2 million.

The Riverside Drive Promenade
Calling it the ultimate in recycling, Gov. Pat Quinn pledged $8 million toward completing the redevelopment of the City's downtown riverfront. At a press conference held at Walton Island, Quinn, alongside Elgin Mayor Ed Schock and state Sen. Michael Noland, D-Elgin, touted it as a special day for the people of Elgin and the people of Illinois, as he announced that money from the state's $31 billion capital plan would go toward building a new downtown riverfront promenade. Quinn touted the benefits of the project as twofold, saying that it provided an opportunity to improve the environment by cleaning up the waterfront area while creating as many as 100 construction jobs, with hopes of creating another 120 permanent private-sector jobs over time.

Recommendations
Both the Artspace and Riverside projects are in proximity to an area of downtown that has already seen quite a bit of revitalization. This appears to be the right time to look at what other cultural interests might be supported in that area (theatre, music, crafts, etc.). Therefore, we suggest that a feasibility study be undertaken of the immediate vacant real estate in that area for this purpose.

Additional Resources/Best Practices

For information and answers to FAQ's regarding TIF programs in Illinois, see:
http://www.aldermanlaurino.com/userfiles/TIF%20FAQ.pdf

For more information on business clusters see:
http://www.businessweek.com/smallbiz/content/dec2009/sb2009128_428278.htm

For more information about WorkKeys see:
http://www.act.org/workforce/case/elgin.html

Illinois Municipality - Kane County Data
http://www.public-record.com/content/municipalities/kane/index.asp

Related info from Elgin Chamber of Commerce website:
http://www.elginchamber.com/econdevelopment.cfm

Tribune article on Sears / Pace program:
http://articles.chicagotribune.com/1991-10-29/news/9104070475_1_suburban-bus-bus-routes-bus-service

Green Building Technology & Energy Conservation

Buildings have a significant impact upon energy use, both in terms of the building envelope as well as building systems and infrastructure. As a result, the Green Building Technology working group has taken on the effort to identify ways to encourage energy conservation, implement green construction practices, suggest and identify potential funding opportunities, encourage "best practices", and provide guidance for businesses and the community-at-large regarding green and sustainable design opportunities.

Green Building Technology Goal I
Educate all groups in the principles and practices of sustainable and energy-efficient design.

Reducing municipal energy can show the community how they too, can reduce their impact on the environment and save money in the process. Elgin can serve as a model of energy conservation and efficiency. Educational programs inform residents of alternative energy practices. Increased knowledge and interest will help spur future green projects and programs in the community.

Education is vital to implementing sustainable development. A sustainability plan can be enhanced or limited by the level of education attained by the local citizens. An educated community is key to moving beyond an unsustainable community.

This goal can be split into two major parts. The first part is to educate the community about becoming more sustainable and encouraging energy conservation. Seminars can be given and information disseminated that would educate and inform the general public. The second part educates municipal staff about ways to reduce energy and water consumption, which can reduce municipal utility costs.

Objective 1
Produce guidance in sharing with the community-at-large the City's green buildings, including facts and figures relating to green building technology and energy efficiency.

Tasks/Metrics

1. Assemble list of current sustainable building efforts undertaken by the city of Elgin including all costs, savings as well as a list of materials and contractors used.
2. Post information on informational kiosks at public facilities, online and via government television access channel 17.

Objective 2
Develop a voluntary list identifying existing building stock that meets accepted "green standards."

Tasks/Metrics

1. Adopt or develop a standard by which properties could be labeled as "green"
2. Develop an outreach mechanism asking building owners or renters to come for inclusion in green building list based on these standards.
3. Initiate discussions with other municipalities in Kane County and beyond to incorporate more regional examples of green building technology.

Foreseeable Challenges
Implementation of a list of existing building stock that meets some sort of "green" standard would be difficult until that "green" standard has been defined. Early on, using the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) guidelines for existing buildings and/ or energy audits is recommended.

Care should also be taken to communicate to users of this list that the city of Elgin is not recommending or providing reference for any of these contractors. Anyone using the list should independently research the contractors and make a selection based on their own research.

Objective 3
Establish a clearinghouse of contractors, grants and organizations, that can assist in educating the public on green building practices, recycling programs, sustainable building material listings and associations available in the Elgin area.

Tasks/Metrics:

1. Research public and private grants, loans, credits, "green" contractors, organizations that can assist in educating the public on green building practices, recycling programs, sustainable building material listings and associations available in the Elgin area.
2. Assemble research into an online database for public consumption and determine the feasibility of a physical location.
3. Disseminate information via web or mail inserts into local water bills.
4. Research private and public grants and credits could be used to aid in offsetting costs to the City and property owners.
5. Some of these funds should be allocated either through City budget or federal and state grants to address the need for education of public, private, and municipal participants. Additional funds should be allocated to encourage education and green job training that beginning as early as high school.

Foreseeable Challenges
Effectively verifying that contractors meet a "green" standard would be difficult. The City would need to rely on industry associations, which may have the contractor's best interest ahead of the community's.

Care would also have to be taken to ensure the City, in publishing a list of "green" contractors, remains impartial, not favoring one contractor over the other.

Objective 4
Train municipal staff to lower water and energy utility cost and consumption.

Tasks/Metrics

1. Engage municipal workers in training, ranging from reminding staff to turn off lights to sponsoring the certification of LEED Accredited Professionals.

2. Measure progress by the reduction in municipal utility costs and number of personnel trained in green codes or standards.

3. Make cost savings and procedures available online.

Objective 5
Encourage long-term green technology education at local colleges and high schools to include career training.

Tasks/Metrics

1. Encourage initial and continuing education in sustainable technology and energy conservation. In doing so, Elgin will become more attractive to new industries that focus on sustainability and energy conservation.

2. Work with Economic Development and Healthy Living and Community Education group to further define this.

Green Building Technology Goal II
Develop and implement sustainable building polices

Create sustainable building policies that promote green building practices and energy efficiency for new construction as well as the retrofitting of existing building structures. This can lead to substantial savings in both the short and long-term, leaving dollars that can be re-circulated in the Elgin area which help our community economic stability and job creation.

Foreseeable Challenges
The challenges are real both within the City and public agencies in infusing sustainability into the fabric of the City's operations. Success will help model adoption within the private community. Hopefully, technology costs can be reduced or discounted and financial mechanisms/bonding power will also become available.

Objectives 1 and 2

Objective 1: Develop and implement employee training workshop program(s) on sustainability.

Objective 2: Develop and implement a sustainability training plan within the next year to infuse an ongoing commitment to the City's projects, services and outreach contacts connected to the plan, including building and energy practices.

These objectives are interrelated. They establish a clear intent to implement and serve as a model for municipalities, public agencies, schools, business groups and their members, multi-family and individual groups. This should include reaching Elgin's numerous and diverse audiences.

These processes and action steps will encourage additional funding through public and private grants, tax credits or discounts as Elgin shows a willingness to build on an ongoing sustainability effort. The actual out-of-pocket dollar costs will be relatively small. There are examples in many states, including some within the Midwest, which can be drawn on for material and support (see additional resources).

Tasks/Metrics

1. Incorporate green building and energy efficiency elements into internal City policies and guidelines for all employees using the city of Elgin Sustainable City Master Plan Phase I document as a guide.
2. Invite stakeholders such as other public agencies and school districts in the area to incorporate similar policies.
3. As opportunities present themselves and are implemented, they should be documented with the benefits derived from being communicated to the community.

Objective 3
Provide information to the local business and development community to assist them in achieving their sustainable building and energy goals.

Tasks/Metrics

1. Provide examples of projects in the Elgin area to give interested parties real-life local examples to emulate. Information about projects in Elgin will be able to give local flavor regarding audits and contractors as building projects are completed and validated.

Objective 4
Review and evaluate Elgin's building code, energy code and standards to support green building technology and energy efficiency.

Code improvements strives towards better practices and higher standards that affect the quality of buildings in all sectors and lead to greater economic, environmental and community results for their owners over their life span.

Tasks/Metrics
1. Review of codes promulgated by ASRA, adopt codes when appropriate
2. Monitor the approval of International Green Construction Code (IgCC)
3. Consider using green building codes such as International Green Construction Code (IgCC) as a guide (especially in new homes or major retrofits which could easily and inexpensively ready the building for future technology installation)

Elgin Academy Rider Center, LEED Gold Certified

DLA Architects

THE National Bank, Elgin, LEED Gold Certified

DLA Architects

Grand Victoria Foundation, LEED Silver Certified

DLA Architects

Green Building Technology Goal III
Developing Financial Programs for Sustainable Building and Energy Efficiency

Promoting financial incentive programs that pertains to all aspects of sustainable design and/or energy efficiency. Energy savings as well as lower manufacturing and construction costs, translate directly into money saved. These savings reduce operating costs, create, expand, and shape markets for green product and services, improve occupant productivity, and optimize life-cycle economic performance (US EPA). However, achieving these savings costs money in terms of setting up infrastructure and replacing old inefficient systems. Financial incentives to offset these costs would help home and business owners achieve these goals.

Offering affordable financing lowers the barriers for many property owners to make energy-efficiency improvements. However, financing alone cannot make up for the current high cost of some energy efficient materials without rebates. Until costs decrease, property owners will need to be moderate to high energy users in regions with significant rebates and inclining electricity rates, or they need to be willing to pay more for low-carbon electricity.

Foreseeable Challenges

The current downturn in the economy has put a strain on a number of smaller governmental and non-profit agencies. These agencies depend heavily upon the federal stimulus funds for their operations. Also The resources available to government and consumers alike are still relatively new and un-implemented in most local economies.

Objective 1
Offer subsidized energy audits to property owners.

Encourage owners to have energy audits performed on their property by paying for a portion of that audit. Currently participants in Elgin's residential revolving loan program receive complimentary energy audits. This recommendation expands on that by offering citizens subsidized audit with or without participation in the program.

Tasks/Metrics

1. Determine the appropriate amount, using other communities as an examples.
2. Establish program specifications.
3. Define funding amounts.

Objective 2
Work with Elgin based suppliers to allow for homeowners to obtain sustainable building products at a discount.

This objective's intent is to advance the health and productivity benefits of green features such as the use of low-VOC emitting floor carpets, glues, paints and other interior finishes and furnishings. Other green features include: Organic fabrics, Forest Stewardship Council (FSC) certified wood and paper, permeable pavements, green roofs, cool roofs or solar reflective roofs that reduce indoor air temperatures, i.e. heat island effect etc.

Tasks/Metrics

1. Encourage owners to upgrade existing properties to become more sustainable and/or energy efficient by working with suppliers of hardware and/or building materials to offer reduced cost building materials or equipment.
2. Example: Partnering with Ace Hardware to offer discounted recycled building materials or reduced cost low flow toilets for Elgin citizens, with the city of Elgin reimbursing Ace Hardware for the discount.

Objective 3
Encourage property owners to use recycled building materials, keeping these materials out of landfills and explore the feasibility of sales tax incentives for green building materials.

Tasks/Metrics

1. Provide information on the quality and availability of recycled materials compared to regularly manufactured building materials.
2. Engage in discussions about using sales tax incentives to entice consumers, raising the possibility of purchasing sustainable materials.

Objective 4
Hold workshops on green building and energy efficiency financing mechanisms for all private properties.

Workshops will aid owners in understanding what incentives, programs, grants, etc. are available to them.

Tasks/Metrics

1. Develop a workshop for local business and homeowners on the programs offered by the city of Elgin and other organizations, how to apply for these programs, and how becoming more sustainable and energy efficient can save them money long term.

2. Work with local venues to hold at least 2 workshops per year. Presenters may come from other organizations.

Objective 5
Explore fast tracking building permits and/or reduced building permit fees for any property that is pursuing a LEED or Energy Star certification.

By allowing these projects to be fast tracked through the building permit process (essentially ahead of other projects), owners can get their property started quicker which can eventually save time and money.

Objective 6
Institute a “green” investment program which will encourage local green job creation, education and workforce training initiatives.

This program would invest in local green jobs, provide education to the public, students, and potential businesses and allow for the retrofitting of all public facilities.

Tasks/Metrics

1. Work with higher education institutions to implement such a program.

Green Building Technology Goal IV
Establish sustainability programs for future development of new and existing buildings, incorporating preservation, remodeling/ retrofit, design, deconstruction, disposal and construction best practices.

Environmentally sound building programs, practices and technologies protect the environment, pollute less and use resources in a more sustainable manner. Energy-saving technologies applied in buildings can result in enormous reductions in demand for fossil fuels and emissions of greenhouse gases. Better design and building practices can also help address environmental challenges such as natural resource depletion, waste disposal, air, water, and soil pollution. Green building a can also help achieve gains in human health and prosperity. Many green building materials also offer energy efficiency benefits.

Recommendations under this goal include sustainable and efficient site development, selection and land use, energy and resource assessment as well as demand reduction and conservation implementation. Improved Indoor air quality, green building practices including material conservation, reuse, recycling and resource conservation.

Objective 1
Retrofit lighting fixtures and replace bulbs with CFL's or LED's in public facilities where appropriate.

Lighting generally makes up the largest portion of a commercial building's electricity bill, accounting for more than a third of the electricity used. Inefficient lighting also produces large amounts of waste heat, or "heat gain." By reducing heat gain, efficient lighting also reduces a building's cooling requirements. With good design, the energy consumed by lighting in most buildings can be cut at least in half while maintaining or improving lighting quality.

Tasks/Metrics

1. Study all public lighting fixtures and implement retrofit program allowing for proper disposal of old fixtures and bulbs.
2. Implement secondary energy efficient lighting retrofit program across government, private, public, leased and owned buildings.

Objective 2
Promote and standardize a building material salvage, reuse and recycling program available to everyone in the region.

Tasks/Metrics

1. Create a clearing house for all building material salvage, reuse & recycling programs and coinciding practices.
2. Develop a plan to create any additional necessary programs. This may be created in possible collaboration with Waste Management, Restore/Habitat for Humanity as well as any pre-consumer and post-consumer industry opportunities.

Objective 3
Educate building owners and occupants in retrofitting, remodeling, and building greener homes.

Tasks/Metrics

1. Supply the tools necessary to increase awareness on the added value gained through increased energy efficiency, water conservation, green building principles while also increasing health and economic benefits with improved (IAQ) indoor air quality.

2. Conduct public awareness campaigns on local TV and radio channels, door to door, in schools and all public spaces. Focus on the need to refurbish existing buildings for energy efficiency, water conservation and indoor air quality improvements.

3. Increase awareness of green building principals, practices and the numerous benefits to human health, productivity and wealth from green features and technologies.

Objective 4
Encourage home energy reduction and efficiency by distribution of energy efficiency and resource conservation kits.

Kits would be distributed to homeowners for self-installation, or a list of approved contractors would be available for those that need assistance. Kits would reduce energy demand and improve energy efficiency buildings and are inexpensive. The components of these kits can be acquired as donations and or sponsorships from home improvement dealers, manufacturers, and other suppliers Educational materials will also be included with various tips such as optimizing free energy such as day-lighting, increased natural air ventilation, and moisture reduction, including the use of low-emitting floor carpets, interior finishes and furnishings to improve indoor air quality.

Tasks/Metrics

1. Build and distribute "Home Conservation Kits" which could include: energy efficient light bulbs, electrical plate insulators, lighting sensors, smart electric strips, hot water heater blankets, air leak sealant, weather strip eco-friendly caulk, air filter and insulation coupons. Water/energy conserving items may include: faucet aerators, low flow shower heads, toilet bladders, and irrigation system coupons.

Objective 5
Develop Project: "Elgin Green Home", a fully preserved and retrofitted historical home open to the public showcasing all green building principles honored and or established by the city of Elgin and the Sustainability Action Plan.

Tasks/Metrics

1. Create Project "Elgin's Green Home" by collaborating with local designers, builders, landscapers, material manufacturers, renewable energy sources etc. to redesign and retrofit an existing row house in Elgin, creating a public space open for use as an educational and visual tool for our local and regional communities.

2. Video tape the entire process and make available as a public learning tool. After completion outfit the home with educational displays and tour guides trained in the environmental and technological advancements implemented in the home.

3. Establish Green Cleaning, toxic free Integrated Pest management Program and Organic landscape program.

Objective 6
Develop Project: "Elgin's Green School" a completed retrofitted public school effective as a learning tool to the community and students.

Tasks/Metrics

1. Create Project "Elgin's Green School" by collaborating with stakeholders to redesign and retrofit an existing public school in Elgin. Further establishing and fortifying the connection between family, community, education and our sustainable future.
2. Integrate curriculum and tools for building energy efficiency and environmental responsibility.
3. Open the school for public tours on weekends and certain evenings, showcasing all green school building principles honored and or established by the city of Elgin and the Sustainability Action Plan
4. Establish Green Cleaning, toxic free Integrated Pest Management Program (IPM) and organic landscape program in this and all possible public schools.

Objective 7
Initiate momentum towards Green remodeling, redesign, retrofit and building citywide, including all building stock existing as well as new owned and leased property.

Tasks/Metrics

1. Support and establish partnerships with local workforce training programs to provide training for participants involved in building design, construction, remodeling waste management
2. Offer training for professionals and trades-people working in the building sector and educate the next generation of professionals to implement sustainable building principles and practices.
3. Training should include positive environmental deconstruction and construction practices beginning with reuse/salvage of existing building structure, existing walls, floors, roof, and other building material.
4. Review the applicability of life cycle based approaches in the building sector. These help to minimize construction Impacts and environmental risks and impacts over time.
5. Encourage the use of product stewardship agreements, products approved by relevant certification schemes, items with re-used, recycled or certified content and items produced by organizations with a certified environmental management system.
6. Consider material resource use, embodied energy, embodied pollution, recyclability, material efficiency, product life producer responsibility and the labeling of products.
7. Encourage proper material quantity use before, during and after construction.
8. Encourage the use of minimum packaging and the separation of materials.
9. Work to give priority to optimizing energy efficiency during use and in the on-going maintenance of buildings.
10. Design "process education" essentials including sustainable site aspects of proper land use, storm water management, and habitat protection, walkability, proximity to transit and community connectivity, building orientation and scale efficiency.
11. The focus on interior redesign, remodel and renovation should reduce consumption and waste of materials caused by frequent replacement of interior elements and fabrication purchases.

Additional Resources/Best Practices

Berkeley FIRST
http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=22196

Building recycling brochure
www.epa.gov/osw/conserve/rrr/imr/pdfs/recy-bldg.pdf

City of San Francisco
www.sfenvironment.org

Department of Energy
The Office of Energy Efficiency and Renewable Energy (EERE) works to increase the use of renewable energy and energy efficiency technologies. EERE offers financial assistance opportunities for their development and demonstration. For: Government, Consumers, Industry, Nonprofits

Eco-friendly composed products
www.wbdg.org/design/env_preferable_products.php

Eco-labeling
www.eco-labels.org

Education for Sustainable Development Toolkit
http://www.esdtoolkit.org/discussion/default.htm

Energy Efficient Appliances
www.energystar.gov

Environment Magazine, Towards a Low Carbon Economy
http://www.environmentmagazine.org/Archives/Back%20Issues/January-February%202009/FullerPortisKammen-full.html

Forest Stewardship Council wood and paper products
www.fsc.org

Green building supplies and various other health and home items
www.ecologo.org

Green building supplies and various other items
www.greenseal.org

Green building supplies and various other items
www.greeguard.org

Green cleaning products and office products
www.epa.gov/dfe

Hillsborough Township, New Jersey
www.sustainablehillsborough.com

Home products and building/construction products
www.epa.gov/WaterSense

Institute for Sustainable Communities,
Community-based approach to education for sustainability, developing a new generation of leaders through school-based programs linked to community issues.
http://www.iscvt.org/who_we_are/publications/Education%20for%20Sustainability%20Guidebook.pdf

Local, state, and federal government grants, tax credits, Manufacturer's rebates
www.dsireusa.org

Organic ingredients
www.ams.usda.gov

Organic ingredients
www.ecocert.com

Sustainable news sites
www.thedailygreen.com
www.treehugger.com
www.350.org
www.onesky.com

United Nations Educational, Scientific and Cultural Organization, Educating for a Sustainable Future: A Transdisciplinary Vision for Concerted Action
http://unesdoc.unesco.org/images/0011/001106/110686eo.pdf

Williamson, New York Sustainability Report
http://town.williamson.ny.us/Williamson%20FINAL%20Draft%20Report%205%2024%2010.pdf

Workforce Management, Jobs of the Future: A New Green World
http://www.workforce.com/section/hr-management/feature/jobs-future-new-green-world/

Green Infrastructure

Bisected by the Fox River, the city of Elgin is a river community having a strong affinity to the river, its tributaries, and its adjacent natural areas. The protection and enhancement of these natural resources and infrastructure is a primary focus of the Green Infrastructure working group. It has defined "green infrastructure" as the system of parks, open space, rivers and stream corridors, wetlands, forest, natural habitats and parkways which enhance a community by serving as a recreational asset-providing habitat for wildlife, and improving water quality by reducing storm runoff.

To that end, the Green Infrastructure working group has addressed opportunities for recreation, while at the same time protecting and enhancing the regional waterways, expanding native plantings and wildlife areas, as well as improving the overall livability of the city of Elgin. The focus has been to analyze the existing waterways, study opportunities for improving the water's edge, develop recommendations for a long-term protection plan, offer suggestions regarding storm water runoff, as well as propose an on-going educational program for the protection of the waterways and natural habitats.

Green Infrastructure Goal I
Achieve integrity of open space along the regional waterways

Elgin's regional waterways include the Fox River and the creeks that flow into it. Water is essential for all life. Protecting local waterways is necessary to keep the water clean, to prevent flooding, and to provide habitat for fish and other aquatic species. The benefits of healthy waterways to the people of Elgin include clean drinking water, natural beauty, flood control, and recreation in the form of fishing, swimming, canoeing, hiking, wildlife viewing, photography and more. Protecting the areas adjacent to our waterways is a necessary part of protecting this local asset. Achieving a cohesive, connected open space corridor along all of the waterways would reduce run-off of fertilizer and other pollutants, reduce erosion which causes siltation and stream-bank destabilization, and provide natural corridors for wildlife. Recommended enhancements include creating low-impact multi-use trails for recreation that connect local attractions such as natural areas, parks, public transportation hubs, and popular places, such as the library, recreational services and educational institutions.

Objective 1
Analyze existing waterways and surrounding open spaces.

Tasks/Metrics

1. Develop a list of identified problems along waterways such as erosion, flooding and lack of buffer zone (vegetative strip) along the shore. Assess the quality of the existing shoreline, considering the biodiversity of vegetation, access to public, and the ability to support trails.
2. Utilize a rating system to indicate the severity of the problem in each location (see 303(d) listed watercourses list Appendix A—Elgin Environmental Research)
3. Survey the waterways of Elgin, applying the rating system to the open spaces along each waterway.
4. Produce a map of the waterways from the analysis, showing the ratings of areas along each waterway to highlight quality areas as well as trouble spots needing improvement.

Objective 2
Develop a strategy to address the problem areas identified in the existing waterway and surrounding open space analysis.

Part of the strategy should include solutions which incorporate the general public, such as recruiting volunteer groups to help with vegetation surveying, planting and maintenance.

Tasks/Metrics

1. Create a surveying program to track progress, using the rating system established for analysis. This should include recruitment of volunteers to go out once each growing season and survey each waterway. The map of the waterways would be updated with new ratings after each survey to track improvement or degradation of the areas.

2. Develop a short-term plan to address trouble areas with quick solutions, such as improvement of native vegetation diversity through planting and seeding, removal of invasive vegetation, and improved maintenance of existing vegetation.

