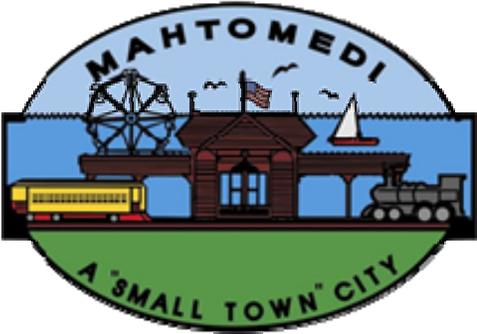


**CITY OF MAHTOMEDI
SUSTAINABILITY PLAN**



July 2011

Written and Completed by GreenCorps member Marnie McInnis and City of Mahtomedi
Environmental Commission

Introduction:

A Vision Toward a Sustainable Future

Mahtomedi is a close-knit, welcoming, and engaged city with a small town atmosphere. Our residents have strong connections with each other, our natural environment, and our local businesses and industries. We are proud of our community's unique cultural heritage relating to the Chautauqua Association, the Wildwood Amusement Park, streetcars, and summer cottages. We are widely recognized for our outstanding schools and our community celebrations and events. We have protected our natural environment and are known as a community with exceptional natural beauty. We have a vibrant downtown with a mixture of commercial, residential, and civic uses. We support our local businesses and industries. These are the "small town" qualities of Mahtomedi that we value and that we will sustain for future residents by. Mahtomedi is a prosperous and active city with a population of 7,676 residents. We recognize that in order to sustain our way of life we must view long-term prosperity and ecological health as not just two important values, but also as two intrinsically connected goals to strive for within a larger system. In future planning and development we will take actions that are ecologically sound, economically viable, and socially just and humane in order to continue our long-term cultural, ecologic and economic health and vitality indefinitely.

****Vision expanded upon from Mahtomedi Comprehensive Plan. Subject to change.***



Images courtesy of David

Wanberg

Executive Summary

This Sustainability Plan will serve as a framework for implementing environmental best practices in the city of Mahtomedi. It should be modified as new information arises, new resources are available to carry it out, and as the community's vision of sustainability changes. Consideration of the natural step model and systems thinking led the City to consider the development of this Plan as well as other environmental efforts up to this point. The GreenStep Cities recognition program is the main template for sustainable decisions that are manageable and practical for the City of Mahtomedi. The hope is that by following the GreenStep program, Mahtomedi will have a simple pathway for implementing sustainable practices that result in reduced energy costs, improved quality of life, and a desirable community. This document incorporates and expands upon the requirements of the GreenStep program under the categories of Resource Conservation, Building, Transportation, and Economic and Community Development.

This Plan complements and builds upon the City's Comprehensive Plan, which also incorporates the Natural Step Framework. The Natural Step Framework is designed to serve as basic, but complete principles that other programs, such as the Minnesota GreenStep program, can fit into harmoniously. It will provide recommendations and action steps that can help Mahtomedi become a more sustainable community.

