

Alton Climate Action Plan

March 2011

Alton Climate Action Plan

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Acknowledgements: The City of Alton would like to thank the City of Evanston Office of Sustainability and Lewis and Clark Community College for their assistance on this project. This Climate Action Plan is modeled heavily on the Climate Action Plan of the City of Evanston, Illinois.

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INTRODUCTION

CAP Recommended Strategies – Summary Transportation and Land Use

1. Continue to support and encourage mixed-use, green high performing, transit oriented development.
2. Encourage Alton businesses to adopt strong employee commuting and telecommuting programs, providing resources and incentives to reduce the number of single occupant auto commuters in and out of Alton.
3. Reduce car-ownership by encouraging residents and employers to participate in car-share programs.
4. Reduce vehicle emissions.
5. Investigate the feasibility of an “EcoPass” for every Altonian.
6. Recommend and support measures that reduce transportation-related greenhouse gas emissions.
7. Expand public transit as a viable option of commuting to work, home, and entertainment.
8. Increase affordable housing options and resources in Alton as a mechanism to reduce vehicle travel.
9. Collect and track data on Alton travel trends, including vehicle miles traveled, transit boarding and the number of residents that commute via bike and foot.
10. Reduce vehicle fleet emissions.

Energy Efficiency and Buildings

1. Reduce emissions related to electric and gas use in commercial, institutional, and industrial buildings.

Renewable Energy Resources

1. Reduce emissions related to motor fuel use in commercial and residential applications through the use of bio-fuels.
2. Continue to reduce emissions related to motor fuel use by City fleet through the use of bio-fuels.
3. Reduce emissions related to electric and gas use in buildings through the use of renewable energy.
4. Reduce emissions related to electric and gas use in commercial and municipal buildings through the use of off-peak thermal storage.
5. Reduce emissions related to electric and gas use in commercial and municipal buildings by converting waste to energy.

Waste Reduction & Recycling

1. Increase residential waste reduction and recycling participation efforts.
2. Increase commercial waste reduction and recycling participation efforts.
3. Increase the reuse and recycling of construction and demolition waste.
4. Keep clothing and fabric out of the landfill.
5. Increase waste reduction and recycling participation at City buildings, parks, and events.

Food Production & Distribution

1. Reduce emissions related to the production and transportation of food.

Forestry, Prairie & Carbon Offsets

1. Optimize tree planting and protect existing trees for maximum carbon storage/sequestration and energy savings.

Policy & Research

1. Track and disseminate information on climate change trends, policies, and best practices.
2. Ensure that policy decisions at all levels seek to reduce greenhouse gas emissions.
3. Secure and leverage funding for Alton Climate Action Plan initiatives and strategies.
4. Support local, state, and national efforts to mitigate climate change.

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Education & Engagement

1. Empower the community to take action around climate change.
2. Gain support from the largest Alton institutions and businesses for the implementation of the Alton Climate Action Plan.
3. Use festivals, markets, and celebrations to promote and model "green practices."
4. Connect residents, businesses and City staff to workshops, training and lectures on green topics.

Communications & Public Relations

1. Disseminate information to the community around climate change and the Alton Climate Action Plan and promote community and City efforts as pertinent.

GLOBAL WARMING, CLIMATE CHANGE, AND IMPACTS IN THE MIDWEST

The overwhelming body of scientific evidence is clear: climate change is happening now, and the primary cause is human activity. Global average temperatures have risen by 1.4°F over the last century, and this warming trend is accelerating. The vast majority of scientists agree that the main culprit is the emission of heat-trapping greenhouse gases from the burning of fossil fuels such as coal and oil. The concentration of carbon dioxide in the atmosphere as of 2010 is 390 ppm, higher than the natural range of 180 to 300ppm of the last 650,000 years. The increase in carbon dioxide observed has been escalating since the industrial revolution and can be explained only by human-caused emissions of greenhouse gases.

The impacts of climate change are increasingly apparent. Extreme weather events such as heat waves and heavy downpours have increased in recent decades. The combination of melting glaciers and thermal expansion of the warmer oceans is causing sea levels to rise. Droughts and floods are becoming more common, and eco-systems around the world are struggling to adapt to the changing climate. Many of the observed changes are occurring faster than was predicted even just a few years ago.

The evidence of global warming is unmistakable here in the Midwest as well. The 2000 National Assessment Report of the U.S. Global Change Research Program notes the following climate trends over the 20th century for this region:

- » Generalized warming (+4°F in the northern portion, including the upper Great Lakes, and -1°F along the Ohio River Valley)
- » Increased annual precipitation (by 10-20 %)
- » Increased number of days with heavy to very heavy precipitation events

Looking to the future, climate models predict that these trends will increase even more rapidly in the 21st century if we do not sharply reduce GHG emissions.

- » Temperatures in the northern portion of the Midwest are projected to increase by 5 to 10°F by the end of the century.
- » Precipitation is projected to increase another 10 to 30 % over the region, with much of it coming from heavy and extreme precipitation events.
- » Higher temperatures will lead to increased evaporation and lower water levels in the Great Lakes.
- » Increased evaporation will also cause soil moisture deficits and more drought-like conditions in much of the region.

These changes will have a number of effects in this region; some will be positive, but many others will be devastating, especially for vulnerable groups such as the poor, the young and the elderly. Public health will be a major issue for an urban area like Alton.