3. Develop a long-term plan to address the more serious trouble areas. Solutions should include:
    - A plan for land purchasing to create "greenway" easements along waterways. Easements would establish space for buffer zones that address flooding, run-off and pollution issues, and provide corridors for wildlife and human recreation in the form of low-impact multi-use trails.
    - Stream-bank stabilization projects addressing run-off and erosion issues.
    - Landscaping plans with low-maintenance plantings that providing wildlife habitat.

Objective 3
Create ongoing education for the general public in the form of programs, as well as reference material, through websites or brochures for residents to refer back to as needed.

Tasks/Metrics

Inform the general public as to the importance of waterways and green space corridor protection along waterways and how the public can help as individuals. This should include information on:

Storm sewer safety:

- Avoid dumping waste into storm sewers as it goes straight to the river.
- Partner with local school teacher and environmental advocate, Deb Perryman of Elgin High School or model a volunteer effort after her program to do storm sewer stenciling throughout Elgin using Hawthorne Hill Nature Center to coordinate efforts. Hold stenciling days 2 or 3 times a year.
- Plant natural habitats along stream edges and in backyards as opposed to turf grass which attracts Canada geese and permits run-off and erosion.

Other potential projects to undertake:

- Surveying program
- Planting and weed control projects
- Clean-up projects
- Stream-bank stabilization projects
- Multi-use trail construction projects

Green Infrastructure Goal II
Reduce surface runoff

Runoff threatens the health of ponds, streams, rivers, and other water sources. It is the product of precipitation that is discharged from roofs, roadways, agricultural land, and turf grass lawns, with soil, silt, and/or chemicals but not limited to oil, roofing particulates, salt, fertilizers, pesticides, herbicides, and pet waste. Runoff expediently carries pollutants to storm sewers, drainage ditches, and waterways, negatively impacting water quality for the human community while destroying critical wildlife habitat for the natural world. Also causes erosion of hills and stream and river banks.

Runoff will deprive the land of water, depleting groundwater and shallow aquifers, requiring artificial irrigation to keep vegetation alive during periods of drought. Runoff also causes flooding. “Flooding is not caused by an unusual amount of water falling on the land, but by the inability of the landscape to absorb it,” (Patchett, James H. and Gerould S. Wilhelm, The Ecology and Culture of Water, revised March 2008).

Storm sewer stenciling

Involves the painting or marking of pavement right above storm sewers with a message alerting citizens to where the water drains. The goal of stenciling is to promote awareness about the effects dumping pollutants as well as how humans‘ activities directly affect the natural environment. Often stenciling is done by school-age children. It is a fun way for children to learn of environmental stewardship (see below)

Objective 1

Present 7 educational programs by December 31, 2011 about stormwater best management practices. (via Elgin Community Network, Elgin Community College, ReStore, Hawthorne Hill Nature Center, Elgin Climate Change Organization, and/or retail establishments or other education providers).

Programs will focus on: Rain barrels, permeable paver use, replacing portions of turf grass lawns with deep rooted native plants, backyard habitat, rain gardens, green roofs, vegetated swales, and decorative water retention alternatives.

Tasks/Metrics

1. Programs will need the support of retailers to provide incentives for attendance which will be relevant to what is being taught, so participants can receive discounts on supplies to implement the things they learn.

Objective 2

Create a City ordinance that recommends businesses consider using stormwater best management practices.

Objective 3

Create an incentive program (much like Elgin's tree bank planting program) which would include detailed instructions that would enable residents to receive sustainable native plants (at a reduced cost) to create rain gardens to reduce residential runoff.

Green Glossary

Backyard habitat provides food, water, shelter, and space for wildlife.

Green roofs consist of roofs fully or partially covered with soil and plants that can withstand extreme conditions, while absorbing water from rain, snow, and other precipitation, providing insulation, and protecting the building.

Permeable pavers contain space between each paver to allow water to be channeled to and stored in a water collection system. There are manufactured permeable pavers or flag-stones, a native Midwestern stone, can be utilized, especially for terraces, patios, and walk-ways.

Rain barrels are receptacles for gathering water that drains off roofs through downspouts. Spigot and overflow features allow this water to be used for watering plants during dry spells.

Rain gardens are shallow, humanly made depressions planted with deep-rooted native plants to capture storm water runoff from hard surfaces such as roofs or driveways and filter pollution.

Vegetated swales are drainage ditches enhanced by deep-rooted native plants to filter and absorb water, thereby curtailing runoff.

Photos courtesy of Pat Hill

Green Infrastructure Goal III
To protect, preserve, and enhance natural resources, parks, and other public areas.

There are many reasons to protect and enhance natural resources, they contribute to property values and maintaining these assets can reduce long term costs. With proper programming and communication one can attract visitors to Elgin. The recreation and enjoyment of natural resources creates positive economic impact for the City. As Elgin becomes more of a destination, it will become more attractive to potential citizens. Studies show that communities with more natural resources have lower crime rates and have more vital, happy citizens. With more local parks and bikeway accessibility, traffic congestion can be eased, providing healthier citizens. When time is allocated to preserve sensitive natural resources, the entire community benefits from ensuring that these resources are not permanently exhausted.

Objective 1
Increase percentage of available public areas per capita.

Tasks/Metrics

1. No specific ratio is being recommend. Simply that Elgin should focus on increasing the acreage of park area whenever possible. Neighborhood parks should be ¼ to ½ mile walking distance without having to cross any busy streets. Ideally they should be 3+ acres and include a playground, a shelter, an open field area, and a paved area. A historical look at Elgin's park acreage per 1000 citizens can be found in Appendix A—Elgin Environmental Research

Objective 2
Increase accessibility to open areas, bike trails, neighborhood parks, etc.

Tasks/Metrics

1. Strive for all bike lanes specified in the Bikeway Master Plan to be in place by 2015.

Objective 3
Establish an Urban and Community Forestry Master Plan with urban tree canopy goal by May, 2011.

Objective 4
Conduct an assessment of all open space within city limits.

Tasks/Metrics

1. Survey neighborhoods about their park needs (could be included in citizen survey)
2. Incorporate assessment results into parks master plan. Provide proper resources (capital and human) to maintain and enhance City assets. This should be included in the 2012 budget, with bi–yearly evaluations moving forward.

This study should answer at least the following questions:

- How many parks do we need?
- How much open space should we have?
- How do we determine land use?

Objective 5
Provide metrics to establish productivity and service standards for maintenance of City owned green infrastructure resources by December, 2012.

Tasks/Metrics

1. Conduct operational review of current service standards and provide recommendations if improvements can be achieved.

Objective 6
Establish network of public/private partnerships to improve ability to obtain local, State, and Federal grants by December, 2012.

Photos courtesy of Pat Hill

Additional Resources/Best Practices

City of Berkeley, California
http://www.cityofberkeley.info/ContentDisplay.aspx?id=8022
Provides children the opportunity to stencil storm sewers through their public works department.

Illinois Nature Preserves Commission
http://dnr.state.il.us/inpc/
High quality natural areas and habitats of endangered and threatened species are protected.

Illinois RiverWatch
http://www.ngrrec.org/index.php/riverwatch
Rivers and creeks are rated on their biological integrity using data collected annually.

Kane County Wild Plants and Natural Areas by Dick Young
Plant identification and rating based on their value to the natural environment. Natural areas maps and inventories.

Plants of the Chicago Region by Floyd Swink & Gerould Wilhelm
Plants are identified and plant communities are rated on integrity and conservation importance.

Seattle Washington
http://www.seattle.gov/util/Services/Drainage_&_Sewer/Keep_Water_Safe_&_Clean/RestoreOurWaters/Volunteer/StencilaStormDrain/index.htm
Administers an ongoing program by offering a toolkit for stormsewer stenciling.

Tall Grass Restoration Handbook by Stephen Packard & Cornelia F. Mutel
A field guide to the wetlands of Illinois by the Illinois Department of Natural Resources includes Natural Resources Regional Wetland Indicator Status and National Wetlands Inventory.

Healthy Living and Community Education

The role of the Community Outreach and Healthy Living working group is to be the catalyst and primary resource for educating the community-at-large as to the efforts proposed by each of the other working groups. They will be maintaining an on-going dialogue with, and between, each group; then implementing the most effective and appropriate method of reaching the desired audience for each working groups' goals and objectives.

In addition, while individuals make green decisions daily regarding their impact upon the community, the Community Outreach and Healthy Living working group has also focused upon the individual decisions made daily regarding their impact upon themselves in terms of healthy living and healthy eating.

Living and Community Education Goal I
Educate the community on the value of sustainable practices and healthy living.

The Healthy Living and Community Education (HLCE) working group believes the education and promotion of healthy living and sustainable practices in our community will enhance the quality of life for all.

The Community Education and Healthy Living Work Group mission is to support other working groups in their dissemination of information to one another/internal and to the community/external. Awareness of any duplication in services and identification of gaps in services is critical for coordinated delivery of all content areas.

The HLCE working group will assess resources already available in the community and identify, showcase, and coordinate with those existing efforts to demonstrate the inclusive nature of true sustainability.

Educational venues will be created for the dissemination of information in all content areas to demonstrate flexibility in their design (traveling exhibit, website, etc.). The means for delivery of services should be dependent on, and appropriate to, the target audience - age, ethnicity, family, "sustainable" knowledge base; and the 'level of action' in content area - personal, household, neighborhoods, schools, business, community.

Measurable outcomes that are meaningful and realistic will be set in place to reflect level of learned "sustainable" behaviors.

The HLCE working group believes the education and promotion of healthy living and sustainable practices in our community will enhance the quality of life for all.

Objective 1
Create a network of information between and among the working groups.

All working groups have worked diligently to identify key information and opportunities for our community to improve sustainable practices related to their particular subject. Many of the discoveries and priorities of these groups are related, directly or indirectly. By fostering networking and sharing of information between the groups, we will strengthen the efforts of all groups, create efficiencies among the groups, and approach our community's sustainability issues from a more holistic overview.

Tasks/Metrics

1. Meet with each working group to discuss their priorities and goals.
2. Compile information from each working group to identify common goals, themes, and opportunities for efficiencies in messaging.
3. Facilitate discussion between and among work groups by inviting a liaison from each work group to meet with the Healthy Living and Community Education working group work group on a regular basis.
4. Create an online vehicle for internal communication between groups,
5. Help facilitate partnerships between work groups through events and projects, such as the Green Expo.

Objective 2
Encourage the creation of a clearinghouse for existing community groups.

For the purpose of this committee, a clearinghouse is defined as a central agency for the collection, classification and distribution of information. It is an information-exchange mechanism for both internal (other working groups*), as well as a communication channel for community groups regarding events, ongoing venues and new endeavors. It will provide a unified place, calendar and map in virtual and physical formats that can be easily accessed by the community-at-large. The clearinghouse will foster synergy through collaborative opportunities while avoiding double booking and conflicting events.

An example of "double booking" could be if a school plans a green event on March 1 and the Elgin Climate Change Organization (ECCO) has an event that same day. By checking with the clearinghouse to discover what is going on in Elgin, the two groups can choose to work together rather than draw away from each other's attendance.

*Note, http://elginsustainability.wikispaces.com/ is the current tool for sharing information among working groups.

Tasks/Metrics

1. Determine the most user-friendly means of collecting information from work groups and community organizations and disseminating it out to the community at large.
2. Determine and create the places and spaces that will be repositories for information, such as a City office, virtual site, calendar, poster/flier kiosk, for internal and external groups and the public.
3. Identify the person(s) and organization(s) that will be responsible for clearinghouse maintenance and updating by format and location (virtual and physical).
4. Determine if a budget is needed, and or allocation of staff.
5. Develop a budget, if needed; identify the source of funding.
6. Identify community groups and train them how to enter data and access information for timeliness and accuracy.
7. Advertise the creation of the clearinghouse.
8. Continuously update, refine, and improve the tools and processes for sharing information
9. Identify long-term overseer of the clearinghouse information.

Objective 3
To showcase educational venues, create others and identify viewable working examples of sustainable practices.

Educating the people of our community on how to live sustainably and why doing so is critical to our health and quality of life now, and for the residents of the future. While making major changes such as converting to renewable energy sources are important, a greater impact is possible through awareness and smaller doable day-to-day steps in conservation and life style modification.

Tasks/Metrics

1. Identify existing events and venues that educate and promote sustainability - web sites, nature centers, non profits, resource centers (Downtown Neighborhood Associations green building information) community and school projects, existing community events.
2. Create new venues and tie into new events – Such as information outlet at the Harvest Market, a traveling City display at a Resident Officer Program of Elgin Officer's (ROPE) house or other City and community facilities.
3. Identify working sustainable examples to be viewed, compile information, and make it available.
4. Coordinate with other work groups to create sustainably incentives for residents, businesses, restaurants, non-profits, and community organization. Items could include CFL's, rain barrels, or new trees. Incentives could be given that encourage businesses to carry "green" products, buy local, conserve energy by lowering the lights, and provide on the spot recycling of paper, plastic & food. Non-profits could be given incentives to work their missions in a green manner and encourage their target audiences to do so also.
5. Establish the community challenge modeled after the film, "No Impact Man", tracking the progress of various residents and businesses as they attempt to reduce their carbon footprint, using the project to educate the community as they follow the participant's progress throughout the year.

Objective 4
Promote healthy eating habits

To educate the community about living sustainable and healthy life styles, it is important to begin with a subject matter that can be easily understood and related to by the average resident. When it comes to sustainability, the one most common denominator we have as human beings is that we all eat and we all need nutrition to keep us healthy. It is the one common sustainable practice that applies to every single one of us, regardless of age, ethnicity, or economic situation. It is also the most straight forward and logical subject matter we can use to begin educating the community about sustainable and healthy living.

Tasks/Metrics

1. Define what healthy food and healthy eating is. Define what healthy eating is in terms of a sustainable community. Demonstrate how the production and delivery of food is influenced by every aspect being studied by our groups.
2. Identify what nutritional issues affect our community. Then focus on these nutritional issues/problems, and create a program proposal that can be used to solicit funding and/or be a catalyst for community support. Investigate best practices of other communities.
3. Identify individuals, and or groups in the community already practicing and promoting healthy eating habits. Partner with these wherever possible.
4. Identify sources for healthy food by recognizing local stores, restaurants, purveyors, local farms and community gardens. Provide that information to the community through outreach events, written literature and social media.
5. Research ways to bring healthy food from these sources to families and households across the city.
6. Advocate for fresh and healthy foods in the community, where access is most limited by strengthening the capacity of small regional farmers/purveyors/stores/community gardens/restaurants to aide in this task.

Objective 5
Create a sustainable and green city-wide recognition program within one year of final adoption of the Sustainability Action Plan

Acknowledging the efforts and accomplishments of both individuals and businesses through an award recognition system will help educate the broader community through positive examples of what others in the community are doing, and encourage them to try living a more sustainable and healthy lifestyle. By highlighting and featuring existing best practices, other homeowners and businesses may be inspired to follow suit and make similar improvements.

Tasks/Metrics

1. Establish a residential property owner's recognition program that uses criteria from all working groups to identify properties that demonstrate creative and best practices in being sustainable.
2. Establish a business recognition program that recognizes companies for implementing green and sustainable practices in their workplace.
3. Design a process for nominations and criteria for award selection.
4. Identify a City department or community group to administer the award program.

Objective 6
Disseminate information about sustainable practices and healthy living to the community through traditional media and other creative marketing resources.

It is important to introduce the concept of sustainability through visual and concise messaging to a diverse audience. Marketing efforts must be designed to be a call-to-action that will inspire and engage all residents in changing behavior that will result in more healthy and sustainable lifestyle.

Tasks/Metrics

1. Research to determine how the community currently gets their information.
2. Determine the best media outlets and other resources to use to reach various Elgin audiences.
3. Identify the various audiences (children, seniors, families, businesses), and how best to target market to each category.
4. Engage the community to follow the results of a project, such as "No Impact Man" challenge mentioned under Objective 3, by partnering with local media and social networks.
5. Create a speakers bureau made up of representatives from each working group to present to community organizations, schools and neighborhoods.
6. Create video that showcases the concept of sustainability and current sustainable practices taking place in the community, that can be shared with the local community through City website, social media sites and television. (example: Luther College, http://www.youtube.com/watch?v=zDGpPfuSGHs&feature=related)
7. Create a Green Expo each year to showcase the latest "sustainable practices" and educate the community-at-large about all things sustainable.
8. Partner with other professional organizations to host other sustainable conference, meetings and demonstrations, such as NIU Sustainability Conference held in 2010.

Objective 7
Endorse Kane County's "Fit Kids 2020 Plan" to help curb childhood obesity in Kane County.

As noted in Kane County's "Fit Kids 2020 Plan", many communities in this nation are faced with the challenges presented by childhood obesity. In some Kane County communities one in three children are overweight. Overweight children often grow up to be overweight adults, which can lead to increased healthcare costs and a reduced quality of life.

To combat this trend in Kane County, groups of over 80 stakeholders met and discussed strategies to improve the health of Kane County children. The plan is the result of this collaboration. More information can be found at www.MakingKaneFitForKids.org.

Tasks/Metrics

1. Recognize Kane County's effort in creating this plan by asking the Elgin City Council to endorse the plan.
2. Strive to follow the guidelines set forth by the plan.

Recycling and Waste Management

As our economy continues to grow and produce waste, a critical challenge is to manage and reduce the waste being generated. According to the National Park Service, the United States generates the most garbage per capita than anywhere else in the world. This is post-production, pre-consumer, as well as post-consumer waste.

The goal of the Recycling and Waste Management working group has been to focus on recycling and waste reduction in both residential and non-residential properties. This includes enhancing and expanding recycling efforts of local businesses, residences, and government agencies, as well as encouraging the re-use of materials. A major component of this is in education – whether it is the public sector, businesses, or the community-at-large. The city of Elgin needs to be a catalyst in the promotion of responsible and sustainable waste management practices throughout the community.

Recycling and Waste Management Goal I
Increase recycling and waste reduction in the business sector of the community.

Encouraging businesses to actively recycle, reduce waste and reuse materials whenever possible will help reduce the volume of waste sent to landfills, preserve natural resources, reduce costs and ultimately reduce our carbon footprint.

Objective 1
Within the next two years, develop and implement a comprehensive recycling and waste reduction education program for local businesses.

Tasks/Metrics

1. Compile information to be included in a comprehensive recycling booklet as it specifically applies to outlets and services available in Elgin.
2. Mail recycling booklet to each business. Provide follow-up with one-on-one contact with each business to provide support where needed within two years after booklets are mailed.

Objective 2
Within the next four years, develop and implement a solid waste franchise to include, at minimum, the Downtown Business District.

This goal's second objective would take this one step further by consolidating trash and recycling services in the downtown business district under one waste hauler via a franchise agreement. This would ensure that more uniform services are being provided, reduce the number of containers required in alleys, reduce truck traffic, allow services to be provided more efficiently.

Objective 2 continued

Tasks/Metrics

1. Conduct outreach and ensure downtown businesses support such a program.
2. Develop a well-written bid document and franchise agreement.
3. Award a waste & recycling franchise
4. Determine an administrator within the City to follow-up on implementation of the program, as well as complaints and violations. Some businesses with unique waste streams may require an individualized assessment to develop a successful recycling program.

Foreseeable Challenges
If the proposed program would have downtown business owners incur the cost of the franchise agreement, there may be some resistance depending on the monthly charge. It will be of the utmost importance to reach out to the business community to ensure full understanding and support of this program.

Some business owners may object to losing their ability to choose their own waste provider and/or being told that they must recycle. Also Waste haulers may politicize this process, since many stand to lose business if they are not the successful franchise vendor.

Objective 3
Within five years, pass an ordinance requiring local businesses to recycle a minimum of 30% of their waste stream.

Tasks/Metrics

1. Conduct outreach and ensure Elgin's business community supports such a program.
2. Develop, adopt and actively enforce a recycling ordinance for local businesses, giving ample time (or a grace period) to comply before penalties are assigned for non-compliance.
3. Develop a reliable mechanism for collecting and analyzing data on waste and recycling volumes.
4. Review waste stream data to determine if goals are being met.

Foreseeable Challenges
Each business has its own waste stream and unique challenges. While the ordinance may not be able to cover all circumstances; it must be flexible enough to work with as many business properties as possible, while providing exemptions for others that clearly have special needs that are best suited for other types of programs.

The penalties for non-compliance must be high enough to provide an economic incentive for businesses to comply. The public and the affected businesses may have a negative perception of the ordinance and resist government acting as "Big Brother" imposing more requirements on the private sector. Also, ensuring that the ordinance is actively enforced will be key in ensuring compliance.

Recycling and Waste Management Goal II
Encourage increased recycling, composting, source reduction and waste reduction in residential properties.

Encourage residents to actively recycle, compost, reduce waste, and reuse materials whenever possible. It is also important to encourage residents to engage in source reduction, which reduces the amount of waste that is initially generated. This goal is imperative to reduce the volume of waste sent to landfills, preserve natural resources, reduce costs, reduce pollution and ultimately reduce our carbon footprint.

Objective 1
Within three - five years implement a year-long curbside pilot program for composting/organics in Elgin.

Tasks/Metrics

1. Analyze and compare volume data in pilot program areas versus non-pilot program areas to determine diversion potential and success.
2. Work with the City's waste hauler to select a valid cross-section of households to participate in the pilot program, select curbside carts, develop program parameters and implementation guidelines. Identify funding source, if not included in the City's solid waste contract, and develop public education program.

Foreseeable Challenges
Obtaining community buy-in may pose more of a challenge than political buy-in. Ensuring that a good cross-section of different housing unit types and other demographic factors are included in the pilot will be key in measuring the program's success when implemented city-wide. Providing public education in both English & Spanish may be important in ensuring that residents understand the program and comply.

Objective 2
Implement a city-wide curbside organics collection program within one year after the conclusion of the pilot program.

Tasks/Metrics

1. Review and utilize data from the pilot program to implement a city-wide, curbside organics/composting program.
2. Collection costs and program parameters need to be negotiated with the City's solid waste vendor. The final agreement needs to be approved by the City Council prior to implementation.

Foreseeable Challenges
Identifying a funding mechanism for the additional service during strained economic conditions can pose a challenge. Residents may perceive the program negatively if program costs are passed on directly to them thru a user fee.

Objective 3
Within 5-7 years, divert 30% of organics from the waste stream.

Tasks/Metrics

1. Monitor solid waste collection statistics prior to, and after, the implementation of the new program to determine if diversion goals are being met.
2. Developing a comprehensive public education program will be key in achieving this goal. In addition to monitoring collection data to determine success, efforts should also be made to communicate this information back to residents to keep them engaged in the process.

Foreseeable Challenges
Non-compliance and non-participation from residents could pose a challenge.

Objective 4
Host a yearly community recycling day that provides a central drop off center for various recyclable items that cannot cost effectively be collected curbside.

Tasks/Metrics

1. Schedule, promote and implement a yearly annual recycling event. Monitor yearly participation and volume data from the event to help track diversion goals, and provide valuable information for the establishment of a permanent center.
2. This service has already been included in the City's newly negotiated solid waste contract. Waste Management will be responsible for implementing this objective annually through the duration of the contract agreement.

Foreseeable Challenges
Identifying a suitable, centrally located site may pose a challenge. This service has been included in the City's contract with Waste Management; therefore, Waste Management would be responsible for this task.

Objective 5
Within 5 years create a permanent central drop off center for all recyclables that cannot be collected curbside. Example: medicine, chemicals, oil, etc.

Tasks/Metrics

1. Review and utilize data from the yearly annual recycling event to establish a permanent collection center
2. Identify and purchase (if necessary) land for a collection site and award a contract to build or renovate an existing building that would be suitable for use.
3. Obtain the necessary permits and licenses to operate the facility.
4. Award a contract to a vendor(s) to staff the facility and process materials collected, or investigate the possibility of staffing the facility utilizing in-house personnel.