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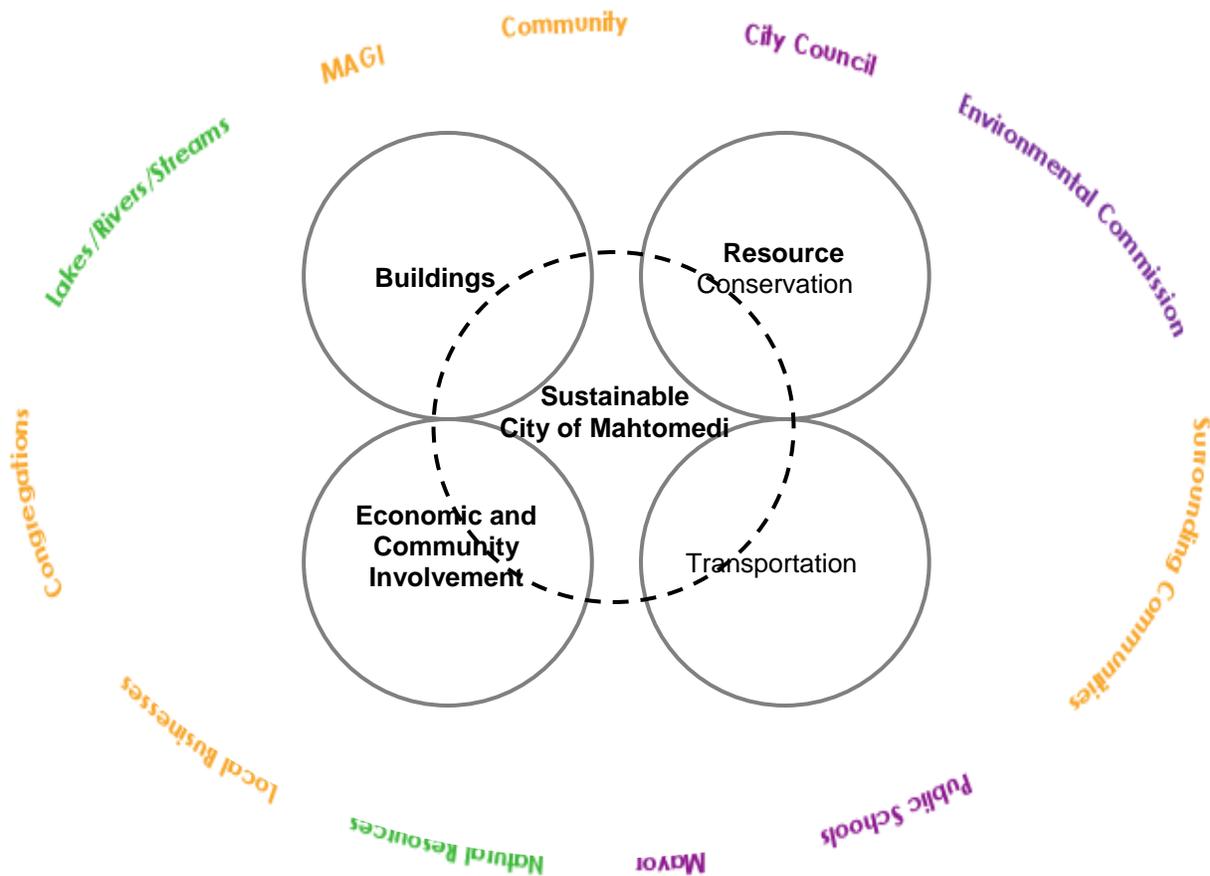
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Project Purpose

The City of Mahtomedi is working on improving the quality and health of the environment in their community several ways: building energy efficient and innovative buildings, adopting policies such as the Mayors Climate Protection Agreement to reduce greenhouse gas emissions city wide, and creating a Comprehensive Plan to analyze where they are and where they want to go. The City of Mahtomedi wants to become more sustainable, which is defined as



A sustainable city plan is a working document. To accomplish this, we must evaluate the four main categories as outlined in this document.

- Natural
- Community Based
- Governmental

Strategic Planning

Mahtomedi is taking steps towards sustainability by striving to think proactively and understand that future planning, policy making, and daily operations have a large impact on the city's environment, citizens, and economy. Therefore, these decisions must be reached using a planning process that is sensitive to environmental, social, and economic concerns. By using this Plan, Mahtomedi will find and implement sustainable options in its planning process.

By creating the Environmental Commission, Mahtomedi has a group that is responsible for endorsing and implementing an adopted sustainability plan. They can help ensure that sustainability is integrated into all City departments, and expands out to businesses and community members.

Community Involvement

Mahtomedi is working to make sustainability a part of residents daily lives. Since sustainability needs the support of citizens to be successful, Mahtomedi must put forth the effort to educate and keep citizens informed of sustainable policy decisions. This can be accomplished through the following:

- a. Strive to be a regional leader in sustainability education and community involvement.
- b. Continue to support the cooperation between the city of Mahtomedi, the school district, community interest groups, adjacent communities, and the county in sustainability efforts.
- c. Ensure representative involvement in decisions regarding future sustainability efforts through workshops.
- d. Continue to foster community support and involvement in sustainability effort by connecting with local religious groups, clubs, and local businesses.

- e. Organize sustainability events for community members, such as the annual RITE of Spring Environmental Fair.
- f. Utilize the GreenCorps program to help organize and implement community involvement activities.
- g. Continue sustainability educational tools such as "Green Talk" using web based education tools. Consider furthering web based sustainability education tools through weekly or monthly newsletters that could be sent out to residents through e-mail.
- h. Organize sustainability educational efforts using the Mahtomedi's government access channel 16 to broadcast city made or purchased sustainability education programs.