- » The number of days of extreme heat per year is projected to rise significantly. Under a high-emissions (business-as-usual) scenario, we could experience a heat wave similar to the Chicago heat wave of 1995 (that resulted in over 700 deaths) three times per year by the end of the century.

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- » The urban heat island effect (when cities remain much warmer than surrounding areas) leads to elevated nighttime temperatures and thus little relief at night during heat waves. These conditions can be expected to lead to increases in heat-related illness and death.
- » High summer temperatures also mean higher ozone levels.
- » Insects such as ticks and mosquitoes will produce larger populations in the warmer weather, increasing the risk of diseases like West Nile virus.

Increases in heavy and sustained precipitation events are expected to lead to more frequent flooding. In Alton (with a combined sewer system in some places) stormwater overflows will be an issue. Intense rainfall also disrupts transportation and is likely to cause more property damage, increased clean-up and rebuilding costs, and a heavier burden on City emergency services.

Some continued global warming is inevitable over the next few decades, but the degree to which the future climate will change will be determined by the choices and decisions we make today. Taking aggressive action now to reduce GHG emissions will result in less future warming and less harm to our planet. Continued heavy reliance on carbon-intensive energy sources, on the other hand, will lead to greater warming and severe consequences for human health, ecosystems, and the economy. “Think globally, act locally” takes on new meaning as it relates to global climate change. The time to take action is now.

TAKING ACTION

National Trends

The number of cities taking action on climate change is growing. As of January 2010, 1044 mayors from 50 states (including Puerto Rico and Washington, D.C.) have signed the U.S. Mayors Climate Protection Agreement. The agreement pledges to advance the goals of the 2005 Kyoto Protocol through local leadership and action.

Under the Agreement, participating cities commit to take the following three actions:

1. Strive to meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns;
2. Urge their state governments, and the federal government, to enact policies and programs to meet or beat the greenhouse gas emissions reduction target suggested for the United States in the Kyoto Protocol -- 7 % reduction from 1990 levels by 2012; and
3. Urge the U.S. Congress to pass bipartisan greenhouse gas reduction legislation that includes clear timetables and emissions limits and establishes a national emissions trading system.

Two recent surveys, the Presidential Climate Action Plan (PCAP) Action Attitude Study of August 2010 (2,175 respondents) and the 132-City U.S. Mayors Climate Protection Center’s survey, “The Impact of Gas Prices, Economic Conditions, and Resource Constraints on Climate Protection Strategies in U.S. Cities” of 2008, indicate that U.S. citizens are ready for government to take action and that governments are, despite financial restraints, increasingly doing so. The PCAP study addresses the actions the Obama administration has undertaken to reduce GHG emissions and the U.S. Mayors’ survey examines the progress in implementing climate protection strategies in those cities that have signed the U.S. Mayors Climate Protection Agreement.

The PCAP survey found that the U.S. economy wastes 87% of the energy it consumes. With cost-effective energy measures in place, the U.S. could achieve a net savings of \$680 Billion by 2020 and prevent 1.1 gigatons of GHG from being emitted annually.

The U.S. Mayors’ survey results indicate that rising fuel and energy costs are providing additional motivation to take action on climate change issues. Eighty-nine percent of mayors responding said that rising fuel prices are having a significant or very significant impact on their city budget and operations, with 76% of mayors

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reporting that rising fuel costs prompted their city to give greater emphasis on the transportation sector of their climate protection strategy. Ninety-one percent said that their city is placing more emphasis on providing alternatives to driving, and 76% are considering additional changes in land use and development practices to support alternatives to solo driving.

Additionally, 41% of the mayors surveyed reported that they are making city facilities and services more energy efficient. Eighty-four percent say that energy price hikes have prompted their cities to consider raising future capital and other resource commitments to invest in building retrofits, more fuel-efficient fleets and other improvements that reduce energy use and costs.

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In April 2008, the City Council voted to sign the U.S. Mayors Climate Protection Agreement. Since that time, the City has created a Climate Protection and Energy Efficiency Committee that meets monthly. The City has purchased two hybrid vehicles, worth \$67,000, through the Environmental Project Funding Program that the Sierra Club and American Bottom Conservancy set up with ConocoPhillips. The City has completed a lighting audit of the Public Works Building and secured grants of approximately \$60,000 for lighting upgrades at that facility. The City has hired a consultant to study energy usage and the City saved over \$300,000 in energy costs in 2010. The City has also explored placing solar panels at the Police Station and purchasing charging stations and electric vehicles.

Currently, the City is in the process of completing Stage 4 of the Cool Cities Program.

ALTON CLIMATE ACTION PLAN - RECOMMENDED STRATEGIES

The Alton Climate Action Plan includes more than 200 recommended strategies for reducing GHG emissions. Each strategy includes a list of likely partners for implementation. In addition, special attention is called to strategies that are starred. The stars indicate initiatives that should be prioritized due to ease of implementation (i.e. requires no additional resources or resources, funding, and/or grant opportunities are available).

The plan does not include the potential costs associated with each strategy as this will vary depending on the resources available (City revenues, grants, other outside funding) at the time of implementation. Wherever possible, strategies that leverage existing resources are included.