Foreseeable Challenges
Identifying a suitable, centrally located site may pose a challenge. Due to the items that may be collected at the center, a comprehensive public education program will be important to overcome public perceptions of safety. Identifying a funding mechanism to build, renovate and staff the facility may be a challenge. Although funding from the State of Illinois has been available in the past to help offset some of these costs, the State's fiscal crisis makes this funding unreliable.

Objective 6
Create a recycling booklet in addition to Kane County's that instructs residents on what and where certain materials can be recycled in Elgin.

Tasks/Metrics

1. Develop, print and distribute guide to residents via mail, electronically and at local public facilities.
2. The City's contract with Waste Management includes the development and distribution of an annual bi-lingual solid waste & recycling guide to residents.
3. Work with Waste Management to create a recycling booklet in addition to Kane County's that instructs residents on what and where certain materials can be recycled in Elgin.

Foreseeable Challenges
Staff will need to ensure that the guide is updated and re-distributed annually in a timely manner.

Objective 7
Within two years, pass an ordinance that requires owners of residential properties with 6 or more units to provide on-site recycling service to their residents.

Tasks/Metrics
An inventory of residential properties that fall within this range (6 or more units) must be completed.
Inspections will need to be made after the adoption of the ordinance to ensure compliance.
An ordinance must be written, passed by the City Council and actively enforced.

Foreseeable Challenges
Landlords that are not currently providing this service will likely resent the mandate and the additional costs that they will incur. (Note: Kane County currently has an ordinance that requires this, however, it is not actively enforced.)

Objective 8
Within two years, implement a recycling education program in local schools to educate students on the importance of recycling, composting and waste reduction.

Tasks/Metrics

1. The City's contract with Waste Management includes the provision of a school education event for students once per year.

Recycling and Waste Management Goal III

Encourage the city of Elgin and its residents to purchase and use products made from recycled or reclaimed materials, most importantly, or environmentally friendly materials.

Purchasing products made from recycled materials "closes the loop" by creating a market demand for recyclables that are collected in recycling programs. Utilizing recycled versus raw materials to manufacture new products preserves resources, saves energy and reduces our carbon footprint.

Objective 1

Lead by example by purchasing products manufactured from recycled goods, such as, paper, rubber, plastic products, etc.. In the short term, increase the amount purchased and utilized by 10% every year for 5 years.

Task/Metrics

1. Report annually on quantity of recycled products it purchased.
2. Seek additional producers of recycled products.

Objective 2

Educate businesses and community residents about the value of using products made from recycled goods.

Tasks/Metrics

1. Report on the quality of recycled products purchased.
2. Gain information from businesses and residents about the quality of recycled products available for purchase.
3. Create educational materials about "closing the loop" in recycling and post on City's website and written materials.

Objective 3

Encourage local businesses to stock quality products made from recycled goods

Tasks/Metrics

1. Report on prices of recycled products versus products made from virgin materials as this could be a factor in purchasing recycled products versus products from virgin resources.
2. Communicate desire with suppliers to purchase quality recycled products.

Additional Resources/Best Practices

Alameda County, CA

City of Chicago:
http://www.cityofchicago.org/city/en/depts/doe/supp_info/household_chemicalscomputerrecyclingfacilityoverview.html

City/County of Honolulu, Hawaii
http://www.opala.org/solid_waste/business_recycling.htm

City of Naperville:
http://www.naperville.il.us/hhw.aspx

City of San Jose, CA

Denver, CO
https://www.denvergov.org/recapp/OrganicsPrograms/CompostingCollectionPilotProgram/tabid/431111/Default.aspx

"Fantastic Three" City of San Francisco, CA
http://www.calrecycle.ca.gov/LGCentral/Library/innovations/curbside/CaseStudy.htm

Illinois Department of Commerce & Economic Opportunity
http://www.commerce.state.il.us/dceo/

Illinois Recycling Association
http://www.epa.gov/

Kane County Department of Environmental Management:
http://www.co.kane.il.us/Environment/recycle/electronic.htm

Kane County Recycling Guide
http://esh-docdb.fnal.gov/cgi-bin/RetrieveFile?docid=260&version=1&filename=Kane%20Co%20Recycle%20Guide.pdf

Kane County Mandatory Recycling Ordinance- requires that establishments must recycle the two largest recyclable materials in their waste stream.

Mandatory organics source-separated program---City of San Francisco, CA
http://indianapublicmedia.org/eartheats/san-franciso-composting-program/

McHenry County Business Recycling Guide
http://www.crystallake.org/Modules/ShowDocument.aspx?documentid=567

Solid Waste Agency of Lake County
http://www.lakecountyil.gov/swalco/default.htm

U.S. Composting Council
www.compostingcouncil.org/

U.S. EPA
http://www.epa.gov/

Transportation and Mobility

The city of Elgin is in a unique position, located adjacent to many significant transportation corridors and systems linking Elgin to Chicago, other neighboring communities within and surrounding the Fox River Valley, as well as O'Hare Field. It is also at the confluence of these roads used for private and public transportation, as well as commuter and commercial railroads. A significant bicycle path system follows along the Fox River, entering and exiting Elgin's urban fabric.

With all of these modes of transportation into and throughout the city (including walking), it becomes critical to understand and manage how these impact the city of Elgin. The role of the Transportation working group has been to look at transportation systems and make recommendations to identify green and sustainable opportunities for action.

Transportation and Mobility Goal I
Reduce Energy Consumption and Pollution from Transportation Operations

Transportation relies heavily on internal combustion engines, which use oil based products. According to US EPA, motor vehicles are the number one cause of air pollution causing adverse health and environmental effects. Fine particulate matter get deep into the lungs and can get into the blood contributing to asthma, chronic bronchitis, irregular heart beat, even premature death for people with heart and lung disease. The environment is also damaged by particulate matter as it lands in our food crops, water supply and in the forest. Reducing pollution from vehicles, environmental and personal health will improve while reducing our reliance and consumption of oil.

Objective 1
Reduce Energy Consumption and Pollution from Transportation Operations

Tasks/Metrics

1. Summarize available information in a pamphlet to be distributed to the public.
2. Develop public presentations of the summarized information.
3. Partner with School District U-46, private schools, community organizations and area businesses to create a Clean Air Campaign through signs in parking lots, "drive thru's", education pledges and clean air stickers.

Objective 2
Reduce idling within the municipal fleet and community-at-large.

Idling or "leaving the car running" is a wasteful practice that is not only harmful to air quality and human health but vehicles as well.

According the city of Minneapolis, the EPA and National Institute of Environmental Health Services, an average car burns about a gallon of gas for every hour of idling. Ten seconds of idling uses more fuel that simply restarting the vehicle. Idling can lead to increased air pollution, has been linked to cancer, heart and lung disease and asthma. Also idling causes undue hardship on a car's engine; an idling engine does not run at peak efficiency and causes increased residue on spark plugs and dirty engine oil.

Tasks/Metrics

1. Develop a "reduce idling" driver list (commitment to turning off one's vehicle when idling over 1 minute) largely to promote awareness of idling and help the community become accustomed to thinking about resource consumption. Use the city of Minneapolis, Minnesota as a model.
2. Create an "idle policy" for municipal fleet vehicles.
3. Identify enforcement possibilities for the future.
4. Create an idling ordinance for all vehicles within Elgin.

Transportation and Mobility Goal II
Reduce Energy Consumption and Pollution related to Transportation Infrastructure

Construction, maintenance, and functionality of transportation infrastructure uses energy and is a source of pollution affecting the public health and environment. By carefully choosing materials, methods and procedures, negative impacts can be reduced, while providing sustainable infrastructure to support our transportation and mobility needs.

Objective 1
Analyze traffic control device functionality to optimize mobility and alleviate congestion.

Tasks/Metrics

1. Complete an inventory of traffic control devices and assess their operations in terms of traffic flow.
2. Develop a well-publicized feedback mechanism for users of the roadways to reflect real world conditions.

Objective 2
Investigate alternative construction materials for a sustainable transportation infrastructure to reduce energy demand and promote environmental stewardship.

Tasks/Metrics

1. Prioritize the use and application of alternative construction materials, depending on the type of application and expected traffic load.
2. Study, comment, and when possible utilize the recommendations and checklists developed by Greenroads.us
3. If feasible pursue a “Green Roads” certification for a local road project.

Objective 3
Facilitate creation of charging stations for electric vehicles (EV) in an effort to reduce “range anxiety” and make electric vehicle usage more convenient for average citizens.

While there does not seem to be a consensus for how close electric vehicles charging stations should be, a study funded by the US Department of Energy recommends public charging stations be located near locations where the EV owner will be parked for a significant period of time (1 – 3 hours.) These include shopping malls, governmental facilities, public parks, sports venues, arts productions, museums, libraries and outlet malls. This recommendation should serve as the starting point for determining future EV charging locations.

Tasks/Metrics

1. Conduct a study to determine the number and locations of electric vehicle charging stations.
2. Implement recommended network of charging stations.

Objective 4
Encourage investment from public and private sectors to add livability infrastructure to encourage use of public transportation (train, bus, vehicle/ride sharing) and non-motorized transportation (walking, biking).

Tasks/Metrics

1. Monitor public, quasi-public and private improvements related to train and bus shelters, benches, bike racks, drinking fountains, widen/improved sidewalks (shopping/entertainment areas and between destinations), shade trees and outdoor seating.
2. Work with PACE to inventory existing bus shelters; develop recommendations for expansion of these facilities
3. Adopt a resolution to install bike racks next to each bus shelter to encourage biking and bus ridership

Transportation and Mobility Goal III
Promote Alternative Transportation Options

Current transportation options rely heavily on personal vehicles which contribute to increasing pollution levels, traffic congestion, and excessive energy consumption in comparison with other means of transportation. Promoting alternative transportation options will help to reduce use/ownership of internal combustion vehicles while satisfying the need to move goods and people.

Objective 1
Educate the public and businesses on the benefits of alternative forms of transportation and mobility to reduce pollution and energy consumption.

Tasks/Metrics

1. Create a pamphlet with local transportation information and cost comparison on transportation per vehicle type.
2. Distribute directly to businesses and at public events.

Objective 2
Research vehicle sharing programs in an effort to reduce traffic congestion, therefore reducing its pollution, economic and health impacts.

Tasks/Metrics

1. Contact at least two organizations with vehicle sharing programs to review implementation procedures in Elgin.
2. Evaluate their successes.
3. Develop similar program for Elgin.

Objective 3
Research resident's vehicle usage and conditions to gauge willingness to participate in a vehicle sharing program.

Tasks/Metrics

1. Utilizing direct mail and a web survey, gauge the public and business community's willingness to participate in a vehicle sharing program.
2. Utilizing direct mail and web survey, determine existing vehicle usage.

Additional Resources/Best Practices

Automobiles and Carbon Monoxide
http://www.epa.gov/otaq/consumer/03-co.pdf

City of Minneapolis, Minnesota "No Idling" campaign and ordinance
http://www.ci.minneapolis.mn.us/airquality/antiidling_home.asp

City of Mount Vernon, New York Car Sharing Program
http://cmvny.com/

A program in which two vehicles from a car-sharing company are provided municipal workers during the day and then made available for rental at night and throughout the weekend. To use the car share program, Residents must pay a $99 membership fee and additional hourly rental rates that start at $10.
(http://green.autoblog.com/2010/05/10/city-of-mount-vernon-launches-nations-first-municipal-car-shari/)

City of Portland, Oregon
http://www.portlandonline.com/transportation/index.cfm?a=292688&c=34749

In addition to utilizing several car-sharing companies, Portland is also one of the first local governments to provide free, reserved public parking spaces to car-sharing companies. Providing an additional perk to using one of these services.

Chicago Transit Authority and I-GO Smart Card
http://www.igocars.org/how/chicago-card-plus-i-go-card/

A public/private partnership that provides dual account holders (Chicago Transit Authority and I-Go) access to both services using the same card.

Green Roads Rating System
http://greenroads.us/

Idling Reduction Programs for the Chicago Metropolitan Area
http://www.cleanaircounts.org/documents/Idling%20Reduction%20Programs.pdf

US EPA Transportation and Air Quality
http://www.epa.gov/otaq/

Urban Design

The Urban Design working group has focused on promoting an urban design framework for a sustainable Elgin that is more livable, more respectful of nature, more interconnective, more prosperous, more compact, safer, and with a stronger sense of place.

The Urban Design working group's vision for a sustainable Elgin includes the following:

More Livable: Elgin's urban form will make the city a desirable place to experience, offering a variety of places in which to live, work, shop, and play as high-quality environments. This means Elgin will:

- Offer quality urban environments that are healthy, safe, attractive, and which meet residents daily needs
- Ensure capacity direct growth and development to areas where it is most sustainable
- Encourage quality development that provides a range of housing options, employment opportunities, retail facilities and recreational amenities throughout the community
- Design the environment to serve function and aesthetics primarily for human use and scale, while secondarily for vehicular use and expediency

More Respectful of Nature: Elgin's urban form will support efficient and sustainable rural, natural and recreational resources. This means Elgin will:

- Protect, maintain, steward, and expand a 'green infrastructure' network of parks and open spaces throughout the community
- Reduce its ecological footprint by applying low impact design principles in all aspects of urban design and urban living
- Carefully assess the proposed development of rural land, and support its use for local food supply and other agricultural pursuits
- Provide for limited agricultural uses within the city
- Achieve a sustainable balance between the natural environment and the built environment
- Enhance existing natural resources and maximize natural assets within the urban setting
- Develop and build utilizing natural, renewable, recyclable and recycled materials

More Interconnective: Elgin's urban form with its highly interconnected street and transit networks will make it be easy to move about, and be bicycle and pedestrian friendly. This means Elgin will:

- Become an increasingly bicycle and pedestrian friendly community
- Ensure that local and regional transit systems function effectively for people movement
- Provide for freight movement
- Incorporate more green corridors

More Prosperous: Elgin's urban form with its focus on centers, corridors, neighborhoods, and districts will contribute to economic growth and prosperity. This means Elgin will:

- Build on a compact form
- Promote mixed-use centers at a variety of scales as the focus for activities serving various sized geographic areas
- Allow commercial, office, recreational, civic, institutional and residential uses as a matter of right within centers and along transit supportive corridors
- Reserve land for employment centers
- Ensure capacity for growth and economic development

More Compact: Elgin's urban form will be compact, with an intensification of land uses structured on a framework of centers, corridors, neighborhoods and districts. This means Elgin will:

- Focus and encourage more intensive growth and development in centers and along corridors where mixed land use can provide the services, shopping, jobs, and housing for a growing population
- Increase the intensity of development and activities in centers and along corridors to support public transit
- Encourage the development of complete, pedestrian-friendly neighborhoods that provide for life-long living
- Encourage infill development and/or redevelopment in areas that can be or are well-served by infrastructure, services and public transit; and discourage it in areas that may need to be constrained
- Pursue quality of space over quantity of space in development

Safer: Elgin's urban form will make it a safer place to be with well-designed buildings, outdoor spaces, and the connections between them. This means Elgin will:

- Promote the arrangement of land uses and the design of buildings to encourage neighborly attention to activities on the street and on other outdoor spaces
- Apply the principles of crime prevention through environmental design in all development
- Calm traffic speeds, and encourage improvements to make the community bicycle and pedestrian friendly

Stronger Sense of Place: Elgin will be a beautiful and memorable city, celebrating and building on its sense of place, regional city status, natural features and parks, arts and culture, and its architecture and heritage. This means Elgin will:

- Protect and enhance the elements and characteristics that contribute to its sense of place … its neighborhoods, downtown, landmark natural and built features, heritage buildings and places, and arts and cultural amenities
- Build on its status as a strong regional city in the greater Chicago metropolitan area
- Coordinate the relationship of buildings, corridors and urban spaces to each other
- Establish a contextual identity for each neighborhood
- Create physical environments that promote social interaction and unification in neighborhoods and in the larger community

Urban Design Goal I
Foster a Livable Community

To strengthen our community by creating viable public spaces, and promoting the creation and restoration of compact, walkable, safe, interconnected, mixed-use neighborhoods throughout.

Approaches to urban development since the advent of Euclidian zoning controls have typically had an emphasis on land use segregation and hierarchical street systems, and designs focused on engineering, surveying and lot yield efficiency. This approach to neighborhood and community design inhibits social interaction; community formation; forces auto dependence; discourages walking, bicycling and transit ridership; denies easy and equitable access to community facilities and resources; and prevents opportunities for locally based business and employment. Today there is greater emphasis on the social, economic and environmental aspects of neighborhood and community design. Recent neighborhood design concepts have been given titles such as transit oriented design, traditional neighborhood design and urban villages.

In response to this, the emerging planning agenda focuses on the idea of an urban design structure based on walkable mixed-use neighborhoods with interconnected street patterns to facilitate movement and to disperse traffic. Daily needs may be in walking distance of most residents. With good design, more people will actively use local streets, enhancing safety. Local employment opportunities are facilitated in the neighborhood structure, providing the community with a firmer economic base and enhancing self-containment of neighborhoods and towns. Safe, sustainable and attractive neighborhoods are sought with a strong site responsive identity supportive of local community. This model promotes better community, economic and environmental sustainability than conventional planning practice.

Objective 1
Focus on the development of complete neighborhoods organized on a framework of centers, corridors, and green infrastructure.

Neighborhoods function well when residents can easily meet their daily needs, such as getting to work and shopping. This means having the right neighborhood mix of housing, retail, open space, and transit, with new housing located near reliable transit lines. We need to accommodate cars without having to rely on them. A great neighborhood also needs a full range of City services, safe and vibrant streets, gathering places, and an appreciation for its special character.

Objective 1 Continued

Tasks/Metrics

Short Term Initiatives (1-5 years)

1. Update the 2005 Comprehensive Plan and Design Guidelines (participate in & monitor on-going work in Community Development Department & Congress for New Urbanism (CNU)/ Institute for Transportation Engineers (ITE)/Elgin Project)
2. Update 2000 Parks Master Plan (participate in & monitor on-going work to update the Parks Master Plan)
3. Update 2000 Riverfront Center City Master Plan
4. Adopt a 'complete streets/context sensitive solutions' policy
5. Adopt an 'inclusionary housing' policy
6. Adopt conservation codes for natural, cultural and architectural resources
7. Utilize a concept plan for the arrangement, use and appearance of buildings, structures and exterior spaces within neighborhoods, including how they relate to recreational parks, working lands and natural systems to show citizens how neighborhoods could be. The concept plans can be used in outreach and charrettes to facilitate discussion about the built environment.
8. Update development codes and ordinances
9. Adopt form-based development regulations
10. Develop a targeted and strategic approach to infill development and Redevelopment

On-Going & Long Term Initiatives (>5 years)

1. Brownfield/greyfield redevelopment
2. Focus on centers and corridors
3. Focus on green infrastructure
4. Focus on transit supportive development and the redesign of the commuter bus system
5. Promote the development of complete neighborhoods, which contain a variety of uses and building types
6. Maintain a good balance of jobs, housing and public services

Eight Key Elements of a Great Urban Neighborhood:

Walk to Shops: A great neighborhood has stores and shops that satisfy everyday needs within an easy walk from home. Everyday shops and services include corner groceries, day care, cafes and restaurants, banks, dry cleaners, bakeries and the like. An easy walk is about five to ten minutes.

Safe Streets: A great neighborhood has safe and friendly streets. In a great neighborhood people can walk without fear of crime, being threatened by traffic, or being disturbed by excessive noise. People feel like they "belong" on neighborhood streets. Residential streets feel public, and more like open space than a space reserved just for motor vehicles. Streets are a pleasant part of the neighborhood.

Get Around Easily: A great neighborhood has many choices for moving to, from, and within it. Great neighborhoods make it easy to move about on foot, by bicycle, transit, and auto. They accommodate the car, but allow people to live easily without one.

Housing Choices: A great neighborhood has a variety of housing types. A mix of housing choices of various sizes to meet different needs and preferences.

Gathering Places: A great neighborhood has places for people to meet, talk and be neighborly. Public gathering places include parks, plazas, sidewalks, and shops.

City Services: A great neighborhood has a full range of public services for residents. Public services include parks, schools, police and fire stations, libraries and other amenities.

Special Character: A great neighborhood has its own special character. Their physical setting, streets, buildings, open spaces, history, culture and the people who live in them shape all neighborhoods. In great neighborhoods these attributes combine in unique and memorable ways.

Part of the Whole: Great neighborhoods make great cities. Great neighborhoods stand out on their own, yet are connected to the city. They can be a refuge for their residents, but also a part of the city's wider community.

Urban Design Goal II
Foster Sustainable Transportation

To advance mobility alternatives consistent with human and ecosystem health, and with equitable accessibility for all.

The more we drive, the further we move away from sustainability. While we are finding other ways to get around, Elgin residents strongly favor an auto-dependent lifestyle more than walking, biking or public transit use.

Elgin is located in one of the most rapidly urbanizing regions in the country. Creating walkable, compact neighborhood centers around existing or planned transit nodes, and transportation corridors, is key to managing this growth in a sustainable way, as is helping people live closer to where they work. Critical to this effort is developing a complex, interconnected, 'complete streets' network which accommodates all modes if travel – walking, biking, public transit, and the motor vehicle.

Streets have a significant role to play in relation to social interaction, public safety and amenity, but require development to face the street to do this effectively. Development facing onto streets provides surveillance, activity and visual interest and, on busier streets, exposure which can assist commercial viability. Provision of frontage helps build community focus and enables streets to act as an integrating element in neighborhoods and towns, rather than as a divider, which has often happened in conventional development.

Design of the street network can assist the potential for energy conservation through reduced vehicle travel, facilitating climate-responsive house positioning, management of natural features, provision of business and commercial opportunities, and adaptability to changes in land use.

A more sustainable transportation system, focused on bicycling, carpooling, clean and efficient public transit and, maybe most important, walking, will also have far-reaching benefits for personal health. Alternative transportation modes are linked to greater physical activity, which is a key factor in maintaining healthy weights. And fewer vehicle miles traveled reduce the risk of motor vehicle deaths and injuries.

Objective 1

Focus on the development of a highly interconnected 'complete/context sensitive' streets network that will provide acceptable levels of safety and convenience for all street users, and convenient linkages to activity centers and other destinations.

The network of streets is a great public resource. It functions well when it is designed, constructed, maintained and managed so that it safely accommodates multiple modes of travel, provides universal access as well as access to private property, enhances a place's character, protects and where practical enhances or restores environmental resources, and allows for safe and efficient delivery of freight and utility services.

Tasks/Metrics

Short Term Initiatives (1-5 years)

1. Update the 2005 Comprehensive Plan and Design Guidelines (participate in & monitor on-going work in Community Development Department & CNU/ITE/Elgin Project)
2. Adopt a 'complete streets/context sensitive solutions' policy
3. Utilize a concept plan for the arrangement, use and appearance of buildings, structures and exterior spaces within neighborhoods, including how they relate to recreational parks, working lands and natural systems to show citizens how neighborhoods could be. The concept plans can be used in outreach and charrettes to facilitate discussion about the built environment.
4. Update development codes and ordinances (street design standards)
5. Adopt form-based development regulations

On-Going/Long Term Initiatives (>5 years)

1. Brownfield/greyfield redevelopment
2. Focus on centers and corridors
3. Focus on transit supportive development and the redesign of the commuter bus system

Urban Design Goal III
Responsible Land Use

To promote responsible development ensuring careful thought prior to large-scale development of agricultural lands, the preservation of connected habitat and open space, and small-scale conservation of environmentally sensitive sites.