Accomplishments to date:

While Mahtomedi continues to make strides for a more sustainable city, there are considerable accomplishments to be recognized. The following are a few of the accomplishments the Environmental Commission has completed to date:

- a. Continues to team with local leaders to host the RITE of Spring environmental fair.
- b. Recommended a recycling contract with hauler.
- c. Completed an energy audit on municipal buildings and created an action plan as a result.
- d. Produces the quarterly publication, "Green Talk" for Mahtomedi residents as part of the City's newsletter.
- e. Recommended a Water Restriction Ordinance that was adopted.
- f. Advised in the construction of the new public works building with energy conserving features.
- g. Recommended an environmentally friendly purchasing policy to the City Council that was adopted.

- h. Assisted in the creation of and works to promote the Mahtomedi Area Farmer's Market.
- i. Obtained GreenStep City status, an environmental recognition program.
- j. Recommended a Wind Energy Ordinance that was adopted.

Recommendations:

Resource Conservation:

Our current consumption of natural resources is simply unsustainable. The world's population is predicted to increase significantly in the next 50 years, yet the natural resources the earth's inhabitants must rely upon for basic needs are rapidly depleting. In order to thrive into the future, the Mahtomedi community must learn to use natural resources more wisely and efficiently. To provide a baseline of Mahtomedi's current energy use, a Greenhouse Gas Audit was performed and completed in 2009. Below is an overview.

Municipal Carbon Footprint Analysis:

The city of Mahtomedi completed its carbon footprint analysis in May 2009. Software was used from ICLEI, the 'International Council for Local Environmental Initiatives', an organization that helps with local government and community sustainable development. ICLEI provides 'Clean Air and Climate Protection Software' to be used as the carbon footprint calculator. It itemizes carbon outputs into six categories: municipal buildings, vehicle fleets, parks, sanitary sewer lift stations, traffic signals, and water supply and storage. Xcel energy provided the data necessary to complete the energy portion of the audit. Below are graphs made from the completed energy audit. Please see the appendix for more details about the municipal carbon audit.