The Alton Climate Protection and Energy Efficiency Committee looked at measures that may be expensive but whose costs could be absorbed outside the community.

While the plan is focused on City action, the strategies contained within the Alton Climate Action Plan will require action from the entire community, residents, businesses, and the City; all will have to absorb some of the burden of the upfront implementation costs. Long term, however, reductions in energy usage will translate into significant savings for the City and the community.

Transportation and Land Use

The contribution of the transportation and land use sector is a sizeable portion of Alton's total GHG emissions. Land use has a major influence on patterns of travel and so is incorporated in this sector.

In order to reduce this sector's emissions, the following recommended strategies focus on: building development (affordable, mixed-use, green, transit-oriented); improving commuting options (car-share, telework, carpool, etc.); improving existing transportation systems; and leading by example (alternatives to single occupancy vehicle commuting for City of Alton employees, improvement of City fleet vehicles [reduce fleet size, improve efficiency, use alternatives]).

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	Recommended Strategy		Partners for Implementation
★	Continue to support and encourage mixed-use, green, high performing, transit-oriented development.		
	a) Investigate reducing the number of parking spaces provided in developments near transit.		City of Alton
	b) Consider an incentive for or a requirement to provide spaces for bikes and car-share in new developments as well as sidewalks leading from the City sidewalk system to the front door of the development.		City of Alton
	c) Encourage developers to unbundle living units and parking spaces and eliminate the assignment of specific stalls to specific occupants, thus pooling the available spaces and reducing the total requirement.		City of Alton
	d) Investigate a payment option for developers in lieu of parking spaces.		City of Alton
★	Encourage Alton businesses to adopt strong employee commuting and telecommuting programs, providing resources and incentives to reduce the number of single occupant auto commuters in and out of Alton.		
	Reduce car-ownership by encouraging residents and employers to participate in car-share programs.		
	a) Support car-share programs by expanding designated parking for car-share vehicles in city garages, high density neighborhoods, at new developments and along transit lines.		City of Alton
★	b) Increase awareness of car-share program benefits among Alton residents and businesses.		City of Alton
	Reduce vehicle emissions.		
	a) Encourage taxi companies, local shuttle services and school buses to convert to hybrids or other fuel-efficient vehicles.		City of Alton

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<p>b) Investigate the bus routes to the shopping district at Alton Square Mall, the Parkway, Downtown, Upper Alton, and North Alton</p>		<p>City of Alton, Madison County Transit, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association</p>
<p>c) Consider modifying City Fleets to include stricter vehicle maintenance standards.</p>		<p>City Council</p>
<p>d) Consider offering a subsidy (potentially through a federal grant) to local businesses that purchase hybrid or highly fuel efficient vehicles.</p>		<p>City Council</p>
<p>e) Where feasible, implement traffic-calming and speed reduction strategies that reduce unnecessary stops and starts to reduce greenhouse gas emissions.</p>		<p>City Council</p>
<p>★ f) Create a city-wide Anti-Idling Ordinance and consider expanding it to apply to all vehicles.</p>		<p>City of Alton</p>
<p>★ g) Connect residents and businesses to resources and information that increases awareness around the environmental effects and costs of idling.</p>		<p>City of Alton and IL EPA</p>
<p>★ Investigate the feasibility of an "EcoPass" for every Altonian, valid for no fare when boarding within Alton on Madison County Transit Buses. When boarding outside of Alton, regular fares would apply.</p>		
<p>★ Recommend and support measures that reduce transportation-related greenhouse gas emissions.</p>		
<p>a) Support efforts to improve public transit connections.</p>		<p>City of Alton</p>
<p>b) Encourage walking and biking to school by designating routes.</p>		<p>City of Alton and Alton School District</p>
<p>c) Facilitate sidewalk enhancements and maintenance.</p>		<p>City of Alton</p>
<p>d) Facilitate the installation of sheltered, secure bike racks downtown, uptown, and at transit stations.</p>		<p>City of Alton, Alton Marketplace, and Madison County Transit</p>
<p>e) Facilitate the full implementation of the City Bicycle Plan, with promotion of viable bike routes, including designated lanes.</p>		<p>City of Alton and Sierra Club</p>

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<p>f) Work with the Madison County Transit to better coordinate transit services, eliminate duplication, and expand services where feasible.</p>		<p>City of Alton, Madison County Transit</p>
<p>g) Evaluate and investigate a fee structure for public on-street and off-street parking in Alton’s commercial districts and support efforts to equitably account for and capture the true cost and market rate for parking.</p>		<p>City of Alton</p>
<p>Expand public transit as a viable option for commuting to work, home, and entertainment.</p>		
<p>a) Work with Madison County Transit to improve bus stops, concrete pads, benches, shelters, and route and schedule information.</p>		<p>City of Alton and Madison County Transit</p>
<p>b) Continue to support the development and expansion of the Alton stop on the high speed rail to Chicago.</p>		<p>City and State Officials</p>
<p>Increase affordable housing options and resources in Alton as a mechanism to reducing vehicle travel.</p>		
<p>a) Consider adopting a housing policy goal for Alton’s housing stock (measured in terms of affordability) to mirror the incomes paid by Alton-based employers to their workforces.</p>		<p>City Council and Community Development</p>
<p>b) Consider strengthening Alton’s housing programs to insure that affordable housing is made available when new developments are built.</p>		<p>City Council and Community Development</p>
<p>Collect and track data on Alton travel trends, including vehicle miles traveled, transit boardings, and the number of residents that commute via bike and foot.</p>		
<p>a) Consider collecting odometer readings on vehicle registration applications.</p>		<p>City of Alton</p>
<p>b) Work with the City of Alton Public Works to obtain data collected through the maintenance development process.</p>		<p>City of Alton</p>
<p>c) Work with Amtrak and Madison County Transit to obtain data on travel trends</p>		<p>City of Alton, Madison County Transit, and Amtrak</p>