A sustainable community strives to use its land resources wisely. While adopted public policy seeks to channel higher density growth into neighborhood centers and along transportation corridors, this has not always been realized. As Elgin develops to accommodate the demands from significant population growth, it is simultaneously losing its farmlands and natural habitat.

Sprawl development is associated with greater water and energy use than more compact patterns of development, as well as, more runoff and water pollution. In short, sprawl development impacts our natural resource areas as well as the accessibility and quality of our connection to these natural areas.

Urban parks and open space present a particular challenge since they compete with many other needs that cities must accommodate within a limited land mass, such as housing, transportation and commerce. Since parks are usually not considered on the same economic scale as these other uses, it takes vision, community support and political will for new parks to be created.

Objective 1

Focus and guide development of the built environment in a manner that discourages the premature development of prime agricultural lands, creates opportunity for locally grown foods, and conserves important natural resource and cultural features on the landscape.

"Premature" for the purposes of this goal means the conversion of agricultural lands that are non-contiguous to the existing built environment (i.e. avoiding "leap frog" development). This goal strives to ensure that land is developed in a compact and contiguous manner.

Implicit in this goal is the understanding that not all development occurs in a logical manner and in some instances other developmental forces prevail. This goal is not meant to serve as "road block" to the westward expansion of Elgin but merely a "speed bump" to ensure careful thought is put into planning decisions.

Planning for a sustainable approach to urban development requires the integration of planning for the built environment with planning for conserving important elements of the green infrastructure system. Green infrastructure is our natural life support system - an interconnected network of waterways, wetlands, woodlands, wildlife habitats, and other natural areas; greenways, parks and other conservation lands; working farms, forests; and other open spaces that support native species, maintain natural ecological processes, sustain air and water resources and contribute to the health and quality of life for our community and people.

Just like our built infrastructure, green infrastructure should be carefully planned, designed, and invested in far in advance of development. Green infrastructure planning should be the first step in the land use planning and design process. Green infrastructure planning should also be coordinated with planning for the built infrastructure — roads, bike trails, water, electric, telecommunication and other essential community support systems. Integrated planning and design should connect the two in a more effective, economic and sustainable network.

A sustainable approach to urban development – one that integrates the built environment with those features worthy of conservation in the natural environment – should accomplish the following:

- Protect key natural and cultural assets, and incorporate them into the design of a neighborhood.
- Ensure that the design of neighborhoods takes into account environmental constraints including soil erosion and flooding, and protects areas of natural or cultural significance.
- Ensure that new urban areas incorporate best-practice urban water management techniques relating to storm water quality and quantity, water conservation and reuse, and ecosystem and public health.
- Balance provision of a sustainable and efficient urban structure with protection and enhancement of environmental attributes, and rural and urban agricultural activities.
- Protect and conserve margins of water courses, water bodies and wetlands.
- Ensure the provision of adequate land to protect and to provide public access to the Fox River and its tributary streams.
- Protect the built environment from flooding, inundation and storm water damage.
- Prevent adverse impact to valued natural environments sensitive to changes in the natural water cycle.
- Provide a network of well-distributed parks and recreation areas that offer a variety of safe, appropriate and attractive public open spaces.
- Provide a more integrated approach to the design of open space and urban water management.
- Enable minor adjustments to streams, wetlands and marginal flood plains to ensure that urban forms can be compact, walkable and efficient. The adjustments must have minimal environmental detriment and minimize disturbance caused by draining or filling natural streams and wetlands.

Objective 1 Continued

Short Term Initiatives (1-5 years)

1. Update the 2005 Comprehensive Plan and Design Guidelines (participate in & monitor on-going work in Community Development Department & CNU/ITE/Elgin Project)
2. Update 2000 Parks Master Plan (participate in & monitor on-going work to update the Parks Master Plan)
3. Update 2000 Riverfront Center City Master Plan
4. Adopt conservation codes for natural resources
5. Make zoning provisions for urban agriculture
6. Utilize a concept plan for the arrangement, use and appearance of buildings, structures and exterior spaces within neighborhoods, including how they relate to recreational parks, working lands and natural systems to show citizens how neighborhoods could be. The concept plans can be used in outreach and charrettes to facilitate discussion about the built environment.
7. Update development codes and ordinances, as they relate to the relationships between the built environs and the natural environs

On-Going/Long Term Initiatives (>5 years)

1. Focus on conserving the green infrastructure network
2. Develop and implement a biodiversity protection plan

Urban Design Indicators

Indicators provide the "hard data" to monitor and make the case for sustainability related initiatives. Below are some indicators that relate to the Urban Design group's recommendations. For more information on sustainability indicators please see Appendix B.

- Access to Fresh Food
- Acres in Woodland and Farmland
- Acres in Parks and Open Space/1,000 Population
- Average Commute Time
- Urbanization and Impervious Surface Change
- Bicycle and Pedestrian Counts
- Carbon Footprint
- Infill Development
- Land Use Mix
- Median House Size, New Construction
- Neighborhood Gathering Places
- Net Residential Density w/in ¼ to ½ mile of a Activity Center
- Ratio of Housing Units to Population
- Ratio of Land Consumption to Population Growth
- Vehicle Miles Traveled
- Walkability Index

Additional Resources/Best Practices

Alternative Farming Information Center
http://afsic.nal.usda.gov
Around 15 percent of the world's food is now grown in urban areas. City and suburban agriculture takes the form of backyard, roof-top and balcony gardening, community gardening in vacant lots and parks, roadside urban fringe agriculture and livestock grazing in open space.

City of Charlotte, NC
http://charmeck.org/city/charlotte/Transportation/PlansProjects/Pages/Urban%20Street%20Design%20Guidelines.aspx

Charlotte Mecklenburg General Development Policies
http://charmeck.org/city/charlotte/planning/AreaPlanning/Plans/GDP/Documents/GDP.pdf

The Charlotte Mecklenburg General Development Policies are used to provide direction in developing future land use plans as well as in making rezoning decisions. They give direction in updating zoning and subdivision ordinances, and for integrating land use planning with capital facilities planning, particularly transportation planning. In addition, they guide future efforts to further integrate transportation and land use, particularly in developing an integrated, long-range plan.

Congress for New Urbanism/LEED for Neighborhood Development (LEED-ND)
www.cnu.org/leednd

CNU has partnered with the U.S. Green Building Council (USGBC) and the Natural Resource Defense Council (NRDC) to lay out a coordinated and powerful environmental strategy: sustainability at the scale of neighborhoods and communities. The joint venture, known as LEED for Neighborhood Development (or LEED-ND), is a system for rating and certifying green neighborhoods. LEED-ND builds on USGBC's Leadership in Energy and Environmental Design (LEED) systems, the world's best-known third-party verification that a development meets high standards for environmental responsibility. LEED-ND integrates the principles of new urbanism, green building, and smart growth into the first national standard for neighborhood design, expanding LEED's scope beyond individual buildings to a more holistic concern about the context of those buildings.

Congress for New Urbanism/Transportation Networks
www.cnu.org/networks
CNU has long recognized transportation as a key determinant of quality of urban form and community life. Transportation networks not only accommodate a region's access and mobility needs, but also help determine the location, type and form of land development. CNU seeks to create sustainable transportation networks that are planned in coordination with community planning and work to reduce household costs, traffic injuries and greenhouse gas emissions.

Congress for New Urbanism/Urban Thoroughfares Manual
www.cnu.org/streets
A new resource, Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, advances the successful use of context-sensitive solutions (CSS) in the planning and design of major urban thoroughfares for walkable communities. It provides guidance and demonstrates how context-sensitive design principles and techniques may be applied where community objectives support urbanism and smart growth: walkable,

connected neighborhoods, mixed land uses, and easy access for pedestrians and bicyclists. The manual is a partnership between the Institute of Transportation Engineers (ITE) and CNU. Under contract to the Federal Highway Administration (FHWA), the two organizations have created a context sensitive design guide dedicated exclusively to major thoroughfares in cities and towns.

Crystal Lake, IL
http://www.crystallake.org/index.aspx?page=365

Form Based Codes Institute
www.formbasedcodes.org
Form-based codes use physical form, rather than separation of land uses, as their organizing principle. They foster predictable results in the built environment and a high quality public realm. At best, design guidelines can recommend articulation and openings to the building's facade. In contrast, form-based codes conceptualize a public realm by pulling together the individual elements: the diverse street types, variety of public and private open spaces, and contextual building types into a complete, cohesive, and memorable place.

National Complete Streets Coalition
www.completestreets.org

The streets of our cities and towns are an important part of the livability of our communities. They ought to be for everyone, whether young or old, motorist or bicyclist, walker or wheelchair user, bus rider or shopkeeper. But too many of our streets are designed only for speeding cars, or worse, creeping traffic jams.

Now, in communities across the country, a movement is growing to complete the streets. States, cities and towns are asking their planners and engineers to build road networks that are safer, more livable, and welcoming to everyone. Instituting a complete streets policy ensures that transportation planners and engineers consistently design and operate the entire roadway with all users in mind - including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities.

Natural England/Green Infrastructure Guidance
http://naturalengland.etraderstores.com/NaturalEnglandShop/NE176
Natural England's Green Infrastructure Guidance articulates our position in relation to green infrastructure planning and delivery, which is increasingly recognized as an essential part of sustainable spatial planning. This is due in no small part to the role of green infrastructure as a 'life support system', able to deliver multiple environmental functions, and to play a key part in adapting to and mitigating climate change.

New York, NY
http://www.nyc.gov/html/dot/html/about/streetdesignmanual.shtml

Sacramento, CA
www.completestreets.org/webdocs/resources/cs-bestpractices-sacramento.pdf

Tacoma, WA
http://cms.cityoftacoma.org/Planning/CompleteStreets/CS_Project_Summary111709.pdf

The Conservation Fund/Green Infrastructure: Linking Landscapes and Communities
http://www.conservationfund.org/pubs_product_list/131
Green Infrastructure: Linking Landscapes and Communities by Mark A. Benedict and Edward T. McMahon is an illustrative review of advances in smart land conservation and large scale thinking that provides a green solution to many of the problems associated with sprawling development.

United States Environmental Protection Agency/Green Infrastructure Planning
http://www.epa.gov/greenkit/green_infrastructure_planning.htm
The Green Communities website is your portal to tools and information on the best strategies, programs and policies to reduce your environmental footprint. A 5-step environmental planning framework leads you to a greener, sustainable future.

Western Australia Planning Commission/Livable Neighborhoods Edition 3
www.planning.wa.gov.au/Publications/26.aspx
The Liveable Neighbourhoods Community Design Code provides an approach to the design of neighborhoods and towns that aims to achieve compact, better defined, and more sustainable urban communities. The Community Design Code encourages a wide variety of housing, a wide variety of local employment opportunity, a sense of community focused on walkable neighborhoods and towns, and support for public transit.

Water Resources

With the consumption of water continuing to increase, a by-product has been the straining of our sources of water supply - whether it is for domestic, commercial, industrial, or residential users. This has been further categorized by the United States Green Building Council, identifying the primary withdrawals of water from our supply due to thermoelectric power, irrigation, and being a primary source for buildings. In order to preserve and conserve water, one of our natural resources, the Water Resources working group has addressed objectives which monitor water as well as reduce consumption, improve water efficiency to reduce energy consumption in the water supply and wastewater infrastructure, and address water efficient landscaping. A critical component which is addressed is public education – the development of a water consumer awareness and outreach program.

Water Resources Goal I
Encourage Water Conservation

Water is not only critical for a sustainable population, it also is critical for a sustainable economy. While the Midwest has generally been considered water abundant, we must remember that water supply sources have finite capacities, especially with population growth and the degradation of existing water supply sources. In 2007, the Regional Water Supply Planning Group (RWSPG), along with the direction and facilitation of the Chicago Metropolitan Agency For Planning (CMAP), embarked on the development of Water 2050 Northeastern Illinois Regional Water Supply/Demand Plan. The March 2010 document projects a population increase of nearly 3,700,000 persons in the 11-county Northeastern Illinois region from 2000 – 2050. With this increase in growth, the planning document concluded portions of the region's water supply will reach critical levels by the year 2050 if the region does not change its water use habits. The city of Elgin shall utilize their position as a regional leader to demonstrate the benefits of water conservation within Northeastern Illinois. Water conservation will need to become part of the region's and the city's water supply management plan in order to maintain a sustainable source of water.

Objective 1
Encourage the use of WaterSense labeled water fixtures through the development of a fixture rebate program.

WaterSense (http://www.epa.gov/watersense/index.html) is a product labeling program developed by the Environmental Protection Agency (EPA), similar to Energy Star, but for water conservation.

Products labeled with a WaterSense label:

- Perform as well or better than their less efficient counterparts.
- Are 20 percent more water efficient than average products in that category.
- Realize water savings on a national level.
- Provide measurable water savings results.
- Achieve water efficiency through several technology options.
- Are effectively differentiated by the WaterSense label.
- Obtain independent, third-party certification.

Tasks/Metrics

1. Develop WaterSense labeled fixture rebate program by the end of 2011.
2. Have 100 fixtures replaced by the end of 2012.

Objective 2
Lead by example by installing WaterSense labeled fixtures in community facilities (i.e. Centre, City Hall, etc.) and educate residents of the benefits of water conservation through signage at the facilities.

Tasks/Metrics

1. Appropriately install WaterSense labeled fixtures in community facilities by the end of 2012.

Objective 3
Develop/enhance water conservation ordinance.

Tasks/Metrics

1. Utilize the expertise of the Northwest Water Planning Alliance (NWPA). Update ordinance by end of 2012.

Objective 4
Encourage use of automated lawn sprinkling systems that react to the weather conditions (i.e. do no sprinkle when precipitation levels are sufficient).

Tasks/Metrics

1. Include within a water conservation ordinance.

Objective 5
Perform water conservation community outreach to elementary schools by developing a water lesson for 3rd or 4th graders.

Tasks/Metrics

1. Develop water lesson by the end of 2011.
2. Reference the educational programs developed by the ISAWWA Water Efficiency Committee and the Village of Algonquin when developing the program for the City.
3. Coordinate With 25% of the teachers in 2012, 25% more in 2013, 25% more by 2014 and the final 25% by 2015.

Objective 6
Improve water consumer awareness of the amount of water they use, in an effort to reduce their water use.

Tasks/Metrics

1. Add measurable and simplified (gallons per day) historical water consumption values to water bills, and/or develop a water bill interpreter/calculator for the City's website by the end of 2011.

Objective 7
Develop water conservation based water rate structure that provides sufficient revenue to fund operational, maintenance and rehabilitation expenses.

Tasks/Metrics

1. Develop new rate structure by the end of 2012.

Objective 8
Reduce city of Elgin per capita water use by 17% as recommended by Elgin's Water Master Plan.

On average city of Elgin citizens use 114 gallons of water per day. This is 14% higher than the national average. According to the US EPA the average US citizen uses 100 gallons of water per day.

Tasks/Metrics

1. Reduce per capita water use from 114 gallons per capita per day (gpcd) to 94 gpcd by 2040.

Objective 9
Become a WaterSense partner

Tasks/Metrics

1. Become a partner by the end of 2011.

What is the NWPA?

The Northwest Water Planning Association NWPA represents 5 Council of Governments representing approximately 74 communities (including Elgin and Aurora) and 5 Counties (Kane, Kendall, McHenry, Lake and DeKalb). Elgin Mayor Ed Schock is on the executive committee along with other municipal representatives and the 5 County Board Chairman. The NWPA is dedicated to water planning and education and will likely take up the issue of a Model Water Ordinance for the 5 County Region, in the near future.

Water Resource Goal II
Educate residents about pollutants that affect Elgin's water supply.

The city of Elgin utilizes the Fox River for nearly 95% of its source of drinking water. The water quality within the Fox River and its tributaries directly affect the level of treatment required prior to the water distribution to the city of Elgin Water Works System users. By educating residents about pollutants that affect our water supply, the City will minimize its costs for water treatment.

Objective 1
Develop pharmaceutical recycling program.

Currently there are only two pharmaceutical drop-off locations near Elgin:

Naperville Fire Station #4
Corner of Rt. 59 and Brookdale (1/2 mile south of I-88)
Saturdays and Sundays
9 am. to 2 pm, excluding holidays.

Fox Metro Water Reclamation District
682 Route 31, Oswego
630-301-6820
Monday - Friday
8:00 am to 5:00 pm.

This objective recommends the establishment of drop-off centers within Elgin. By making proper disposal of pharmaceuticals more convenient, Elgin can make its water cleaner and safer.

Tasks/Metrics

1. Install one permanent drop off box soon after ESAP adoption.
2. Have five (5) installations by 2015.
3. Post map of drop-off locations on the City's website.

Objective 2
Provide water quality information within quarterly newsletters.

Tasks/Metrics:

1. Include at least one article in each quarterly newsletter.

Objective 3
Provide water quality educational information on water bills.

Tasks/Metrics

1. Develop water quality topic/comment for each billing cycle by 2012.

Objective 4
Encourage proper use of fertilizers and lawns and gardens.

Tasks/Metrics

1. Include as note on water bill and within newsletter by end of 2012.

Objective 5
Perform water quality community outreach to elementary schools by developing a water lesson for 3rd or 4th graders.

Tasks/Metrics

1. Include water quality section within water lesson. See water conservation section for implementation schedule.

Objective 6
Improve water quality connection community awareness with symbolic storm sewer castings.

Tasks/Metrics

1. Adopt casting standard for new developments and rehabilitation projects that include water quality symbols (i.e. fish) and/or statement (i.e. discharges to waterway) by 2011.
2. Partner with local youth organizations (i.e. Boy Scouts and Girl Scouts) to stencil existing castings by the end of 2012.

Objective 7
Discourage the disposal of automotive liquids into storm drains.

Tasks/Metrics

1. Include as topic within City newsletter.
2. Post map of drop-off locations on City's website by the end of 2011.

Objective 8
Promote expanded household hazardous waste drop-off locations.

Tasks/Metrics

1. Include as topic within City newsletter.
2. Post map of drop-off locations on City's website by the end of 2011.

Objective 9
Integrate educational signage into the Riverfront Esplanade project that explains the importance of the Fox River to the city of Elgin.

The Fox River is the main source of the city's drinking water, it is home to several species of fish, mussels, macro invertebrate and provides habitat for several other living creatures.

Tasks/Metrics

1. Include signs within the project construction documents.

Objective 10
Maintain memberships, and actively participate, within water quality based organizations (i.e. Friends of the Fox, Fox River Study Group, Fox River Ecosystem Partnership, etc.)

Tasks/Metrics

1. Maintain memberships and actively participate.

Water Resources Goal III
Improve water quality throughout Elgin's waterways

The city of Elgin lies within the watersheds of several important waterways, namely: the Fox River, Tyler Creek, Poplar Creek and Ferson Creek. The water quality within these waterways is important for passive and active recreation and the ecological health of the city's watersheds, as well as, their connection to, or as the direct source of, the city's drinking water (the Fox River currently provides 95% of the source of the city's drinking water). While these waterways generally are in good health, several are considered impaired by the Illinois Environmental Protection Agency (IEPA). Water quality improvement in these waterways will have direct benefits for the city's source of water supply, as well as, the benefits healthy watersheds and waterways bring to a sustainable community.

Objective 1
Supplement the County/City's stormwater ordinance by adding language that supports the use of green infrastructure such as bioswales, rain gardens, permeable pavers and other best management practices, focusing on the downtown and new developments

Tasks/Metrics

1. Develop stormwater ordinance amendments by the end of 2013.

Objective 2
Promote river and local waterway clean-up days.

Tasks/Metrics

1. Develop partnerships with organizations (i.e. Boy Scouts, Girl Scouts, high school environmental clubs, church groups, etc.) to establish clean-up days on major waterways by the end of 2011.

Objective 3
Develop rain garden cost-share program.

Tasks/Metrics

1. Develop program and help fund 10 rain gardens program year 1.
2. Work towards goal of funding 20 rain gardens in program year 2.

Objective 4
Install xeriscape gardens with signage at high visibility areas (i.e. Centre, City Hall, etc.) and promote native plant usage in all designs.

Xeriscape gardening is a method of gardening that strives to conserve water through the use of native, drought resistant plantings, utilizing natural drainage patterns, limiting turf area and utilizing larger shrubs and trees for natural shading effects.

According to EarthEasy.com, the benefits of xeriscape gardening include:

- Saving Water. Xeriscape can reduce landscape water use by 50 - 75%.
- Less Maintenance. Aside from occasional pruning and weeding, maintenance is minimal. Watering requirements are low, and can be met with simple irrigation systems.
- No Fertilizers or Pesticides. Native plantings eliminate the need for chemical supplements.
- Improves Property Value. A good Xeriscape can raise property values which more than offset the cost of installation. Protect your landscaping investment by drought-proofing it.
- Pollution Free. Fossil fuel consumption from gas mowers is minimized or eliminated with minimal turf areas. Small turf areas can be maintained with a reel mower.
- Provides Wildlife Habitat. Use of native plants, shrubs and trees offer a familiar and varied habitat for local wildlife.

Tasks/Metrics

1. Install one (1) garden in a highly visible public location by the end of 2011.
2. Strive to install five (5) gardens by the end of 2015.

http://www.northbrookfield.net/images/Xer-Lg-1.jpg

Objective 5
Continue the City's detention basin retrofit program* which modifies the construction of the outdated detention basins which provide limited to no water quality benefit, to newer designs that incorporate stormwater treatment components

*See Appendix B—Existing Elgin Initiatives for more information

Tasks/Metrics

1. Attempt to convert at least one basin per year until all the appropriate basins are converted (as funding allows)

Objective 6
Institute recommendations within the City's Long Term Control Plan with the goal of separating the storm and sanitary sewers in all parts of the city and removing the City's 4 Combined Sewer Overflows (CSOs).

Tasks/Metrics

1. Complete the recommendations within the Long Term Control Plan in accordance with the USEPA approved timeline.

Objective 7
Continue to implement "sensible salting" recommendations to reduce chloride levels within surface waters and the shallow groundwater.

The "sensible salting" recommendations, as developed by the DuPage River Salt Creek Workgroup, are as follows:

- Provide proper training of road salt applicator staff and public education to build community awareness.
- Conduct regular equipment maintenance and calibration.
- Ensure proper salt storage, handling and transport.
- Explore greater reliance on anti-icing and deicing (e.g. pre-wetted road salt) practices.
- Pursue judicious use of alternative deicing chemicals, including organic deicers such as those based on corn or beet derivatives.
- Monitor salt use to determine program effectiveness.

Tasks/Metrics:

1. Inclusion of compliance with 'sensible salting' recommendations within the annual snow removal report to the City Council.

Additional Resources/Best Practices

Chicago Metropolitan Agency for Planning (CMAP) Model Water Conservation Ordinance
http://www.cmap.illinois.gov/water-2050

City of Titusville, Florida
http://www.titusville.com/Page.asp?NavID=839

Offers a variety of water conservation programs to reduce residential water use. Programs include free faucet aerators, a shower head exchange program and a toilet retrofit rebate program.

Kansas City Missouri - 10,000 Rain Garden program
(http://www.rainkc.com/)
A regional effort dedicated to educating citizens about improving water quality and managing stormwater on public and private property.

Las Virgenes, California Municipal Water District
http://www.lvmwd.com/index.aspx?page=1
Participates in Southern California's SoCal Water$mart Program and provides
50 Ways to save H20 (http://www.lvmwd.com/index.aspx?page=129)

Madison Wisconsin - 1,000 Rain Garden program
(http://www.cityofmadison.com/engineering/stormwater/raingardens/1000raingardens.cfm)

This initiative spreads awareness and celebrates newly added rain gardens. A city-wide map is provided displaying each rain garden within the city. Citizens are encouraged to share photos of their rain garden.