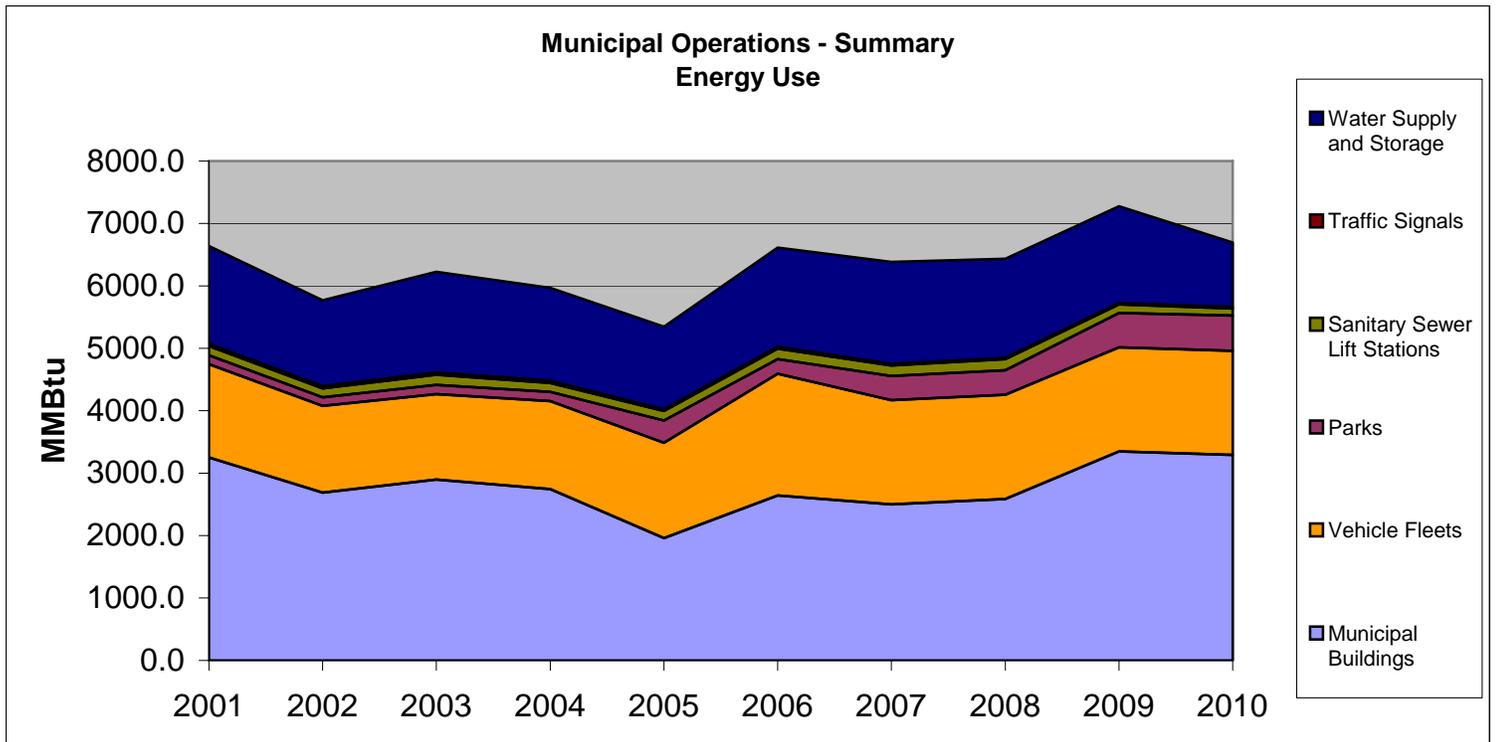


Figure 1. Total Energy Use from Municipal Sources: 2001-2010

The figure above shows the total energy use from all six municipal sources. As shown, Municipal Buildings are the highest contributor to overall energy use. Total MMBtu's from 2010 was 6696.1 MMBtu.