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Reduce City fleet vehicle emissions.			
	a) Continue to replace higher emitting vehicles with vehicles that meet or exceed the most current Environmental Protection Agency (EPA) emission standards.		City of Alton
★	b) Ensure that the vehicle purchased “fits” the size of the job that is intended.		City of Alton
★	c) Where feasible, pool City vehicles as opposed to assigning vehicles to various Departments and Divisions to improve efficiency of the fleet.		City of Alton
	d) Investigate the feasibility of using car-share vehicles to reduce the size of the City's fleet.		City of Alton
	e) Offer bicycling and walking as an option, where feasible, within Police and Parking Enforcement operations to reduce fleet size.		City of Alton
★	f) Consider enacting a city-wide Anti-Idling Ordinance to include City vehicles.		City Council and City of Alton
	g) Start retrofitting all viable City vehicles with emission reduction technology.		City of Alton
★	h) Continue to provide staff with resources and information to increase awareness around the environmental effects and costs of idling.		City of Alton
	i) Investigate the feasibility of implementing planned routes that minimize the number of left hand turns as a method to reduce idling for City service vehicles.		City of Alton
	j) Investigate the feasibility of replacing existing City vehicle fleet with hybrids and other cleaner vehicles.		City of Alton

Energy Efficiency and Buildings

The following strategies focus on: reducing emissions related to electric and natural gas use (improve energy efficiency in residential, commercial, institutional, and industrial buildings) and reducing emissions related to electric and natural gas use in public places (City-owned and operated buildings, parks, parking lots, garages, and streets).

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	Recommended Strategy		Partners for Implementation
★	Reduce emissions related to electric and gas use in commercial, institutional, and industrial buildings.		
Energy Efficiency Through Utility Programs			
	a) Encourage businesses to participate in programs that allow users to manage their energy use and take advantage of real-time pricing, if feasible.		City of Alton, Ameren, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association
	b) Encourage businesses to participate in Ameren’s Act on Energy program		City of Alton and Ameren
★	c) Work with Ameren to increase awareness of and encourage businesses to participate in Ameren’s commercial energy efficiency incentive programs. Achieve program participation from 5-15% of the businesses; request Ameren assistance in tracking participants and energy savings.		City of Alton and Ameren
Business Community Outreach			
	d) Launch a community awareness campaign to promote the installation and use of programmable thermostats as an energy saving mechanism to small businesses, non-profit organizations, and public agencies.		City of Alton, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association
★	e) Reduce heating and cooling loads by promoting light-colored roofs and paving materials, planting trees, and increasing vegetative cover (on roofs and walls).		City of Alton, Sierra Club, SIU Edwardsville

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★	f) Work with the largest local businesses, industrial and institutional energy consumers to establish and meet energy-efficiency and greenhouse gas emission reduction targets; encourage businesses to benchmark emissions through membership in the EPA Climate Leaders Program (free and voluntary).	City of Alton and Riverbend Growth Association
	g) Encourage the use of energy-service performance based contracts, where appropriate, by businesses, government, and non-profit agencies.	City of Alton, IL DCEO, and SEDAC
	h) Encourage developers and contractors to exceed the minimum requirements established by the International Energy Conservation Code (IECC) when building or renovating.	City of Alton, Community Development and IL DCEO
	i) Work with the state to increase awareness of and encourage schools and affordable housing providers to participate in the IL Department of Commerce and Economic Opportunity's (IL DCEO) energy efficiency incentive programs.	City of Alton and IL DCEO
	j) Promote opportunities to improve operations and maintenance practices in local buildings, such as the Building Operator Certification (BOC) training.	City of Alton and IL DCEO
	k) Encourage local retailers to stock and promote Energy Star® products and promote these products within the community.	Energy Star®, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association
Energy Efficiency Resources		
★	l) Develop and maintain a community resource guide for energy efficiency, renewable energy and green building grants, tax incentives, and technical resources.	City of Alton, Community Development, SEDAC, IL DCEO, and EPA

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★	m) Help small businesses, non-profit organizations, residences, and public agencies access energy conservation services through the Smart Energy Design Assistance Center (SEDAC) and the IL DCEO; track participants.	City of Alton, IL DCEO, SEDAC, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association
★	n) Promote the weatherization program that is available through Madison County to low-income households and senior citizens.	City of Alton and Madison County
★	o) Provide training, education, and general outreach opportunities to residents and businesses.	City of Alton, North Alton Godfrey Business Association, Alton Marketplace, Upper Alton Business Association, and local Colleges and Universities
Codes, Policies, and Legislation		
★	p) Support legislation or programs that require or provide incentives for existing commercial and buildings that achieve Leadership in Energy and Environmental Design for Existing Buildings (LEED-EB) Certification or an Energy Star® qualified rating.	City Council and Climate Protection and Energy Efficiency Committee
★	q) Support legislation or programs that require or provide incentives for new construction that achieves, at a minimum, LEED Silver certification.	City Council and Climate Protection and Energy Efficiency Committee
	r) Investigate legislation and policy to reduce outdoor light pollution.	City Council and Climate Protection and Energy Efficiency Committee
★	s) Periodically review Alton's building energy code as it relates to the IECC to keep pace with improvements in building technology.	City Council and Community Development