Southern California Water$mart Program
http://socalwatersmart.com/index.php
A regional rebate program that offers residential water customers rebates for high-efficiency clothes washers, rotating sprinkler nozzles and weather-based irrigation controllers

Village of Algonquin, Illinois
http://www.algonquin.org/egov/docs/1210879749_230529.pdf
Provides an example of watering restrictions as well as outreach methods. Algonquin utilizes a green, yellow, orange, red notification system, letting residents know which regulations are in effect. Changes in color (regulations) are communicated via signage along roads as well as Algonquin's website.

Elkhart County Indiana - Rain Barrel and Rain Garden Incentive program
(http://www.stormwaterelkco.org/index.php)
Established a rain barrel/rain garden incentive program. The program was funded at $10,000 and reimbursed residents up to $250 per rain garden and $50 per rain barrel (up to 2 barrels) until funds were exhausted.

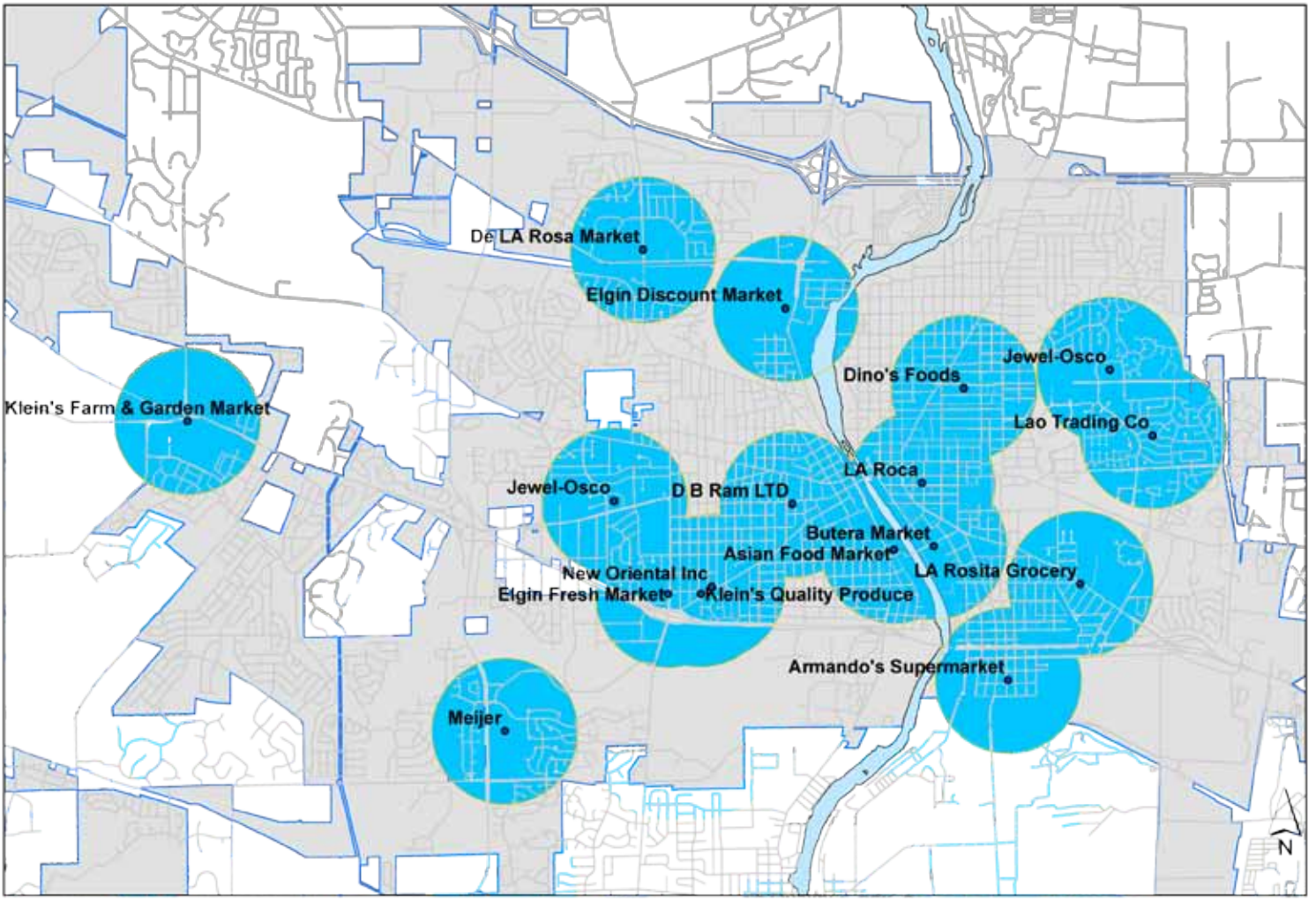
Stormwater Ordinance Model Albemarle County, Virginia,
http://www.epa.gov/owow/nps/ordinance/documents/D2b-Ablemarle.pdf

Appendix A
Elgin Environmental Research

To gain a better understanding of the environment Elgin is located in, certain objective data was measured. Where applicable, graphs, charts or tables will be presented regarding Elgin's environment. These figures are helpful in identifying trends and setting goals.

Walkable Access to Fresh Food

Part of increasing the quality of life for Elgin citizens is ensuring that there is access to fresh food, within walking distance. Striving for walkable food access reduces the use of the personal automobile, but also increases the likelihood that citizens will par-take in fresh produce and rely less on processed foods. The graph below illustrates fresh food vendors (defined at a minimum as selling fresh produce) with a .25 mile buffer, meant to illustrate walking distance.



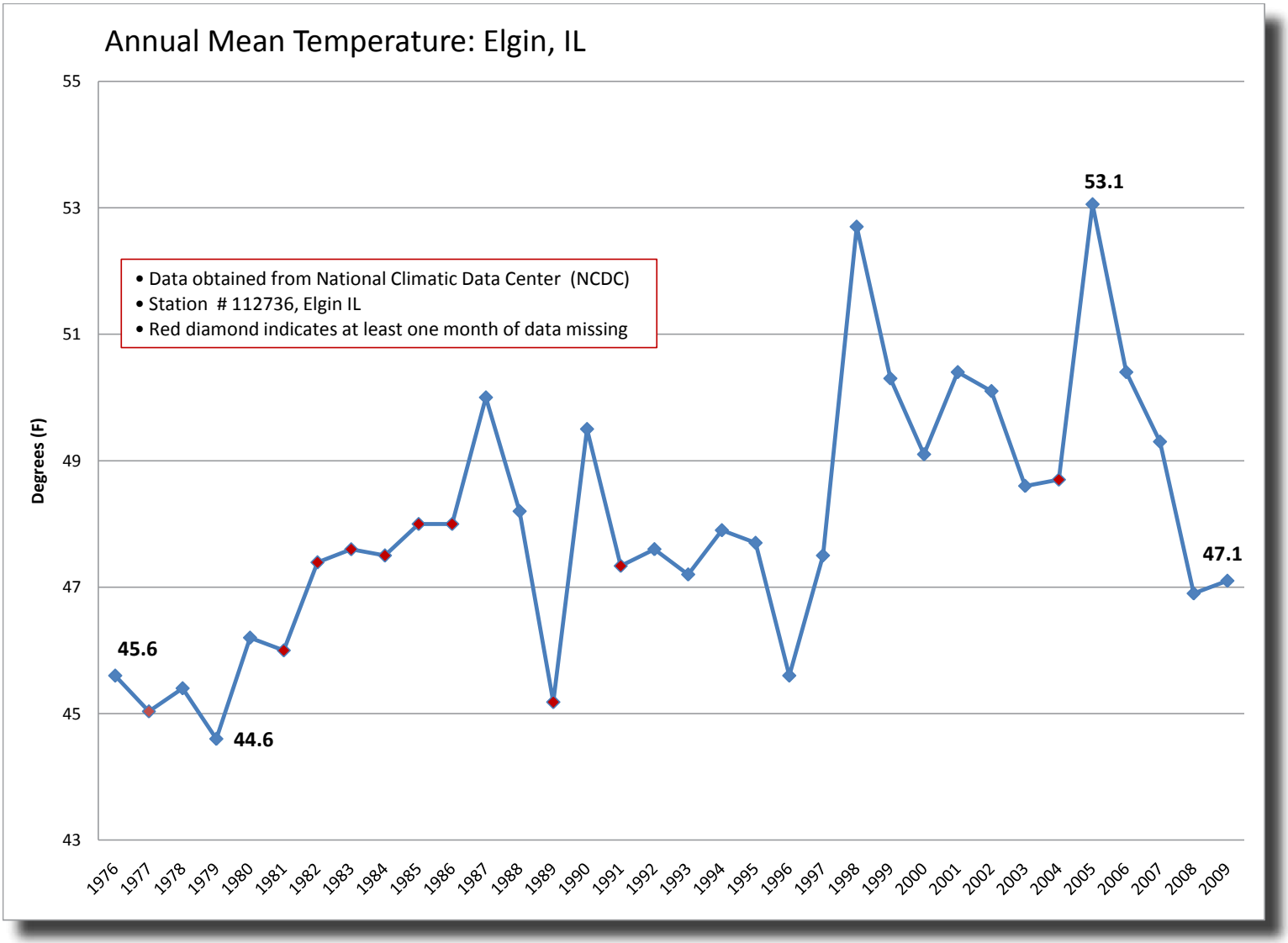
Walkable Access to Fresh Food

Map prepared by City of Elgin
Office of Sustainability

1/2 Mile Boundary
Municipal Boundary

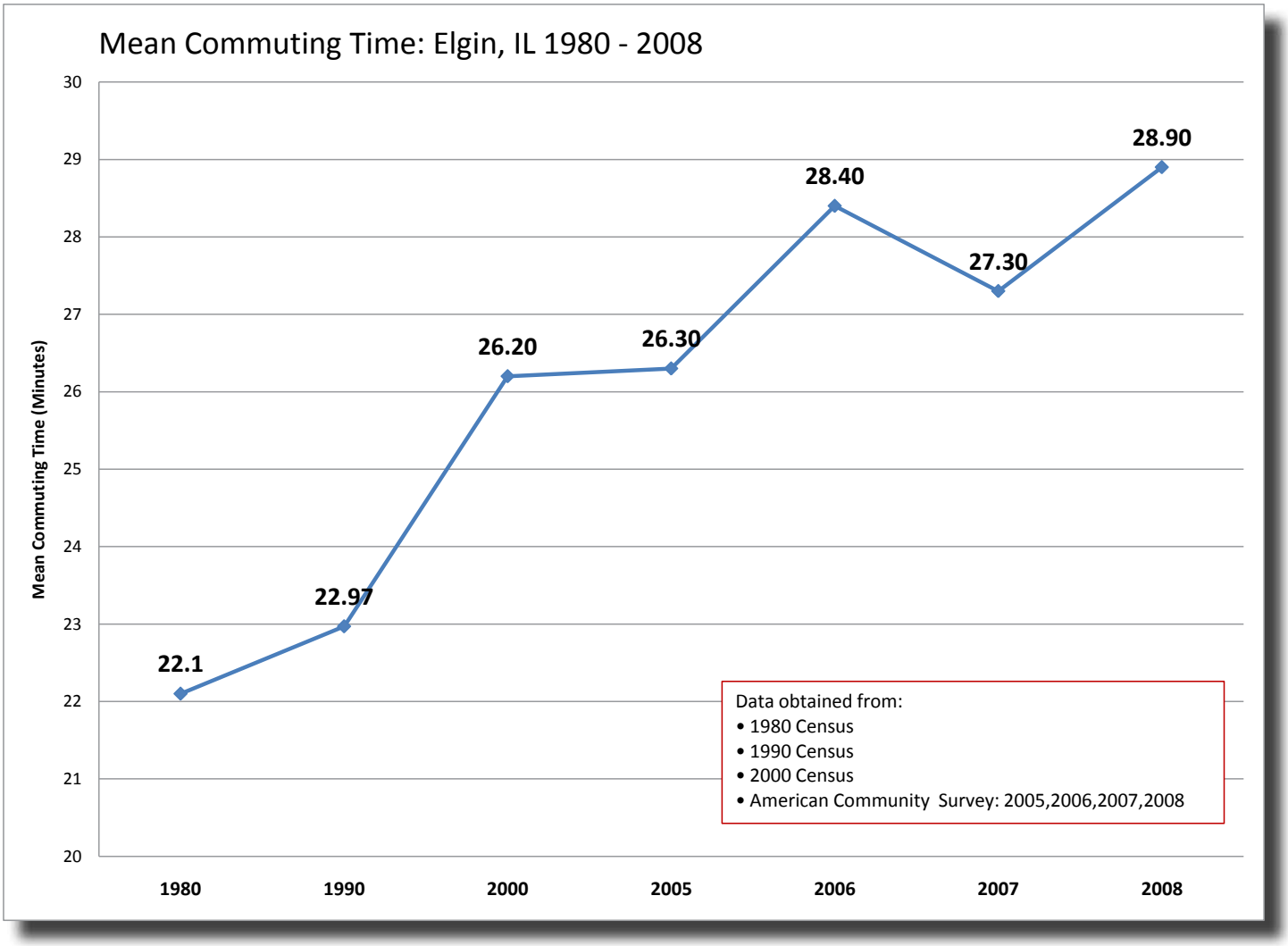
Average Annual Mean Temperature

Rising global temperatures are commonly referred to in the media and other environmental publications. But what about locally? The graph below illustrates Elgin's mean temperature from 1976—2009. The graph indicates that the temperatures have fluctuated and seems to be on an upward trend. While it would be difficult to craft a strategy to specifically address "rising local temperatures," it is still an important and interesting indicator to monitor.



Average Commuting Time

The graph below illustrates the mean commuting times of Elgin residents in minutes. The upward trend indicates Elgin citizens are spending more of their time commuting to work than in the past. Ride sharing programs have the potential to reduce the amount of cars on the road. With fewer cars on the road there may be less traffic congestion, thus reducing the amount of time it takes Elgin citizens to get to and from work.



303(d) Listed Water Courses

When a watercourse or segment of a watercourse does not meet the standards of Section 303(d) of the federal Clean Water Act, it is classified as impaired. Steps must then be taken to reduce the pollutants found within the water. Below is a list of 303(d) listed water courses in and around Elgin. While the Fox River is listed, it is important to remember that Elgin's drinking water goes through a vigorous treatment process and is not impaired. Inclusion on this list however does mean that there could be negative effects on wildlife and aquatic ecosystems.

2010 303(d) Listed Water Courses in and around Elgin

Water Name	Segment	County	HUC - 10	Priority	Miles/Acres	Designated Use	Impairment
Ferson Creek	DTF-02		712000701	Medium	14.57	Primary Contact Recreation	Fecal Coliform
Fox River	DT-18		712000612	Medium	7.2	Fish Consumption	Polychlorinated biphenyls
Fox River	DT-18		712000612	Medium	7.2	Fish Consumption	Mercury, Polychlorinated biphenyls
Fox River	DT-18		712000612	Medium	8.03	Aquatic	
Fox River	DT-06	McHenry	712000612	Medium	8.03	Aquatic Life	pH
Fox River	DT-06	McHenry	712000612	Medium	8.03	Fish Consumption	Polychlorinated biphenyls
Fox River	DT-06	McHenry	712000612	Medium	8.03	Primary Contact Recreation	Fecal Coliform
Fox River	DT-03		712000701	Medium	7.39	Aquatic Life	Aldrin, sedimentation/siltration, total suspended solids, pH, phosphorus
Fox River	DT-03		712000701	Medium	7.39	Fish Consumption	Mercury, Polychlorinated biphenyls
Fox River	DT-03		712000701	Medium	7.39	Primary Contact Recreation	Fecal Coliform
Fox River	DT-09	Kane	712000701	Medium	8.11	Aquatic Life	Hexachlorobenzene, methoxychlor, phosphorus
Fox River	DT-09	Kane	712000701	Medium	8.11	Fish Consumption	Polychlorinated biphenyls
Fox River	DT-09	Kane	712000701	Medium	8.11	Primary Contact Recreation	Fecal Coliform
Fox River	DT-38	Kane	712000701	Medium	10.83	Aquatic Life	Total suspended solids, pH, phosphorus
Fox River	DT-38	Kane	712000701	Medium	10.83	Fish Consumption	Mercury, Polychlorinated biphenyls
Fox River	DT-38	Kane	712000701	Medium	10.83	Primary Contact Recreation	Fecal Coliform
Fox River	DT-38	Kane	712000701	Medium	10.83	Public Water Supplies	Chloride
Fox River	DT-58		712000701	Medium	3.74	Fish Consumption	Mercury, Polychlorinated biphenyls
Fox River	DT-69		712000701	Medium	4.49	Aquatic Life	Methoxychlor, sedimentation/siltation, pH, phosphorus
Fox River	DT-69		712000701	Medium	4.49	Fish Consumption	Mercury, Polychlorinated biphenyls
Fox River	DT-69		712000701	Medium	4.49	Primary Contact Recreation	Fecal Coliform
Poplar Creek	DTG-02		712000612	Medium	15.45	Aquatic Life	Chloride, total suspended solids, PH
Poplar Creek	DTG-02		712000612	Medium	15.45	Primary Contact Recreation	Fecal Coliform
Tyler Creek	DTZP-02		712000612	Medium	14.34	Primary Contact Recreation	Fecal Coliform

Air Quality

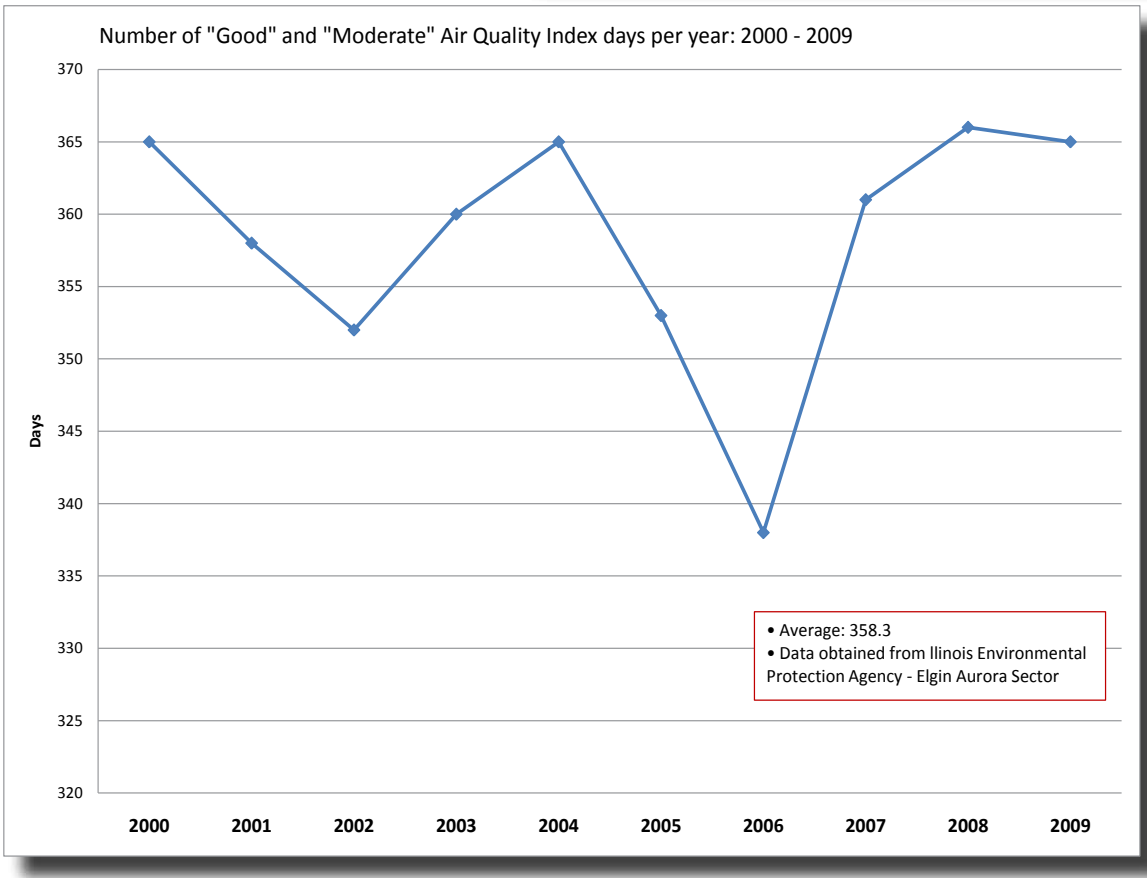
Everyday we breath air. However the air we breath varies from day to day regarding the amount of pollutants and irritants. To monitor this the US EPA has developed the Air Quality Index or AQI. The AQI is a rating system that lets the public know how healthy the air is on any given day. According to the EPA, "the higher the AQI value, the greater the level of air pollution and the greater the health concern. For example, an AQI value of 50 represents good air quality with little potential to affect public health, while an AQI value over 300 represents hazardous air quality."

AQI values of 100 "generally corresponds to the national air quality standard for the pollutant, which is the level EPA has set to protect public health. AQI values below 100 are generally thought of as satisfactory. When AQI values are above 100, air quality is considered to be unhealthy-at first for certain sensitive groups of people, then for everyone as AQI values get higher" (US EPA).

The rating system is displayed to the right:

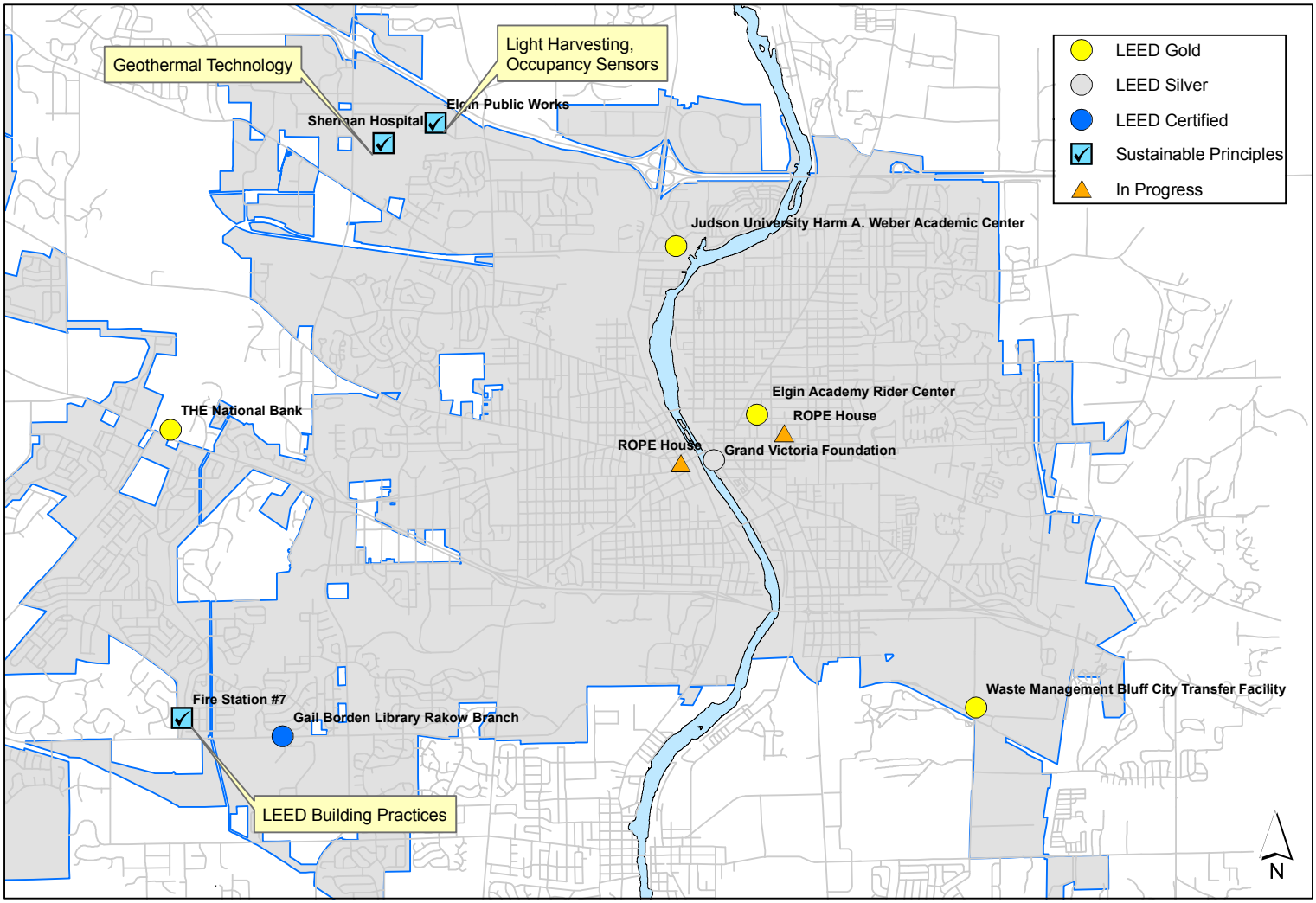
Air Quality Index (AQI) Values	Levels of Health Concern	Colors
When the AQI is in this range:	*...air quality conditions are:*	*..as symbolized by this color:*
0-50	Good	Green
51-100	Moderate	Yellow
101-150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Elgin's air quality was looked at using the AQI. The graph below displays the number of "Good" and "Moderate" air quality days over time. Since 2000 over 330 days per year have been "good" to "moderate" air quality days in Elgin, with 2006 being the only year with less than 340 days with AQI scores under 100. Of the years studied all years saw over 280 "Good" days, meaning that 76% of the days over the last nine years have been "good" air quality days.



Green Building Stock

Elgin is home to many “green” buildings that have incorporated sustainable building practices, several of which have obtained LEED certification. Below some of the larger sustainable building projects have been identified.



City of Elgin "Green" Buildings

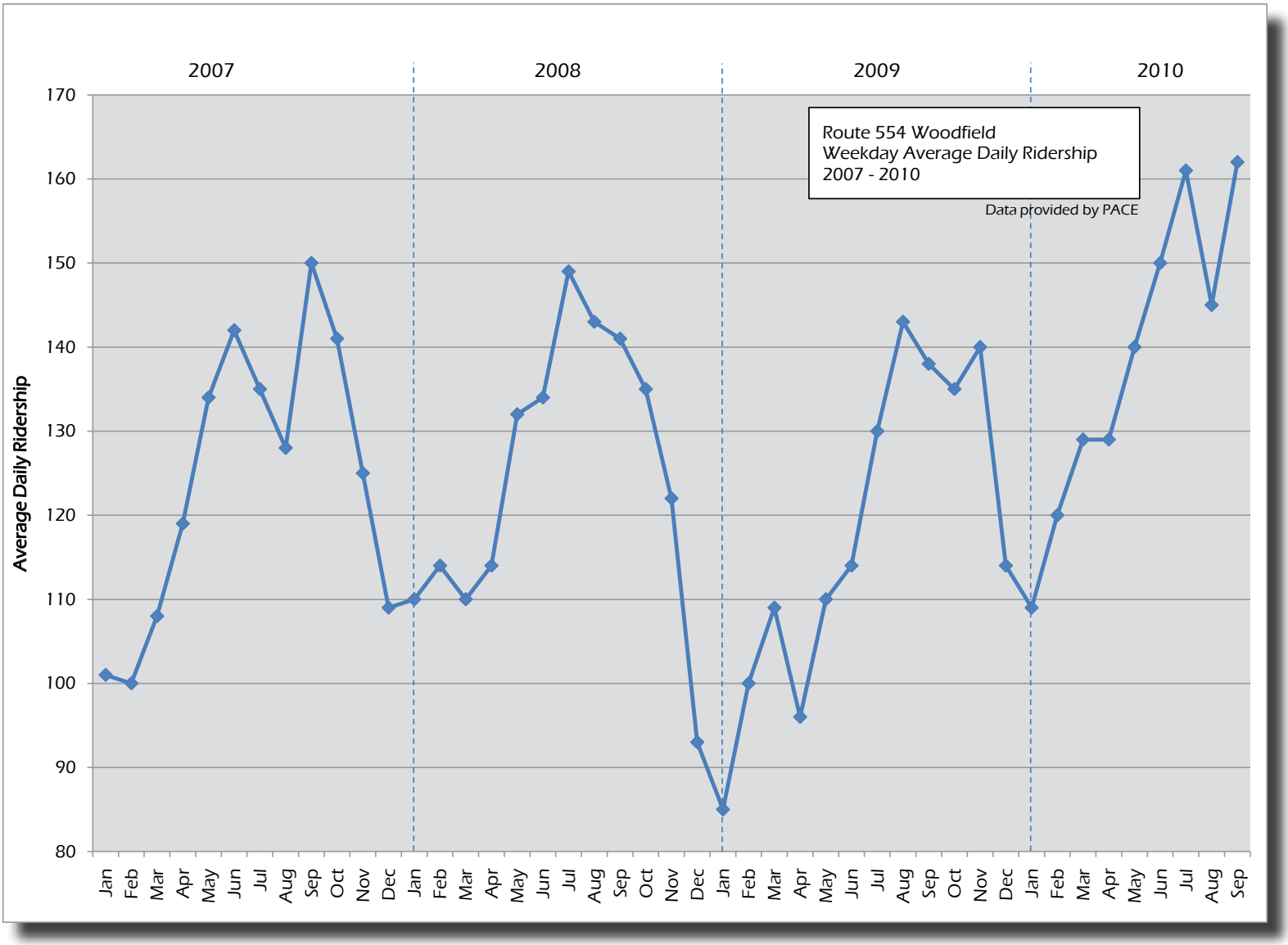
Map prepared by City of Elgin
Office of Sustainability - August 2010

Pace Ridership

Efforts by the city of Elgin and PACE to study and increase PACE ridership are being made. A large part of this effort involves establishing baseline ridership levels. This way concerted efforts can be made to improve those routes in the greatest need. Below are selected graphs illustrating the average daily ridership numbers for each route in Elgin for 2007,2008, 2009 and 2010 through September.

Route 554 is a regional route that serves Elginites, transporting them to Woodfield Mall from which they can connect to other PACE routes that connect to many northern suburbs. Route 554 also has the lowest ridership of all Elgin routes. Though it is trending upwards in 2010.

This is attributable at least in part to the route 554 Committee's (a regional partnership committee on which Elgin sits) efforts. Their efforts appear to be paying off.

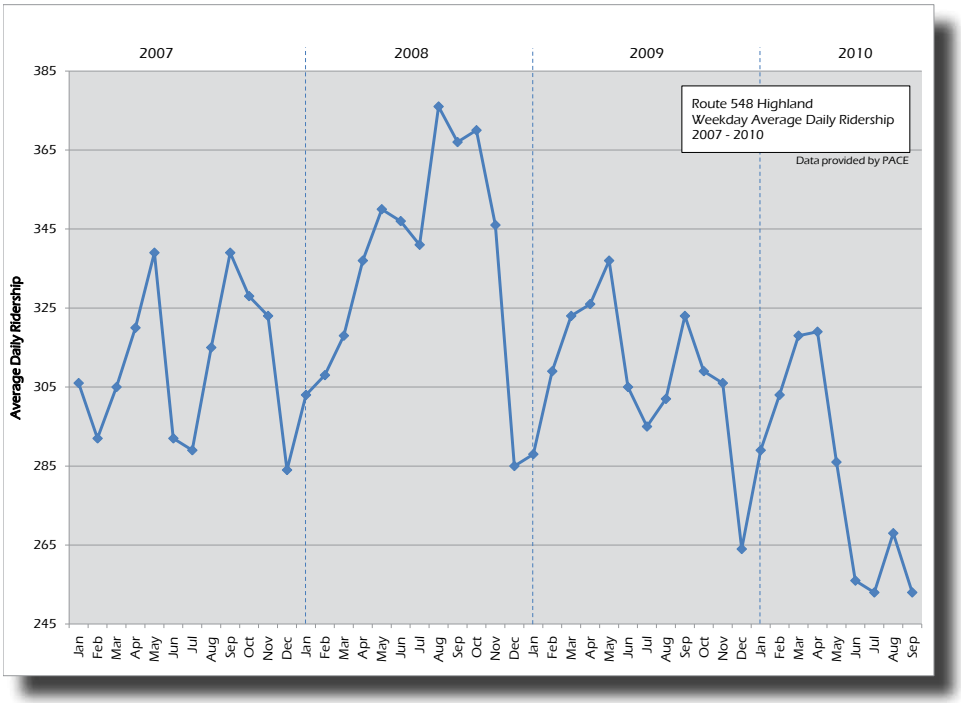


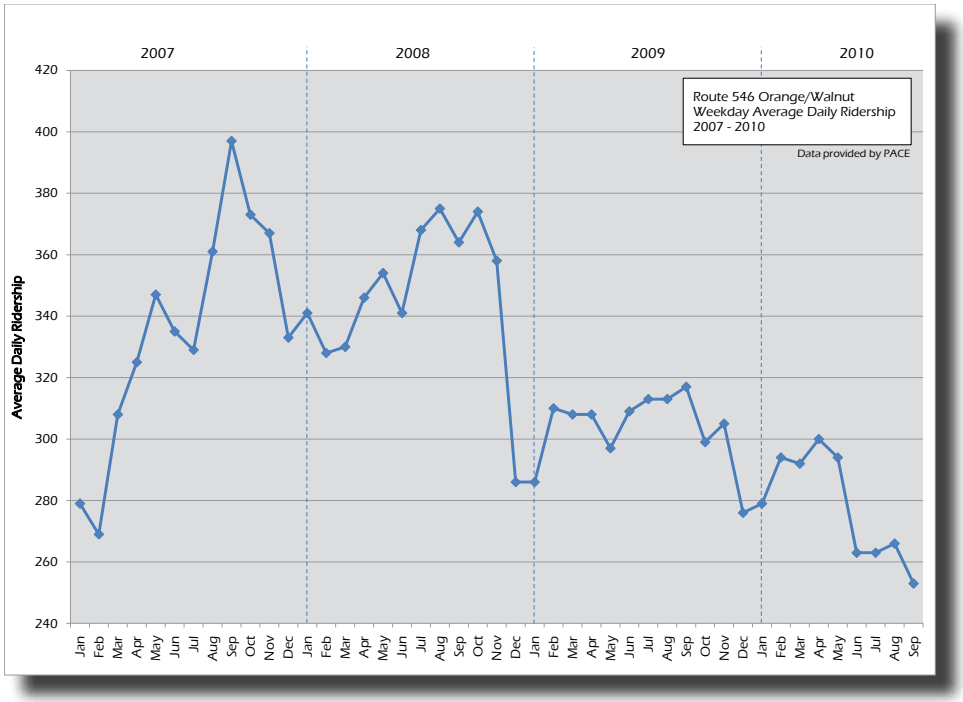
Pace Ridership (Continued)

PACE Route 548 (top) which serves Highland Avenue and parts of Larkin Avenue and route 546 (bottom) which serves the southwest area neighborhoods both have relatively high ridership for Elgin routes, however they have been trending downward during 2010.

These routes represent prime candidates for a ridership campaign. Such a campaign would consist of rider surveys, the establishment of incentives to ride, possibly installing additional bus shelters among strategies.

Efforts to make this, and other downward trending routes, more attractive to Elginites should be made in collaboration with PACE.





Appendix B
Existing Environmental Initiatives

Lighting Upgrades

Public Works Building

In 2009-2010 the Public Works Facility increased its lighting efficiency in its garage and office area. The project was funded with $200,000 from the Energy Efficiency Community Block Grant (EECBG) and $82,000 from Illinois Department of Commerce and Economic Opportunity (DCEO).

The project involved a reduction in lighting density, the addition of occupancy sensors, and daylight harvesting (sun tubes) in the garage area with photo sensors to optimize their use.

In the office area, 294 lighting fixtures (4 lamp T12) were removed and replaced with 201 new lighting fixtures (2 lamp T5). With the addition of occupancy sensors and dimming ballast it is expected to reduce the hours that the lights are on by about 30%, reducing usage by almost 90,000 KWH per year in the office area.

In the garage, 198 (400W) high-bay metal halide light fixtures were removed and 198 new (4 lamp T5) high-bay fluorescent fixtures were installed, reducing the wattage by more than half. 149 sun tubes were added in the garage area to allow for the use of natural sunlight to light the garage area. On a sunny day these units provide sufficient lighting for the garage. The sun tubes should reduce the operating hours of the lights by approximately 25% and a total reduction of almost 140,000 KWH per year in the garage area is anticipated.

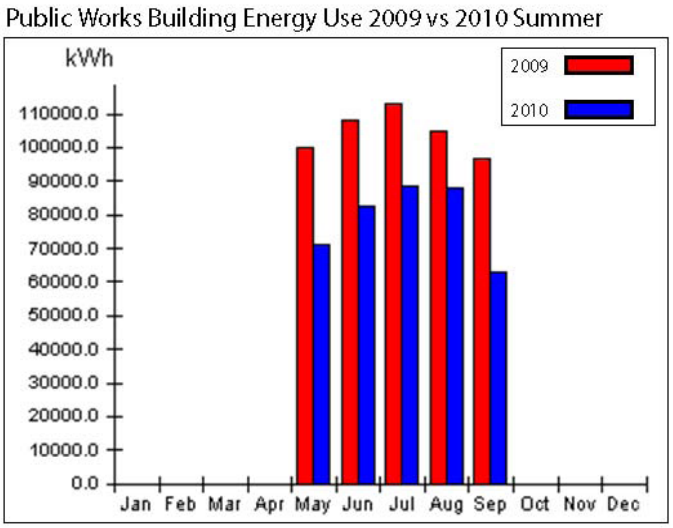
Chamber of Commerce Building

In early May 2011, through DCEO's Public Sector Electric Efficiency program a lighting upgrade was completed at the Elgin Area Chamber of Commerce building, 31 S. Grove Ave. The project was 75% funded by the State and saw the replacement of 169 T12 fixtures with higher efficiency T8 fixtures. Since the retrofit the building has seen an average electricity reduction of 28%.

Eastside Recreation Center

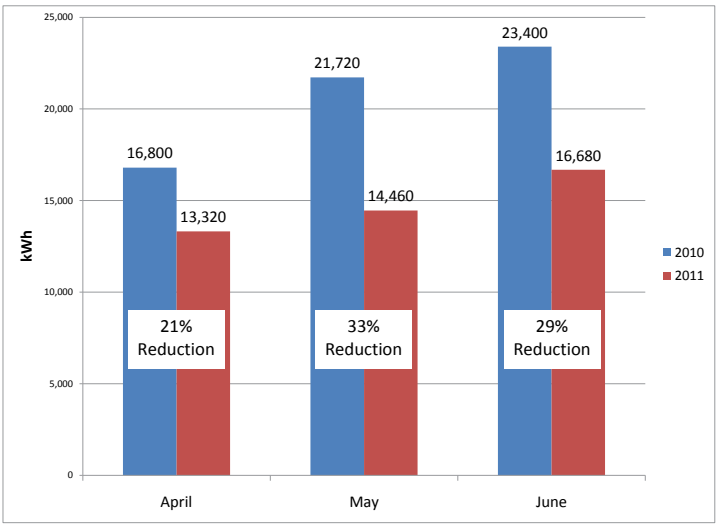
In April 2011, through DCEO's Public Sector Electric Efficiency program a lighting upgrade was completed at the Eastside Recreation Center, 1080 E. Chicago St. The project was 65% funded by the State and saw the replacement of 230 fixtures with higher efficiency fixtures.

The project is expected to save 135,000 kWh annually which will save approximately $13,000 per year. To put the environmental impact in perspective, the energy savings is equivalent to planting 25 trees, removing 22 cars from the road, saving 11,000 gallons of gas or not using 265 barrels of oil.



Note decreased energy usage during summer of 2010.

Sunlight harvesting tube (circle) vs traditional light fixture (rectangle)



Chamber Building Energy Use April to June Comparison

Pharmaceutical Medicine Disposal

Beginning in 2011 the city of Elgin Police Department began accepting unused and expired prescription and over the counter medications. City of Elgin residents can drop off their medications in the main lobby of the police department.

Upon collecting the medications the city ships the medication out to be incinerated. Elgin is proud to offer this service as it lowers the chance prescription drugs end up in the wrong hands and helps keep our water supply free from unwanted pollutants.

TRIB local Elgin

Elgin creates medicine drop-off spot

Community Gardens

Elgin is home to many community gardens. Community members have taken an active role in promoting healthy and local eating, teaching residents proper gardening techniques and most importantly getting kids involved.

More information on Elgin's community gardens can be found at:
http://elgincommunitygardens.org/index.php

Electronics Recycling

Beginning summer 2011 the city of Elgin will be accepting electronic waste at its Waste Management Elgin site, 7N904 Rt. 25. Run by Waste Management this drop off center will be free for the community to safely and efficiently dispose of its e-waste. E-waste can also be dropped of at Habitat ReStore, 800 North State Street, Elgin, IL 60120.

Elgin residents are able recycle their electronics through Kane County's E-cycling events, held monthly at the Kane County Clerk's Office, 540 S. Randall Road, St. Charles, IL.

More information can be found online at:
http://www.co.kane.il.us/Environment/recycle/electronic.htm

ComEd Community Energy Challenge

The city of Elgin participated in the ComEd Community Energy Challenge along with 10 other communities throughout northern Illinois from January 2009 - May 2010. The competition encouraged communities to actively engage their citizenry and business community to reduce their energy consumption and increase their energy efficiency via ComEd and the Department of Commerce and Economic Opportunity (DCEO) incentives. Through these incentive programs, Elgin's business and non-profit community is set to receive an estimated $446,870 in incentives and their energy efficiency projects will result in an estimated 6,340,208 kWh of electricity savings (i.e., electricity reductions in one year).

Elgin residents have also been able to reduce their energy use both through incentive programs and the City's efforts. Programs include real time pricing, A/C cycling, appliance trade-in and electrical tune ups and upgrades.

The City has also been actively giving away energy efficient compact fluorescent light bulbs (CFL's) and participated in a "holiday light" trade-in program in which citizens traded in their older holiday lights for more efficient LED holiday lights. Thus far over 10,000 CFL bulbs and over 40 boxes of holiday LED lights have been given out to citizens.

Energy Efficiency Community Block Grant

The city of Elgin was fortunate enough to be allocated $1,002,600 in stimulus funding to undertake projects that will increase the City's environmental and financial sustainability. These projects chosen represent Elgin's commitment to finding the most efficient uses of grant money, energy efficiency, modeling the way to sustainability, public/private partnerships and exceptional service delivery to its citizens.

A complete list of the projects funded through the EECBG can be found here: http://cityofelgin.org/index.aspx?NID=1158

Two programs projects are highlighted below.

Residential Revolving Loan Program
http://www.cityofelgin.org/index.aspx?NID=1067

Provides loans to property owners to make energy efficient improvements to their properties. Owners receive a building audit, upgrades based on what audit results and a follow up audit to verify energy saved. Created to assist homeowners with weatherization upgrades, energy star appliance purchases, insulation and windows. The application period for 2010 ended April 30. More than 20 homeowners applied for the program, all of which receive a free energy audit. Then, depending on cost of work funding will be allocated. It is estimated 15 citizens will be funded this year.

Center City Commercial Grant Program
This grant program provides matching funds (50% of cost) to assist commercial property owners with retrofitting their existing buildings for energy efficiency within the CC1 and CC2 Center City zoning districts. Energy Efficiency retrofits include but are not limited to the following; heating, cooling, lighting, refrigeration, water reduction, windows and insulation improvement to walls and roofs (including painting rooftops white).

LED Traffic Signals

In 2004 all City-owned traffic signals have been replaced with higher efficiency LED lights, reducing energy consumption by over 90% and lowering maintenance costs.

ComEd Smart Ideas Campaign

In 2009 and 2010 Elgin City staff presented to over 30 business owners regarding its energy efficiency loan programs as well as Commonwealth Edison’s Smart Ideas incentives.

Household Hazardous Waste Disposal

Residents can safely dispose of hazardous chemicals such as oil-based paint, pesticides, pool chemicals, sealants, and more free of charge! Residents can call the Household Hazardous Waste Hotline at (800)-HHW-PKUP (449-7587) to arrange to have these items picked up from their home.

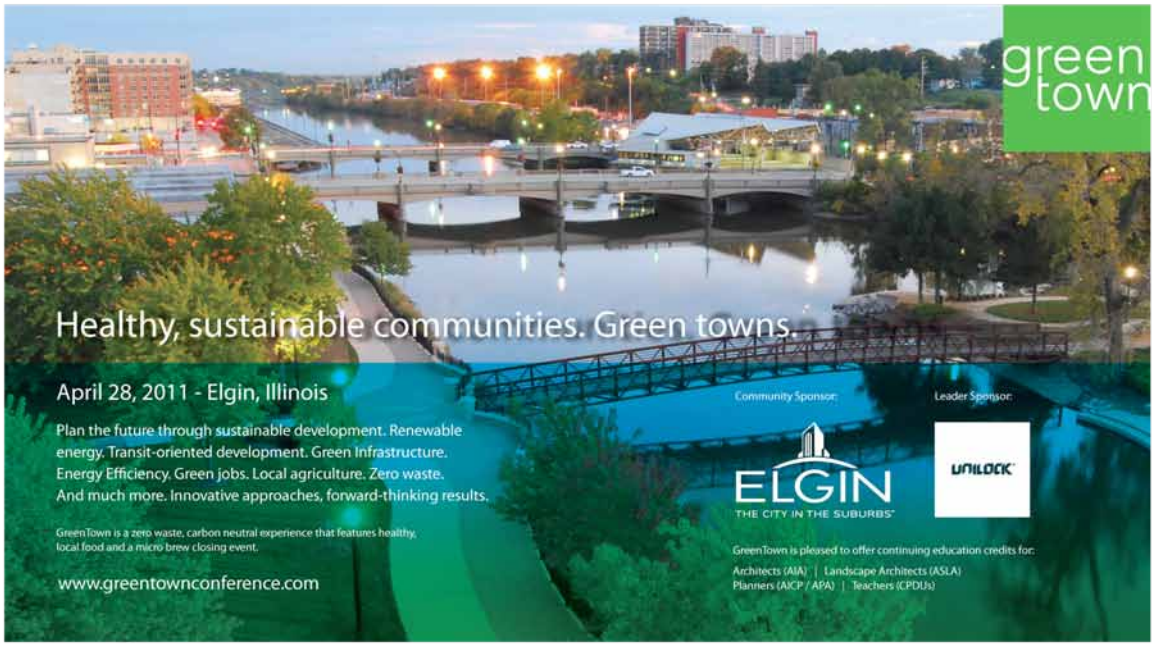
Sustainability Conferences

In April of 2010, The city of Elgin collaborated with Northern Illinois University to host the first annual Sustainable Governance Conference.
http://www.sustainableconference.niu.edu).

This conference, directed towards local government entities, allowed attendees to hear a variety of speakers, interact with vendors and learn best practices for sustainability.