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★	t) Periodically review Alton’s residential building codes as they relate to energy efficiency.	City Council and Community Development

Renewable Energy Resources

Renewable energy is any form of energy that is naturally replenished. Examples include: wind, solar, geothermal, and hydroelectric. As opposed to fossil fuel-based energy, renewable resources are "clean" and do not produce GHG emissions. Renewable energy could help reduce not only our emissions but also our dependence on fossil fuels. A cornerstone of the Alton Climate Action Plan, this set of recommendations could involve all levels of the community, from individual citizens to city government.

Recommended strategies focus on: use of biofuels (E85 ethanol, biodiesel, vegetable oil, methane from landfills, etc); use of wind and solar energy (wind turbines, solar photovoltaic [electricity producing], solar thermal [water heating device], and zoning changes to encourage use); off-peak thermal storage (esp. for large buildings, store energy for cooling at off-peak electric or gas hours); and converting waste to energy. While these are lofty goals, they are important to investigate for possible use because of their enormous potential for reducing Alton's overall GHG emissions.

	Recommended Strategy		Partners for Implementation
	Reduce emissions related to motor fuel use in commercial and residential applications through the use of bio-fuels.		
	a) Support efforts to make biodiesel commercially available to residents and businesses.		City of Alton and IL DCEO
	b) Encourage residents to switch from regular gasoline and diesel fuels to bio-fuels if feasible.		City of Alton and IL DCEO
	c) Investigate the feasibility of purchasing bio fuels for use in not only municipal vehicles, but also by Alton residents and businesses as well.		City of Alton and IL DCEO
★	Continue to reduce emissions related to motor fuel use by City fleet through the use of bio-fuels.		
	a) Investigate the feasibility of retrofitting fleet vehicle fuel tanks and heating systems to run on waste vegetable oil (WVO).		City of Alton

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★	Reduce emissions related to electric and gas use in buildings through the use of renewable energy.		
★	a) Investigate the feasibility of wind power generation.		City of Alton, and IL DCEO
★	b) Encourage residents to consider and install solar thermal panels for hot water heating at their homes.		City of Alton and Community Development
	c) Investigate the feasibility of purchasing solar power through a solar energy service provider as a way to finance solar electricity generation at City facilities.		City of Alton
	d) Encourage businesses and institutions to install solar PV systems as feasible.		City of Alton and Community Development
	e) Consider the installation of solar thermal panels at City facilities that use large quantities of hot water, such as fire stations.		City of Alton and IL DCEO
	f) Investigate the feasibility of using hydroelectric power generated at the Melvin Price Locks and Dam		City of Alton, Corps of Engineers, and Sierra Club
★	g) Address zoning and permitting barriers to the installation of renewable energy applications in the residential and commercial building sectors.		City of Alton and Community Development
	Reduce emissions related to electric and gas use in commercial and municipal buildings through the use of off-peak thermal storage.		
	a) Support efforts to utilize peak thermal storage systems, which provide a means for storing thermal energy acquired from electricity purchased at off-peak demand times and from other fuel sources such as waste heat and solar energy, at commercial, institutional, and municipal buildings.		City of Alton and Community Development
	Reduce emissions related to electric and gas use in commercial and municipal buildings by converting waste to energy.		
	a) Investigate the feasibility of utilizing a thermal-to-energy (plasma arc gasification) conversion system to provide electricity to multiple buildings in Alton.		City of Alton

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	b) Investigate the feasibility of utilizing a non-thermal (anaerobic digestion) conversion system to provide electricity to multiple buildings in Alton.		City of Alton

Waste Reduction and Recycling

Waste reduction and recycling is referenced in three steps: reduce, reuse, and recycle. Reduction is the most important step: buying and using less; selecting products that have less packaging; using durable rather than disposable items. Reuse is next: donating used goods to a charitable group; maintaining and repairing rather than replacing broken items. Last, recycle what cannot be reduced or reused. By implementing these three steps, Alton’s waste could be cut significantly.

The recommended strategies for reducing waste focus on: waste reduction (commercial and residential) and increasing participation in recycling; recycling of construction/demolition waste; keeping clothing and fabric out of landfills; and waste reduction and increased recycling in public places.

	Recommended Strategy		Partners for Implementation
★	Increase residential waste reduction and recycling participation efforts.		
★	a) Expand and support efforts to increase community awareness around recycling.		City of Alton and Allied Waste
★	b) Continue to work with Allied Waste to expand recyclable material collection programs for residents in Alton, including electronic waste.		City of Alton, Allied Waste, and WITS, Inc.
★	c) Connect residents with resources for recycling materials not collected through Alton's ongoing recycling programs.		City of Alton and Allied Waste
	d) Encourage residents to compost at home.		City of Alton and U of I Extension Office
	e) Continue to evaluate the residential charge for waste collection and support efforts that equitably account for and capture the true costs of waste disposal, retaining free recycling for residences.		City Council
★	Increase commercial waste reduction and recycling participation efforts.		
★	a) If a commercial franchise is adopted, ensure implementation includes a strong recycling component.		City Council

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<p>b) Work with businesses to identify resources and strategies for reusing and reducing waste.</p>	<p>City of Alton, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association</p>
<p>★ c) Encourage businesses to begin or increase their recycling efforts.</p>	<p>City of Alton, North Alton Godfrey Business Association, Alton Marketplace, Upper Alton Business Association, and Sierra Club</p>
<p>d) Identify barriers to recycling in the commercial sector and support efforts to overcome the barriers identified.</p>	<p>City of Alton, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association</p>
<p>e) Continue to support and encourage recycling efforts through Alton School District.</p>	<p>City of Alton, Alton School District, and Madison County Recycling Department</p>
<p>f) Encourage retailers to offer incentives to customers that bring their own shopping bags.</p>	<p>City of Alton, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association</p>
<p>★ g) Investigate a tax or ban on single-use plastic bottles and plastic bags in order to discourage usage; support voluntary efforts to reduce use.</p>	<p>City Council, North Alton Godfrey Business Association, Alton Marketplace, and Upper Alton Business Association</p>
<p>★ h) Encourage the largest institutions to set specific goals for reducing, recycling, and reusing materials.</p>	<p>City of Alton</p>
<p>Increase the reuse and recycling of construction and demolition waste.</p>	
<p>a) Consider establishing a city-wide recycling rate for all construction and demolition projects.</p>	<p>City Council, City of Alton, Community Development and Allied Waste</p>

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★	b) Encourage businesses and residents to utilize "deconstruction" services when undertaking demolition and renovation projects. "Deconstruction", as opposed to demolition, is the selective dismantlement of building components, specifically for re-use and recycling.	City of Alton and Community Development,
Keep clothing and fabric out of the landfill.		
	a) Promote and support the efforts of local companies who have created a market for resale of used clothing.	City of Alton, Upper Alton Business Association, North Alton Godfrey Business Council, and Alton Marketplace
	b) Encourage residents to "recycle" clothing and fabric through special events, clothing drop boxes, resale clothing shops, and door-to-door charity clothing collection drives.	City of Alton
★ Increase waste reduction and recycling participation at City buildings, parks, and events.		
	a) Work with City departments to identify resources and strategies for reducing waste.	City of Alton
★	b) Ensure all departments have the resources and information necessary to recycle.	City of Alton
	c) Provide purchasing specifications and guidelines on green products in the City's purchasing policies.	City of Alton
	d) Encourage City departments to purchase recycled-content and durable, long lasting products whenever feasible.	City of Alton
★	e) Support efforts to increase recycling in public spaces and at events.	City of Alton
	f) Leverage state and federal funding to create programs that encourage Alton to reduce, reuse, and recycle.	City of Alton and IL DCEO
	g) Increase community awareness around best practices and resources for waste reduction at events.	City of Alton
★	h) Consider a recycling requirement as part of City permits for special use, festivals, picnics, block parties, etc.	City of Alton

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Food Production and Transportation

Food can travel up to 5,000 miles before reaching the end user, generating GHG emissions from transportation in the process. In addition, food packaging represents up to 75% of a food item’s embodied energy, with a hefty amount of associated emissions. It is important to acknowledge the impact that food has on global GHG emissions and it is therefore included in the Alton Climate Action Plan.

This section is primarily aimed at encouraging citizens to lower emissions related to production and transportation of food. By eating locally grown foods, consumers not only reduce the carbon footprint of that food but also support regional/local growers. Efforts to improve the connection between local growers and consumers include the creation of farmer’s markets or food co-ops (commitment to consumer education, product quality, member control, and sale of produce grown locally [usually family farms]). While indirectly reducing emissions, it allows individuals to make a change through their day-to-day decisions.

	Recommended Strategy		Partners for Implementation
	Reduce emissions related to the production and transportation of food.		
★	a) Support and encourage efforts to grow more food in Alton.		City of Alton and Community
★	b) Promote and continue to expand the Alton Farmers Markets		City of Alton and Alton Marketplace
	c) Work with the community to increase the amount of local and healthy food served in local institutions and food establishments.		Community, City of Alton, and Sierra Club
	d) Promote and support educational programs that address food-related health and environmental issues.		Alton School District, Lewis and Clark Community College, and Sierra Club
	e) Complete a community food assessment, inventorying local food resources and community access.		City of Alton
★	f) Regularly publish articles in the local papers on food related environmental and health issues.		Climate Protection and Energy Efficiency Committee
	g) Encourage the establishment of a food co-op in Alton.		City of Alton, Riverbend Growth Association, and Community

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h) Encourage restaurants and institutions to compost.	City of Alton, Lewis and Clark Community College, U of I Extension, and Sierra Club

Forestry, Prairie, and Carbon Offsets

All of the previous sections focus on reducing the creation of GHG emissions. This section instead focuses primarily on compensating for (offsetting) emissions and on carbon sequestration.