In May 2010, The city of Elgin hosted their second sustainability conference with the Elgin Climate Change Organization (ECCO). The 2nd Annual Elgin Green Expo (http://ecco-foxvalley.net/blog/elgins-green-expo/) featured information for homeowners about gardening, retrofitting homes and sustainable living. An estimate 3,000 visitors attended the event. A third ECCO Green Expo will take place in May, 2011.

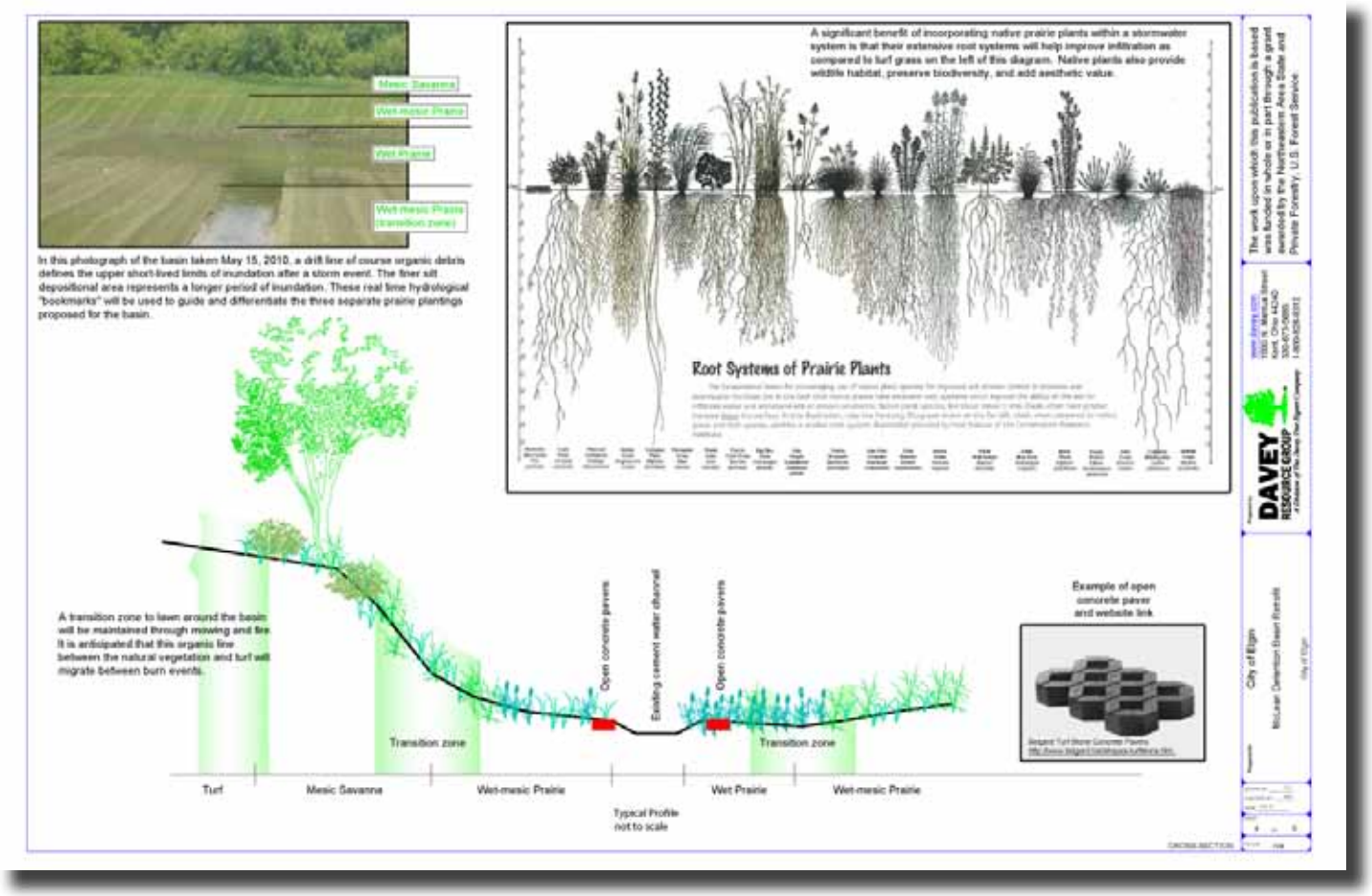
GreenTown: In April 2011 the City is hosting GreenTown, a one-day event promoting the creation of healthy sustainable communities. This prestigious event will provide a range of expert in the fields of sustainability, ecological sciences, energy efficiency and urban design. Speakers include Randall Arendt, advocate of "conservation planning," Mayor Bob Dixson of Greensburg, Kansas and Dr. Richard Jackson, Chair of the School of Environmental Health Sciences at UCLA.



Detention Basin Retrofitting

Elgin owns and maintains several stormwater detention facilities designed specifically for flood control. These basins include concrete channels, constructed to prevent the bottoms of the basins from becoming soft and wet so they can be mowed by maintenance staff. While a common design years ago, this channelized design is outdated and provides little to no water quality benefits. Elgin is now working on retrofitting these basins to cut down on maintenance needs and provide a water quality benefits to the community.

In 2010 the Elgin engineering department began one such retrofitting project, at the corner of McLean Blvd and Holmes Rd. The project consists of removing the concrete lined channel and re-grading the basin bottom to better collect sediment. It also consists of installing native and wetland plantings to vegetate the bottom of the basin to eliminate the need to mow and allow for filtration of the stormwater before it leaves the facility.



Biodiesel

Since 2005 the city of Elgin has used Biodiesel fuel in its entire diesel fleet. Currently the City has over 100 diesel vehicles ranging from snow plows to street sweepers. The City uses a blended form of biodiesel known as B10 Biodiesel, which consists of 10% soy and 90% regular diesel.

The City has experienced no issues regarding the use of biodiesel and plans to continue its use indefinitely. The City's decision to switch its diesel fleet to biodiesel has since reduced it the gallons of pure diesel fuel used. According the US Environmental Protection Agency (EPA) biodiesel also offers significant environmental benefits. Biodiesel fuel reduces greenhouse gas (GHG) emissions. It is estimated the city of Elgin's use of biodiesel has reduced the GHG of its diesel fleet by 3-5%.

Additionally, the city of Elgin provides a electric charging station for Electric Cars at the municipal parking garage near The Centre.

Hybrid Vehicles

Since 2005 the city of Elgin has been utilizing hybrid vehicles. Used primarily by Engineering Inspectors the replacement hybrids have led to a 14% increase in fuel efficiency for the Engineering fleet.

In addition the City has purchased 3 more hybrids for use in the Land Management division to further decrease the City's environmental impact. The total of eight hybrids (1 Toyota Prius' and 7 Ford Escape hybrids) help the city Of Elgin lower greenhouse gas emissions through greater fuel efficiency.

While it will be a few years until any actual cost savings occur, the hybrids have offered additional unquantifiable benefits. Since hybrids run primarily on battery power at low speeds, City employees who make frequent inspection stops or leave vehicles idle for extended periods of time have found the hybrids to be especially convenient.

The hybrids provide a visible indication of the City's commitment to sustainability. As the benefits and fuel efficiency of hybrids continues to improve Elgin too will continue to pursue opportunities for the further reduction of greenhouse gas emissions.

Elgin Fit Forest Campaign

In 2009, the city of Elgin was selected by the U.S. Forest Service to receive significant community forestry services funded by the American Recovery and Reinvestment Act (ARRA).

These services, which include planning, tree planting and maintenance, and natural resource improvement projects, are provided by The Davey Tree Expert Company and comprise a unique and multifaceted city-wide project. The primary purpose of any project funded by ARRA is to maintain jobs, reinstate jobs, or stimulate the creation of jobs. The project in Elgin will accomplish this by hiring and retaining staff to conduct forest health management activities on the City's lands to achieve safe, productive, and sustainable forests and ultimately create a more efficient and effective municipal program.

The overall goal of this project is to improve the city of Elgin's community forest and natural resources through sustainable management utilizing comprehensive urban forest management tools and strategies. To achieve this goal, an Urban Forestry Master Plan will be created so that the following can be addressed and accomplished:

- Community Outreach and Education
- Tree Risk Reduction
- Invasive Species Readiness
- Street and Park Tree Planting
- Urban Wood Utilization
- Ecosystem Restoration

http://cityofelgin.org/index.aspx?NID=1093

The Fit Forest
Elgin goes for the green!

Urban Tree Canopy and Land Cover Analysis

As part of the Fit Forest Campaign, Davey Tree Experts conducted a series of land cover analyses. These analyses are vital to understand the environmental makeup of Elgin. They will also help direct stormwater management, as well as residential and commercial development.

Select analyses are below. For more complete information please visit the Fit Forest Campaign webpage at: http://cityofelgin.org/index.aspx?NID=1093

Community Wide Land Cover

Land Cover	Acres	Percent Coverage within Elgin
Impervious Area	7,166	29%
Trees/Forest/Shrub	3,896	16%
Grass/Meadow	12,508	52%
Water	709	3%

Quadrant Land Cover

Elgin Community Network	Canopy Acres	Total Acres	Percent Canopy
Downtown	12	165	7%
Northeast Area	586	2,100	28%
Northwest Area	1,307	6,167	21%
Southeast Area	799	4,198	19%
Southwest Area	825	7,741	11%
Total[1]	3,528	20,371	17%

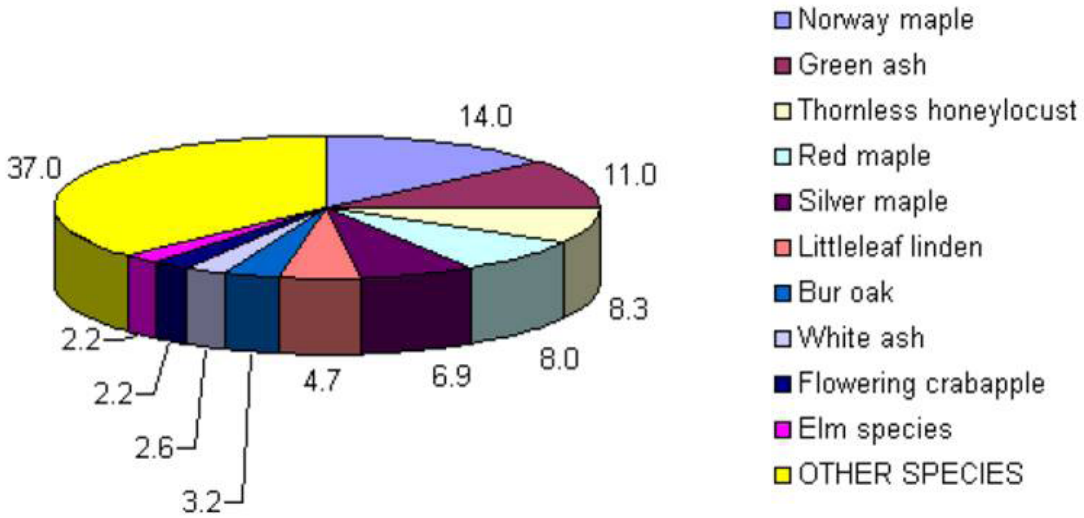
[1]Not all parts of Elgin are included in an Elgin Community Network

Neighborhood Land Cover

Elgin Neighborhood Group	Canopy Acres	Total Acres	Percent Canopy
Century Oaks Neighborhood Association	101	307	33%
Century Oaks West Homeowners Association	37	265	14%
Cobblers Crossing Master Association	59	378	16%
College Green Homeowners Association	40	315	13%
College Park McIntosh	25	234	11%
Downtown Neighborhood Association	13	185	7%
Eagle Heights Residents Association	40	171	23%
Gifford Park Association	49	188	26%
Grant Park Neighborhood Association	110	340	32%
Highland Avenue Neighbors	6	35	17%
Lords Park Association	50	173	29%
Michigan Triangle	2	11	14%
Near West Area Neighbors	38	156	25%
Neighbors of Southeast Elgin	269	830	32%
North Country Knolls	175	620	28%
Northeast Neighborhood Association	297	733	41%
Parkwood Home Owners Association	11	72	16%
Riverside Manor Neighborhood Association	9	26	35%
Shoe Factory Homeowners Association	0.3	3	11%
Southeast Elgin Neighbors	71	1,092	7%
Southwest Area Neighbors	95	388	25%
Summit Park Settlement	34	125	27%
Sunset Park Area Neighbors	22	86	26%
Terrace Court Condos	0.1	4	1%
Tyler Bluff Home Owners Association	6	12	48%
Valley Creek Southwest Neighborhood Assoc.	31	130	24%
Willow Lakes Estates	36	111	33%
Woodbridge Home Owners Association	12	115	11%
Woodbridge Townhomes	3	24	13%
Total	1,641	7,128	23%

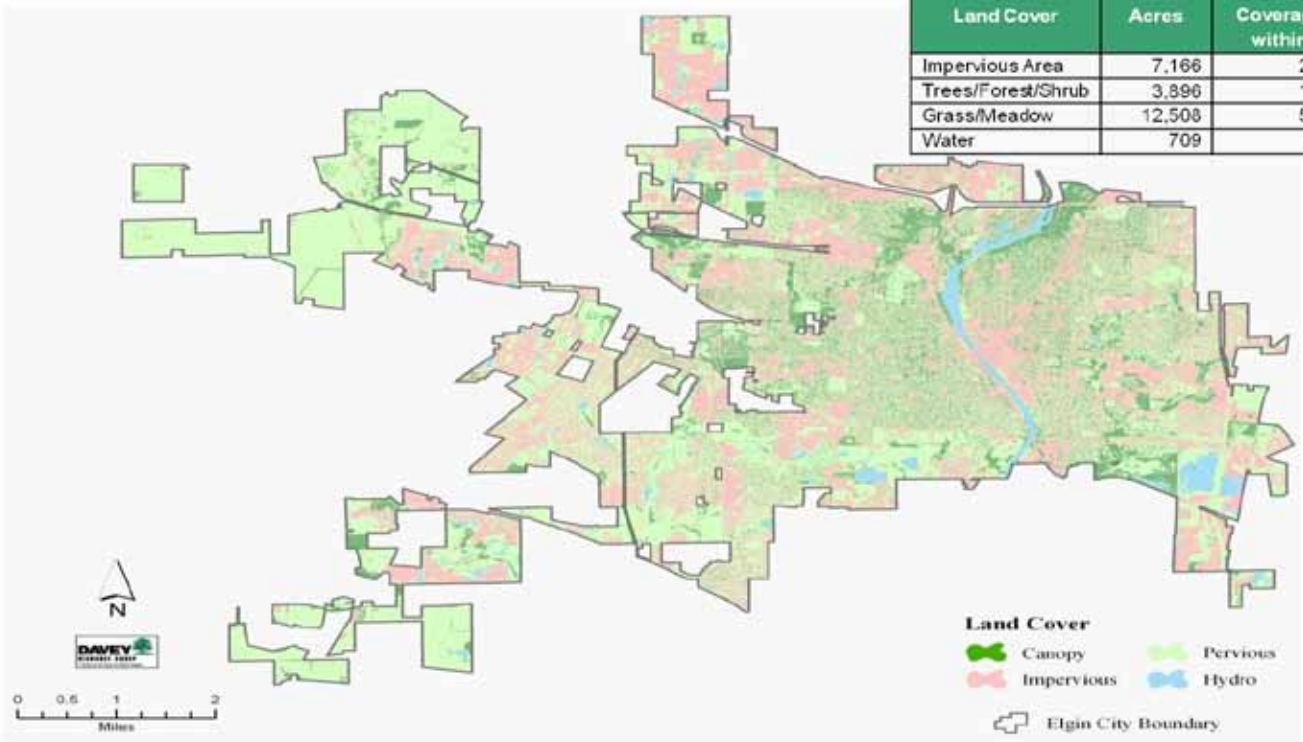
Types and percentage of trees in the public right-of-way Courtesy of Davey Tree Experts

Data and Tables provided by: DAVEY Proven Solutions for a Growing World



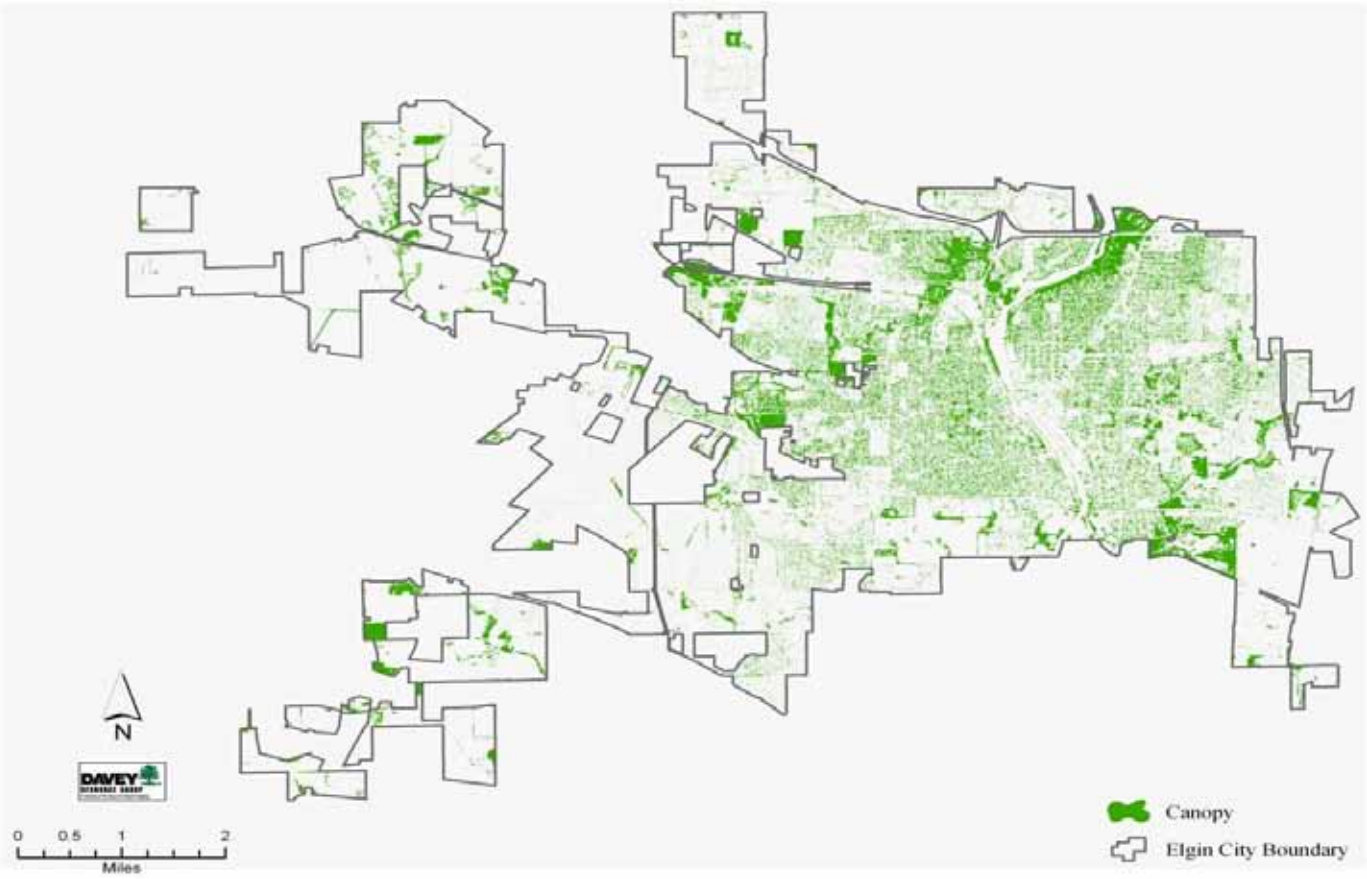
Urban Tree Canopy (Continued)

Land cover, incorporated Elgin



Land Cover	Acres	Percent Coverage within
Impervious Area	7,166	29%
Trees/Forest/Shrub	3,896	16%
Grass/Meadow	12,508	52%
Water	709	3%

Tree canopy, incorporated Elgin



Appendix C
Sustainability Briefs

Throughout the planning process, working groups have done more than just develop goals and objectives. They also generated short white papers, or “sustainability briefs.” These reports define and discuss a sustainability related topic and report on how it would or would not benefit Elgin.

Permeable Pavement

By Water Resources working group

Rationale

Permeable pavement is used to allow water to filtrate through the surface and down into the ground beneath. Permeable pavement limits disruption of natural water flows by minimizing stormwater runoff, increases on-site infiltration, and reduces contaminants, unlike other paving materials which when the water hits the surface it flows to the lowest point possible (normally a drain and thereafter the water is transported to our waterways) the use of permeable pavements allow the water to go into the earth.

Advantages & Use of permeable pavement

They are commonly used for driveways, emergency access lanes, soil and land stabilization, public parks, parking lots and landscaping. Permeable pavements allow for incorporation of a drivable surface with grass or vegetation. For sloped land the permeable pavement can provide soil stabilization and reinforcement. Permeable pavements permit the use of vehicles. Permeable pavements control erosion of riverbanks, streambeds, reduce storm water runoff, recharge/store groundwater, and reduce levels of pollutants reaching surface water.

Using light colored pavement will reduce the heat island effect. Permeable pavements (including pavers) have been proven to have long term durability and are easy to repair. Also, they provide groundwater recharge, control erosion in streambeds and riverbanks, facilitate pollutant removal, reduce thermal pollution and eliminate standing water on pavement.

Permeable pavement can withstand freeze-thaw conditions, porous pavement experiences less effects from frost heave than impermeable pavement. The permeable pavement is actually safer in the winter because it does not accumulate icy buildup. Typical pavement puddles when snow melts, the puddles then freeze again – with permeable pavement, the periodic melt enters the pavement and is not able to refreeze on the surface. The system is designed to flow the water through it – not to have the water stay for extended periods of time. It should be designed so that the water does not stay in the base longer than 12 hours. Pavers are installed on a sand bed without mortar. They can expand and contract with the temperature with out cracking or spalling. If unsettling occurs, the displaced pavers can be removed, the base leveled and then replaced.

Types of permeable pavement

Three common types are

- Grass pavers, made from plastic grids and have vegetation planted in the holes/voids;
- Porous concrete pavement, with small holes/pores which allow water to seep through;
- Interlocking Concrete pavers which have pervious material between each paver, such as sand, gravel, mulch or vegetation.

Costs/Expenses

Permeable pavement is more expensive initially. Permeable pavement doesn't require drainage pipes or retention systems and thus are more economically advantageous in the long run. Investments in storm water piping, retention ponds and storm sewer extensions are reduced.

Permeable Pavement (Continued)

Comparison costs:
Asphalt costs $0.50 - $1.00 per square foot (without costs for storm water/drainage systems, which will add approximately $7.00-$8.00 per square foot).
Grass/gravel pavement start at $1.50 to $5.75 per square foot installed.
Porous concrete costs are $2.00 - $6.00 per square foot.
Interlocking concrete pavement cost $5.00 - $10.00 per square foot. Section 319 grants are available to fund these types of projects.

Strength
The permeable pavers resist heavy loads and forces by forming an interlock between them, forcing the weight to be dispersed to the whole surface.

Maintenance
Generally the permeable pavements require sweeping about 4 times per year and re-fill the voids when necessary.

Installation of permeable pavement
Permeable paver systems are leveled with a vibrating plate compactor. Excavation should be 12-15 inches. Lowest level is gravel, next is a layer of Geotextile fabric, next is a layer of sand, then the pavement.

Feasibility / Limitations
Site grades, subsoils and drainage characteristics. High levels of sediment runoff and high traffic volume are likely to cause system failures. It is required to maintain effective pollutant removal in the subsoils. Drainage time is usually 24 hours. In cold weather climates care should be taken not to use sand or other porous materials which could clog the pavement. Applying salt could lead to chlorides migrating into the groundwater. Also, surface material should be able to tolerate undulations from frost movements.