It is estimated that planting one tree will offset GHG emissions by about 730kg of CO₂ over the life of the tree. Additionally, numerous climate-appropriate landscaping alternatives offer the potential to sequester carbon and lower Alton's GHG emissions. A fund to support local offset projects can also help Alton achieve its GHG reduction goal. The inclusion of the following strategy is essential to a diverse, well-balanced plan.

Recommended Strategy	Partners for Implementation
Optimize tree planting and protect existing trees for maximum carbon storage/sequestration and energy savings.	
★ a) Educate and enforce the City's Urban Forestry Program.	City of Alton
b) Explore completing a tree hazard and health assessment inventory project.	City of Alton
c) Update the assessment of municipal trees as staffing and budgets allow.	City of Alton
d) Support the tree planting and maintenance program	City of Alton
★ e) Regularly publish articles in the local papers on the benefits of urban trees and tips on planting and maintenance.	Climate Protection and Energy Efficiency Committee and City of Alton

Policy and Research

In order to understand climate change and the best practices that can be implemented in the City of Alton, research needs to be done continually on how best to achieve these goals. Reduction strategies in this

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section focused on: keeping up-to-date on climate change efforts from other municipalities/communities, tracking reductions strategies and effectiveness, encouraging citizens to influence policy by being proactive, seeking out and leveraging funding for local efforts, and supporting regional and national efforts to help curb greenhouse gas emissions

	Recommended Strategy		Partners for Implementation
	Track and disseminate information on climate change trends, policies and best practices.		
★	a) Annually compile and update Alton's greenhouse gas emissions inventory, tracking related waste, energy, economic, and environmental data.		Sierra Club and Local Colleges and Universities
★	b) Prepare a progress report on the Alton Climate Action Plan periodically and propose and adopt modifications as needed.		Climate Protection and Energy Efficiency Committee
	c) Provide Alton residents and businesses with the resources, information, and tools necessary to assess their greenhouse gas emissions and emission reductions.		City Staff, Growth Association, Upper Alton Business Association, North Alton Godfrey Business Council, and Alton Marketplace
★	d) Track relevant regional, national, and international best practices to ensure that the Alton Climate Action Plan is being implemented as effectively and efficiently as possible.		City of Alton, Sierra Club, and FOCUS St. Louis
	e) Support and adopt a greenhouse gas reduction goal that extends beyond the timeline established by the U.S. Mayors Climate Protection Agreement.		City Council and Climate Protection and Energy Efficiency Committee
	Ensure that policy decisions at all levels seek to reduce greenhouse gas emissions.		
	a) Integrate the initiatives and strategies outlined in the Alton Climate Action Plan into future policies and comprehensive plans as relevant.		City of Alton
	b) Review major policies and programs in the early stages of development to identify ways to reduce related greenhouse gas emissions.		City of Alton

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<p>c) Develop and adopt procurement guidelines for City secured goods and services that contribute to a reduction of the community's greenhouse gas emissions.</p>		<p>City of Alton</p>
<p>d) Review existing ordinances and policies to ensure support for the Alton Climate Action Plan initiatives and strategies.</p>		<p>City of Alton</p>
<p>Secure and leverage funding for Alton Climate Action Plan initiatives and strategies.</p>		
<p>a) Identify local, state and federal grants and resources to support and fund initiatives and strategies outlined in the Alton Climate Action Plan.</p>		<p>City of Alton, EPA, IL DCEO, East-West Gateway, FOCUS St. Louis, Sierra Club and Local Colleges and Universities</p>
<p>b) Identify and evaluate innovative and creative funding sources for implementing the initiatives and strategies outlined in the Alton Climate Action Plan.</p>		<p>City of Alton, IL DCEO, East-West Gateway, FOCUS St. Louis, Sierra Club and Local Colleges and Universities</p>
<p>★ c) Encourage and support City and community partnerships that leverage existing funds and resources to implement the initiatives and strategies outlined in the Alton Climate Action Plan.</p>		<p>City Council</p>
<p>★ d) Acknowledge exemplary community efforts and initiatives that support the reduction of Alton's greenhouse gas emissions.</p>		<p>City Council and Climate Protection and Energy Efficiency Committee</p>
<p>★ e) Assign and support a City liaison to coordinate the implementation of the Alton Climate Action Plan.</p>		<p>City Council</p>
<p>Support local, state and national efforts to mitigate climate change.</p>		
<p>a) Participate in local, state, and national initiatives and programs that provide information, tools and resources for the implementation of the Alton Climate Action Plan.</p>		<p>City of Alton, Sierra Club, and FOCUS St. Louis</p>
<p>b) Encourage and support greenhouse gas reduction efforts at the regional, state, and national level.</p>		<p>City of Alton, East-West Gateway, FOCUS St. Louis, State and Local Officials, and Sierra Club</p>

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<p>c) Support the expansion of civic, educational, religious, and neighborhood institutions that specifically address climate change.</p>	<p>City Council, City of Alton, Alton School District, Private Schools, and Local Churches</p>
<p>d) Share Alton's successes and lessons learned with St. Louis-area communities through regional meetings and conferences.</p>	<p>City of Alton, FOCUS St. Louis, and East-West Gateway</p>

Education and Engagement

In addition to providing leadership, the City of Alton needs to foster and support an environment that is conducive to citizen-based efforts. Those working to mitigate the effects of climate change should be supported in their efforts in helping make the Alton Climate Action Plan come to life in hands-on community efforts. This section focuses on public education around climate issues and details methods to engage the public in addressing these issues. Recommended strategies focus on engaging big businesses, disseminating information through local events, community-based action, and training for City employees.

	Recommended Strategy	Potential GHG Reduction	Partners for Implementation
★	<p>Empower the community to take action around climate change.</p>	n/a	
	<p>a) Encourage residents, businesses, churches, nonprofits, etc., to convene working groups with the goal of helping to implement the strategies outlined in the Alton Climate Action Plan.</p>		<p>Citizen Volunteers, Riverbend Growth Association, Alton Marketplace, Upper Alton Business Association, North Alton Godfrey Business Council, and Local Churches</p>
★	<p>Gain support from the largest Alton institutions and businesses for the implementation of the Alton Climate Action Plan.</p>		

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★	a) Support efforts to convene a summit of the largest Alton institutions and businesses (including the City) to discuss and gain support for the Alton Climate Action Plan.	City Council, State and Federal Officials, Alton School District, Riverbend Growth Association, Alton Marketplace, Upper Alton Business Association, North Alton Godfrey Business Council, Sierra Club, and local Colleges and Universities
	b) Assign summit participants to a working group that will be tasked with sharing resources, information, and strategies for implementing the Alton Climate Action Plan.	City Council, State and Federal Officials, Alton School District, Riverbend Growth Association, Alton Marketplace, Upper Alton Business Association, North Alton Godfrey Business Council, Sierra Club and local Colleges and Universities
★	Use festivals, markets and celebrations to promote and model "green practices".	
	a) Support community-based outreach efforts to disseminate information and resources around Alton Climate Action Plan recommendations at community and City-sponsored events.	Community, City of Alton, Sierra Club, Hayner Library, Local Churches, and Alton School District
	b) Continue to support the Mississippi Earthtones Festival.	City of Alton, Sierra Club, and Alton Marketplace
	c) Support City-Wide Litter Cleanups	City of Alton

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	Connect residents, businesses, and City staff to workshops, training, and lectures on green topics.		
★	a) Support the development of a "Speakers Bureau" and encourage community members and businesses to participate as speakers in their areas of expertise. This could include balancing energy efficiency with historical character.		City of Alton, Hayner Library, and Local Colleges and Universities
	b) Connect speakers in the Speakers Bureau with community audiences based on subject matter and interest.		City of Alton, Hayner Library, and Local Colleges and Universities
	c) Encourage efforts to develop and implement a series of ongoing courses on carbon reduction strategies at public venues such as the libraries, Ecology Center and community centers.		City of Alton, Hayner Library, and Local Colleges and Universities
★	d) Develop and implement a "Green Training" initiative for City staff to ensure understanding of and support for the Alton Climate Action Plan.		City of Alton

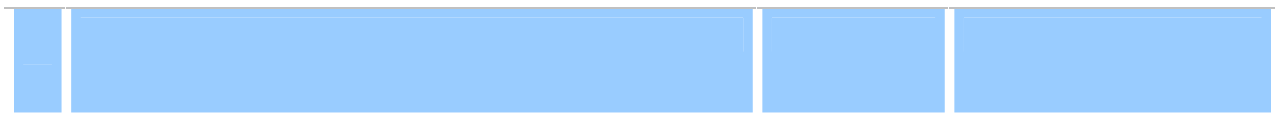
Communications and Public Relations

Communication is essential to any campaign that seeks to inform, educate and motivate behavior change in a community. Recommended strategies in this section include: promotion, marketing, and the development of messaging addressed to the general public that will help not only involve citizen but keep the public informed about the process of implementation and action of the City's effort to reduce GHG emissions.

	Recommended Strategy		Partners for Implementation
★	Disseminate information to the community about climate change and the Alton Climate Action Plan and promote community and City efforts as pertinent.		
★	a) Support the development of a campaign slogan, along with a theme and key messages.		Community and City of Alton
	b) Consider developing an Alton Climate Action Plan advertising campaign		Community and City of Alton
★	c) Use the City Newsletter and website to promote the Alton Climate Action Plan		City of Alton

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d) Support efforts to develop a campaign website that serves as an information resource, reflects the organizational structure of the campaign, and fosters connections and collaboration between local groups and individuals.	Community and City of Alton
★ e) Publish articles, both locally and regionally, on Alton’s efforts to reduce greenhouse gas emissions.	Climate Protection and Energy Efficiency Committee and City of Alton
f) Consider conducting a survey of Alton residents to identify current knowledge, attitudes, and behavior related to climate change among Altonians.	Community and City of Alton
★ g) Ensure information and resources related to the Climate Action Plan and climate change reaches all Alton residents, regardless of socioeconomic status.	Community, City of Alton, Local Churches, and Alton School District



★ The stars indicate initiatives that should be prioritized due to ease of implementation.

Conclusion

The Alton Climate Action Plan includes more than 200 recommended strategies for reducing GHG emissions. The strategies offer a wide variety of options for meeting Alton’s GHG reduction goals. By reducing Alton’s reliance on nonrenewable energy sources and waste, the recommendations included in this plan not only offer ample opportunities to reduce Alton’s GHG emissions, but also enhance and support the core values of the City of Alton.