Design considerations:
Consideration should be given to Porous Pavement which is permeable asphalt or concrete surface that allows storm water to quickly infiltrate an underlying stone reservoir. The runoff then percolates directly into the underlying soil, which recharges ground water and removes stormwater pollutants. Porous Pavement looks similar to conventional pavement but is formulated with larger aggregate and less fine particles.
Porous pavement areas are designed to accommodate 1-inch of design storm. Permeable Pavements are designed to accommodate rainfall depths of less than 1-inch without ponding on small sites.

Evaluation of Permeable Pavements – Olympia Washington
Study compared grass pavement, gravel pavement, impervious pavement, and standard asphalt. Results indicated that the use of permeable pavement dramatically reduced surface runoff as compared to other surfaces.

For a copy of this report and more information about Elgin's sustainability initiatives please visit www.cityofelgin.org/green.

Organic Food Composting

According to the U.S. Environmental Protection Agency (EPA), 26 percent of the municipal solid waste (MSW) stream is organic material, namely food waste and yard trimmings. In addition to providing a soil enrichment product, composting organic materials can reduce the volume of MSW, as well as provide economic advantages for communities. As landfills and incinerators reach capacity, reducing the volume of material sent to them offers additional benefits, such as preserving landfill space. Organics buried in landfills generate methane, a greenhouse gas that is 21 times more potent than CO2. In many instances, methane gas generated at landfills is captured and used to generate electricity.

Types of Composting

Municipalities can choose either to have residents compost at their homes or businesses or they can incorporate food waste into an existing city-wide solid waste collection program. If the decision is to try residential composting, municipalities will need to educate residents about the various methods of in-home or business composting: cold, hot or vermi-composting. Cold composting involves piling green materials with brown ones in a container and allowing for slow decomposition. However, food waste is best left out of this mixture because of rotting.

Hot composting requires a proper ratio of greens to browns, size, aeration, and moisture. This pile should be kept at around 1300 order to speed decomposition and to kill weed seeds and plant diseases. This can be accomplished with a compost pile of at least 3 cubic feet which is mixed with approximately a 1 to 1 ratio of greens and browns and kept watered and aerated. Homeowners may find they do not have enough materials to fill the compost, but they could consider a neighborhood compost bin.

Finally, there is vermi-composting which is done with a small bin and many worms, usually the Red Wiggler type. Provide the worms with a bedding source, e.g. wet newspaper, and add kitchen scraps as food. Worms eat the kitchen scraps and bedding and excrete worm castings, ideal as a soil amendment. Moisture, called worm tea flows from the bin and can be used as a liquid fertilizer and natural insecticide.

Municipalities with existing yard waste collection and composting programs may also be able to add food waste. Curbside collection is a relatively new concept in the United States, but many cities have successful programs in place. The most notable of these programs is in San Francisco, CA where 400 tons of food scraps a day are sent to their composting facility. In most of these programs, compostables are collected weekly in a wheeled cart similar to, but smaller than, the current waste containers used by the city of Elgin. The contents of these bins can either be limited to food waste only or may also include yard waste, depending on the program. Compostable material lists are distributed with the bins to ensure proper use. One main advantage of large scale composting over home composting is the ability to compost items that are otherwise considered non-compostable. These items, including dairy, meat, bones, seafood, and soiled papers can be processed safely in commercial composting due to the high temperature reached in large commercial compost piles.

The feasibility of instituting a curbside food waste collection program in Illinois is more likely now that the state legislature passed Senate Bill 99 to legalize and create better regulations on commercial food scrap composting. Illinois added the Food Scrap Composting Revitalization and Advancement Program (F-SCRAP) to support projects aimed at diverting organic materials, (other than yard waste) from landfills and into composting programs. Such a grant could support the institution of a curbside composting program in our community. While the 2010 application period is already past, a future grant cycle is anticipated by the DCEO. Additional information on this grant can be found at http://www.commerce.state.il.us/dceo/Bureaus/Energy_Recycling/Recycling/.

Organic Food Composting (Continued)

Choosing Generators

Once a decision to compost is made, choosing which generators to work with---residential, commercial or others will require further discussions between the municipality and the specific generators. Selecting a generator to target depends on how much volume the composting facility is prepared to handle. Processing food waste in an in-vessel (enclosed) system one of the most common methods used. The organic materials are fed into a drum, silo or other similar equipment where the environmental conditions—including temperature, moisture, and aeration—are closely controlled. In-vessel composters vary in size and capacity, and can be used year-round in cold climates. Although they can process large volumes of waste in a shorter period of time, in-vessel composting generally takes up much less space and is less labor intensive than the traditional windrow method. The apparatus usually has a mechanism to turn or agitate the material for proper aeration. Because they are enclosed, in-vessel composting operations produce very little odor and minimal leachate.

In addition, a complete program will require collection bins, instructions, training, obtaining a hauler and generating publicity for the community as well as feedback. Governmental regulations will determine whether your yard waste facility is now ready to accept food waste. Yard waste facilities may not require a special permit, but adding food waste may.

Then there are local zoning ordinances which need to be obeyed before the facility can receive food waste.

Finally, marketing the final compost product is a necessary step. Compost from organics can be applied in local parks/forestry programs, sold to local landscapers or made available to the public. The scarcity or expense of chemical fertilizers should enhance the acceptability of the finished compost.

Recommendation

The City should begin looking into a pilot program to test the receptiveness of residents while also working on a plan to institute a large scale curbside composting program. In the meantime, our residents need education on home composting and the City can help to provide this education.

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Plantings

Native plants are the original, non-hybrid variety of the native species that grew in this region before the settlers came. Purple Coneflower is one example. Cultivars are defined varieties that have been created by horticulturists for the garden trade. They can be created from native or non-native species. Meadowbrite Coneflower, the orange version of purple coneflower created by the Chicago Botanic Garden, is one example of a native-based cultivar.

Native Plants

Native plants are sustainable, because they are well-suited to the climate and soil conditions of the area where they are found naturally--they are grown successfully with little effort. They are adapted to extreme temperatures, blustery winds, and intense sunlight. They are drought resistant--once established, after 2-3 years, they need no supplementary water--ever. The roots of prairie plants grow deep into the earth--some as much as 15' where water is available. (The root systems make up 2/3 of the plants' biomass). In addition, the surfaces of the leaves may be hairy, deflecting sun and wind, or thick and leathery or waxy to minimize transpiration (water loss).

They are easy to tend. They do not need to be divided--they like to grow close together. They seed themselves about, making them bountiful beyond belief. If this is undesirable, they will tolerate dead-heading to remove unwanted seeds. The growing point of prairie plants is just below the surface, making them resistant to fire, unlike exotic species. An annual controlled burn, where legally permitted, fertilizes the plants with its ash and keeps woody plants and Eurasian weeds at bay. In areas where burning is not allowed, dormant season mowing can be used, although it loses the benefits of ash fertilization. Nothing needs to be brought into the garden, nothing has to be taken out.

Native plants contribute to the overall quality of the environment by improving soil, water, and air qualities. 1/3 of the dense root systems of prairie grasses and sedges decompose every year, enriching the soil with organic matter and increasing its water -holding capacity. The longer roots of forbs draw water deep into the earth, replenishing the shallow aquifer. This water infiltration and holding capacity prevents runoff, erosion, and flooding. In addition, deep-rooted plants have the ability to sink carbon, contributing to control of greenhouse gases.

Native plants support biodiversity by providing food for native insects that in turn are eaten by native birds--96% of birds eat insects. Native landscapes and gardens provide habitat for birds, butterflies, bees, grasshoppers, crickets, and other insects; frogs, toads, and salamanders; and they offer fascinating places for children to play.

Native plant garden beds add variety and color to your yard, making it more visually interesting than an unbroken area of lawn. Native landscapes celebrate the character, history, and identity of a particular community and region.

Cultivars

Native-based cultivars are somewhat sustainable, because many of them retain many of the same characteristics as their parent, native plants. However, it depends on exactly how the cultivar was bred. Some retain very few native characteristics. The ones retaining most characteristics will still be hardy in this region, meaning they can tolerate extreme weather, are drought-resistant and pest-resistant, and need little if any watering.

The long-term maintenance is often the same as with natives. Native-based cultivars are usually still fire tolerant and benefit from annual burns. Mowing and dead-heading can be used as desired. Native-based cultivars are beneficial for the soil, water, and air, just like natives, although some hybrids have shallower roots, so the benefits are reduced.

Plantings (Continued)

Native-based cultivars contribute to biodiversity in similar ways as natives, although some insects will not be able to feed on or pollinate cultivars of their native host plants. Therefore, biodiversity may be reduced in gardens with only cultivars.

Non-native cultivars need to be carefully evaluated to make sure that they are hardy in this region. Non-hardy varieties should be planted and treated as annuals as they will likely last only one growing season. The less hardy the plant, the more maintenance in terms of watering and fertilizing the plant will require.

Some cultivars will seed themselves around similar to native plants, but their seeds may not breed true, meaning the color of the flower often reverts to the original parent plant color. Dead-heading is usually suggested to prevent this from happening.

Cultivars often provide much more variety in blooms than native plants. Cultivars are bred to be showier, so they are bred to have more color options and larger blooms than natives. The blooming period may be extended. They also may have more appealing foliage in terms of leaf shape, color, and size.

Similar to native plant garden beds, cultivars can be used to add variety and color to your yard, making it more visually interesting than an unbroken area of lawn. They combine well with native plants, giving you more options in the garden to increase this visual appeal.

Turf Grass - also called Lawn Grass

Turf grass is not sustainable. It requires quite a bit of maintenance, including regular mowing, watering, fertilizing, and weed control. Left alone, it cannot sustain itself. Weeds will come in and replace the lawn, eventually greatly reducing or eliminating the grass. Mowing is very detrimental to air quality. Most mowers are gas powered, emitting many pounds of greenhouse gases per season. Electric and battery powered mowers are a more sustainable choice, although the electricity still has to be generated, and the batteries still have to be produced and eventually disposed of. Watering reduces groundwater and turns it into surface water, thereby wasting a regional resource. In poorly maintained lawns, watering often increases run-off. This run-off water carries some of the fertilizers and weed control pesticides into nearby streams, degrading water quality. Turf grass can stress trees by competing with them for water and nutrients, as most of the fine, water absorbing roots of trees are in the top 6 inches of soil.
Turf grass does have a lot of visual appeal. A well-maintained lawn looks neat and appealing.

Turf grass is the best option for open play areas in the yard. It holds up well to foot traffic and grows evenly making a fine field for soccer and other children's games. While some native and cultivar groundcovers will handle some foot traffic, they can't hold up to sustained traffic like a maintained lawn can.

Use the right plant in the right place

The best option for sustainability is to use the right plant in the right place. Choose trees, shrubs and garden plants that can tolerate our weather. Natives and native-based cultivars are best for this, with natives being the most tolerant. Carefully chosen cultivars that are hardy in this region are also good choices. Plant turf grass only where needed, such as in pathways between garden beds or in play areas for children. By following these guidelines, you can reduce the time you spend on yard maintenance, reduce the negative environmental impacts from mowing and weed control, and increase the visual interest

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Plantings (Continued)

Extensive turf grass

Native plantings near home

Extensive native plantings

Photos Courtesy of Pat Hill http://naturalmidwestgarden.com/

Context Sensitive Solutions

What are context sensitive solutions?
An effective complete streets policy must be sensitive to the community context. Being clear about this in the initial policy statement can allay fears that the policy will require inappropriately wide roads in quiet neighborhoods or miles of little-used sidewalks in rural areas. A strong statement about context can help align transportation and land use-planning goals, creating livable, strong neighborhoods.

A 'complete/context sensitive' streets network should accomplish the following:

Street movement network
- Provide acceptable levels of safety and convenience for all street users in residential areas, while ensuring acceptable levels of amenity and minimizing negative impacts of through traffic.
- Provide a managed network of streets with clear physical distinctions between arterial routes and local streets based on function, legibility, convenience, traffic volume, vehicle speed, public safety and amenity.
- Support frontage development along streets wherever possible.
- Establish a movement network that provides convenient linkages to activity centers and local facilities either within or adjoining the development.
- Provide a movement network that is efficient, affordable, legible, minimizes travel time, supports access to public transport and contributes to limiting fossil fuel use.

Public transit
- Provide reasonable access to all urban areas to facilitate increased use of public transit.
- Ensure efficient and convenient commuter rail routes and locate commuter rail stations within a street network that facilitates access by pedestrians, bicyclists, commuter bus service and cars.
- Provide a comprehensive commuter bus route network that is efficient to operate,
- Comfortable to travel on, and with commuter bus stops that are conveniently and safely accessible by foot from most dwellings.
- Bicycle movement network
- Provide a safe, convenient and legible bicycle movement network to meet the needs of both experienced and less experienced cyclists, including on-road and off-road routes.

Movement for people with disabilities
- Provide a safe, convenient and legible movement network for people with disabilities, including those using wheelchairs and similar aids.

Pedestrian movement network
- Provide a safe, convenient and legible movement network for pedestrians, principally along the street network; provide excellent accessibility between residences and safe and efficient access to points of attraction within and beyond the neighborhood.
- Optimize the walkable access to centers, schools, public transit stops and stations, and other destinations.
- Include major routes that serve as integrator arterials with extensive and frequent opportunity for pedestrians to move safely along and across them.
- Promote and support walking to daily activities.
- Provide pedestrian paths through parks for recreation purposes wherever practicable.

Street design
- Provide attractive streetscapes that reinforce the functions of a street and enhance the amenity of adjacent housing and developments.
- Provide sufficient width of road to allow streets to perform their designated functions in the street network.
- Provide street geometry that is safe and appropriate to the street function.
- Accommodate on-street parking where required, including parking for people with disabilities.
- Provide a safe, distinct, and pleasant environment for residents and other users.
- Provide for storm water run-off from paved areas in accordance with sustainable urban storm water management best practices.

Sustainability Indicators

An indicator is information about the direction of change in a system. Indicators can support and be shared by various goals and objectives. We use indicators to tell us what changes are taking place and to guide and measure our progress towards goals. It is recommended as part of this action plan Elgin begin to monitor these indicators. Potential data sources are listed below each indicator.

Access to Fresh Food: Both price and geographic proximity to grocery stores affects access to healthy and nutritious food. Three measures are used to define accessibility: distribution of grocery stores by census tract income; price of market basket in dollars by store chain and store location; and quality of food available (e.g. nutrient density, freshness, organic) by store chain and location.
Source: Elgin Community Development Department

Acres in Parks and Open Space/1000 Population: Urban parks and open space give city dwellers a place to breathe, relax, play, walk their dogs, have picnics, and hold community gatherings. Open spaces provide urban wildlife habitat and drainage for local streams. Change in park/open space acreage per thousand residents.
Source: Elgin Parks and Recreation Department

Average Commute Time: A recent national study reveals that drivers waste nearly an entire workweek each year sitting in traffic on the way to and from their jobs. Though travel behavior varies with personal lifestyles of people, it depends to a degree on where residential and employment centers are located. With rising cost in housing prices people tend to incur longer commutes by moving towards suburban developments. Long commutes can lead to loss of short-term memory, more days of missed work and physical ailments such as higher blood pressure, muscle tension
and an accelerated heart rate, not to mention the impact on stress, mood and relationships. Average commute time for Elgin residents.
Source: Census Data

Bicycle and Pedestrian Counts: Increases in bike and pedestrian traffic are a leading indicator of shifts to more sustainable transportation modes. As more people get out of their cars and use their foot power to either walk or bike, they create demand for suitable infrastructure and nearby shops and services which encourages even more people to walk or bike. Number of bicycles or pedestrians passing through designated intersections for a specified period of time. Source: Bicycle/Pedestrian Count Survey

Carbon Footprint: The more we drive, build, and consume, the more greenhouse gases we pump into the atmosphere and the larger our carbon footprint. Public transit and residential density play a role in the size of our footprint, as does the weather, electricity prices and the carbon intensity of electricity generation.
The carbon footprint is a measure of the total amount of greenhouse gases produced for a region in terms of carbon dioxide equivalents.
Source: Center for Neighborhood Technology

Infill Development: Re-development on the existing development site is Infill development. The re-development that involves cleaning up and of an open land to make it free from any harmful and toxic waste that would make the development environment friendly is brownfield development. Popularity of such developments has increased in the last decade due to several reasons like scarcity of open land in urban centers, depletion of natural resources, deforestation, long commute time etc. Infill development curbs sprawl and increases options for development in urban centers. Infill and
Brownfield developments promote integrated transportation and land-use model, which is a comprehensive approach towards sustainable development.

A study by the U.S. Environmental Protection Agency (EPA) in San Diego, CA shows VMT savings of 15-52%

on an infill site over a greenfield site. Apart from pollution control, infill and brownfield developments are resource efficient and environment friendly. Redevelopment of some brownfield sites maybe cost prohibitive in terms of the effort and resources employed for clearing and reusing it. The long-term benefits are a deciding factor in such cases. Undefined measure of brownfield/infill development as percentage of total development. Source: Elgin Community Development Department

Land Use Mix: Well-planned communities with a balanced mix of land uses (e.g. retail, office, and residential uses) give residents the option to walk, bike or take transit to nearby attractions. Low density, segregated land uses and disconnected streets are associated with increased auto use, increased obesity and other chronic illness. High residential density by itself has only a weak relationship with walking – the presence of mixed land uses and meaningful trip destinations are more important for encouraging walking. Composite measure of six different land uses, including education, entertainment, single and multi-family residential, retail and office uses. The Mixed-use factor looks at the number of different uses within a given area as well as their relative amounts.

The three measures are:

- The number of different land uses (individual attractions) captures the total unique destinations accessible within a household or employment buffer area (the area within a one mile walk of home or workplace). More unique attractions indicate an area has a more diverse, and potentially more interesting, streetscape;
- The rentable building area (square footage) of a use indicates the actual density of a particular use within a buffer area; and
- The total parcel area measures the total parcel area committed to particular uses and gives0 a sense of gross area devoted to uses in a buffer, independent of the number of uses or the rentable floor space of those uses. This measure is somewhat equivalent to a description of conventional zoning by use. Source: Elgin Community Development Department

Median House Size, New Construction: National and local trends show we're building and buying increasingly larger homes. While green built homes help reduce environmental impacts, generally speaking, the trend towards larger houses signals more resource consumption, both for home construction (wood, metal, land) and operation (electricity, natural gas, water). Larger houses also push up the cost of land, thereby contributing to the shortage of affordable housing. Median size of new residential construction in Elgin.
Source: Elgin Community Development Department

Neighborhood Gathering Places: The everyday social life of neighborhoods is found in its gathering places. Inclusive spaces where neighbors can play, meet others, organize themselves to work together on projects and activities, chat, and watch the world go by, perform the valuable community service of fostering social ties. These gathering places might be built, semi-open or open green spaces. Open gathering spaces include parks, community gardens and waterfronts while built environment gathering places include libraries, community centers, performance auditoriums, theaters and so on. Other favorite focal points of neighborhood life include businesses such as nail parlors and barbershops and coffee houses. Potential indicator: Households within ¼ mile of neighborhood center (accessibility to a neighborhood center). The number of households within ¼ mile of a neighborhood center is a measure of the accessibility to a neighborhood gathering place or location that defines an area's "sense of place."

Source: Elgin Community Development Department, Community Survey

Net Residential Density: Greater residential density allows for more and better transportation choices, including mass transit, biking, and pedestrian trails. Such density also improves the walkability of

Sustainability Indicators (Continued)

neighborhoods and access to services and amenities while decreasing sprawl and the consumption of land. Density depends on both dwelling unit size and household size. Number of residential lots per acre, permitted single family units per acre and permitted multi-family units per acre.
Source: Elgin Community Development Department

Perceived Neighborhood Safety: A sustainable society requires cooperation and trust at basic levels. Feeling safe and secure at home, work, and in the community is an essential prerequisite for sustaining a high quality of life. Perceived neighborhood safety is important not only to our physical and psychological health, but also to the success of local businesses and the vitality of our communities. Survey average level of perceived neighborhood safety among Elgin residents by neighborhood, race, education, gender, and income.
Source: Community Survey.

Ratio of Housing Units to Population: The lack of affordable housing is fundamentally an issue of supply and demand. Are we building enough affordable housing units to meet demand, particularly as our region's population continues to grow? Too great a demand in relation to supply drives up prices. Ratio of the number of housing units to population.
Source: Census Data

Ratio of Land Consumption to Population Growth: Changes in population relative to the portion of land being converted from rural to urban uses signals our ability to accommodate the jobs, housing, shopping, parking, transportation, and other built uses that come with population growth without ruining our natural environment in the process. Rate of population growth compared to the consumption of new land for development.
Source: Elgin Community Development Department

Vehicle Miles Traveled: Too much time in our cars poses a number of serious problems. There is congestion, which costs residents and businesses in the Chicagoland region hundreds of millions of dollars annually in lost productivity.
Air quality suffers. And there's climate change. Track average weekday vehicle miles traveled (region wide).
Source: Census Data

Walkability Index: People tend to walk more in mixed-use neighborhoods that are well planned. Different destinations, such as parks and neighborhood gathering places, libraries, community centers, and shops and services, interwoven with pedestrian friendly pathways and streets, encourage people to walk more. Walkable neighborhoods can positively affect other issues such as pollution, health and traffic congestion. The Walkability Index considers residential density, the number of street connections, and the mix of homes, stores, parks, and schools in a neighborhood.
Source: www.walkscore.com

Complete Streets

What are complete streets?
Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street.

What are complete streets policies?
Places with complete streets policies are making sure that their streets and roads work for drivers, transit users, pedestrians, and bicyclists, as well as for older people, children, and people with disabilities.

Why do we need a network of complete streets?
Complete streets improve safety.
A Federal Highways Administration safety review found that streets designed with sidewalks, raised medians, better bus stop placement, traffic-calming measures, and treatments for disabled travelers improve pedestrian safety. Some features, such as medians, improve safety for all users: they enable pedestrians to move across busy roads in two stages, reduce left turning motorist crashes to zero, and improve bicycle safety.

Complete streets address climate change and oil dependence.
The potential to reduce carbon emissions by shifting trips to lower-carbon modes is undeniable. The 2001 National Household Transportation Survey found 50% of all trips in metropolitan areas are three miles or less and 28% of all metropolitan trips are one mile or less – distances easy to walk, bike, or hop a bus or train. Yet 65% of the shortest trips are now made by automobile, in part because of incomplete streets that make it dangerous or unpleasant for other modes of travel. Complete streets would help convert many of these short automobile trips to multi-modal travel.

Simply increasing bicycling from 1% to 1.5% of all trips in the U.S. would save 462 million gallons of gasoline each year. Using transit has already helped the United States save 1.4 billion gallons of fuel each year, which is a savings of 3.9 million gallons of gasoline every day.

Complete Streets foster strong communities.
Complete streets play an important role in livable communities, where all people – regardless of age, ability or mode of transportation – feel safe and welcome on the roadways. A safe walking and bicycling environment is an essential part of improving public transportation and creating friendly, walkable communities.

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The city of Elgin is proud to join the many communities around the country and world actively working to reduce their environmental impact, serve as responsible environmental stewards and instill an environmental ethic in today's society.

Special acknowledgement and thanks to:

Mayor and Members of the City Council
Sustainability Advisory Team
Past and present working group members
ICLEI Local Governments for Sustainability
AECOM
Bruce R. Dahlquist, AIA, LEED BD+C: Technical Facilitator
Aaron Cosentino, Sustainability Coordinator
City staff
Citizens of Elgin

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