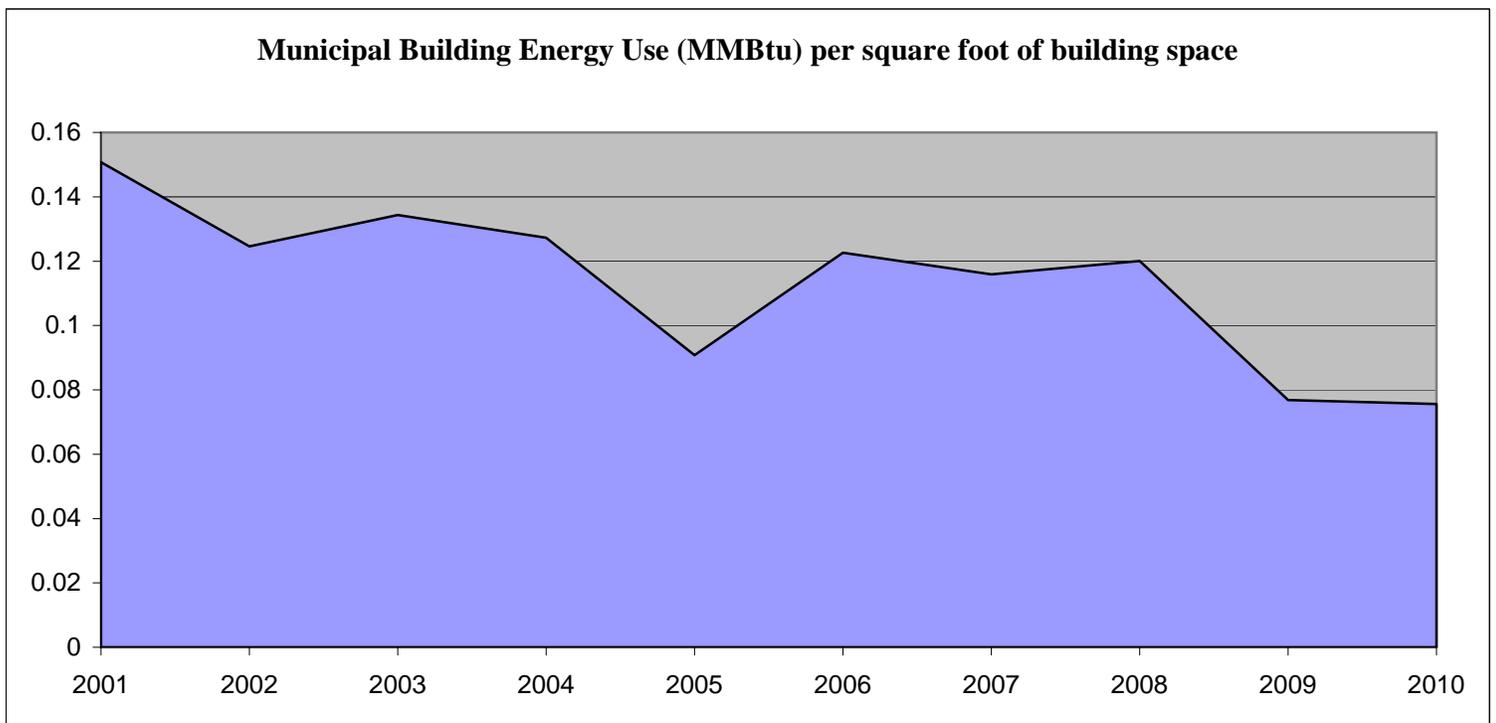


Figure 2. Energy use from Municipal Buildings per square foot of building space

Municipal buildings are the leading contributor to energy use for the city. As seen in figure two, the Public Works building is the leading contributor to energy use. The new Public Works Building, constructed in 2009, was built with energy conserving features.

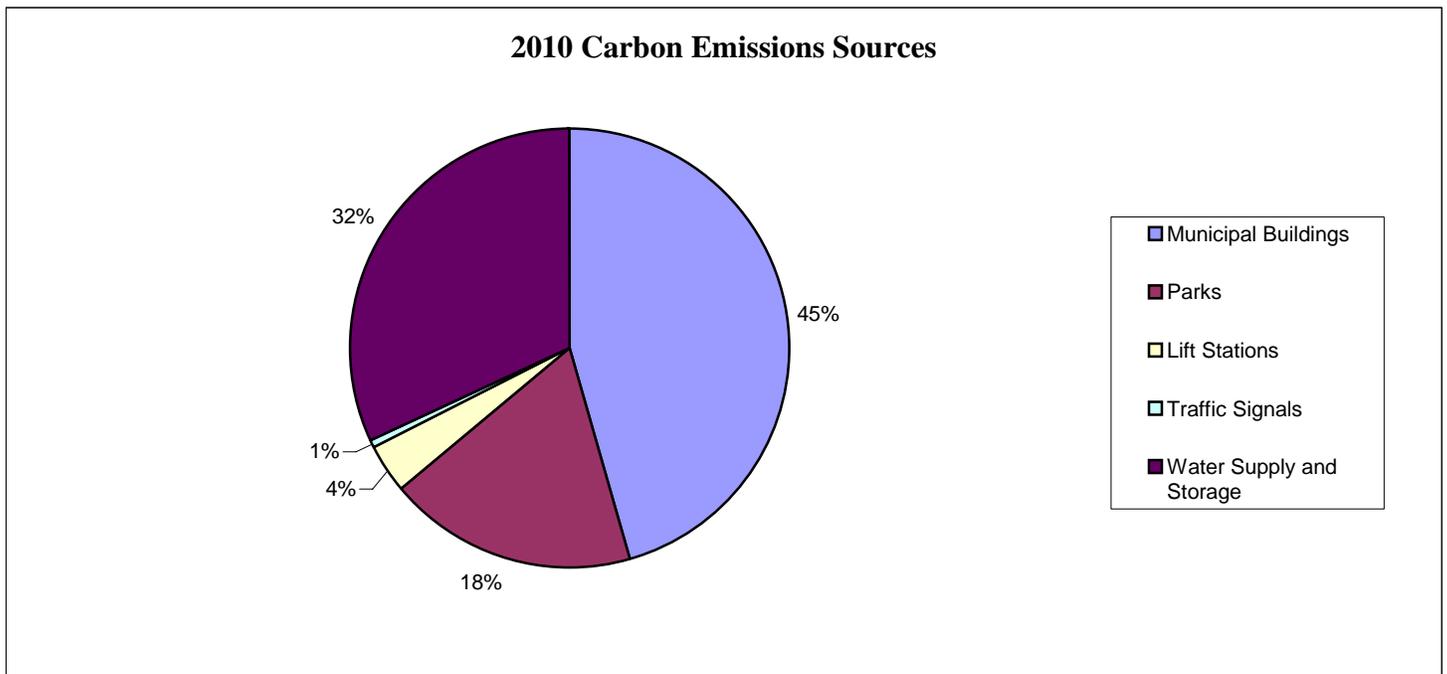
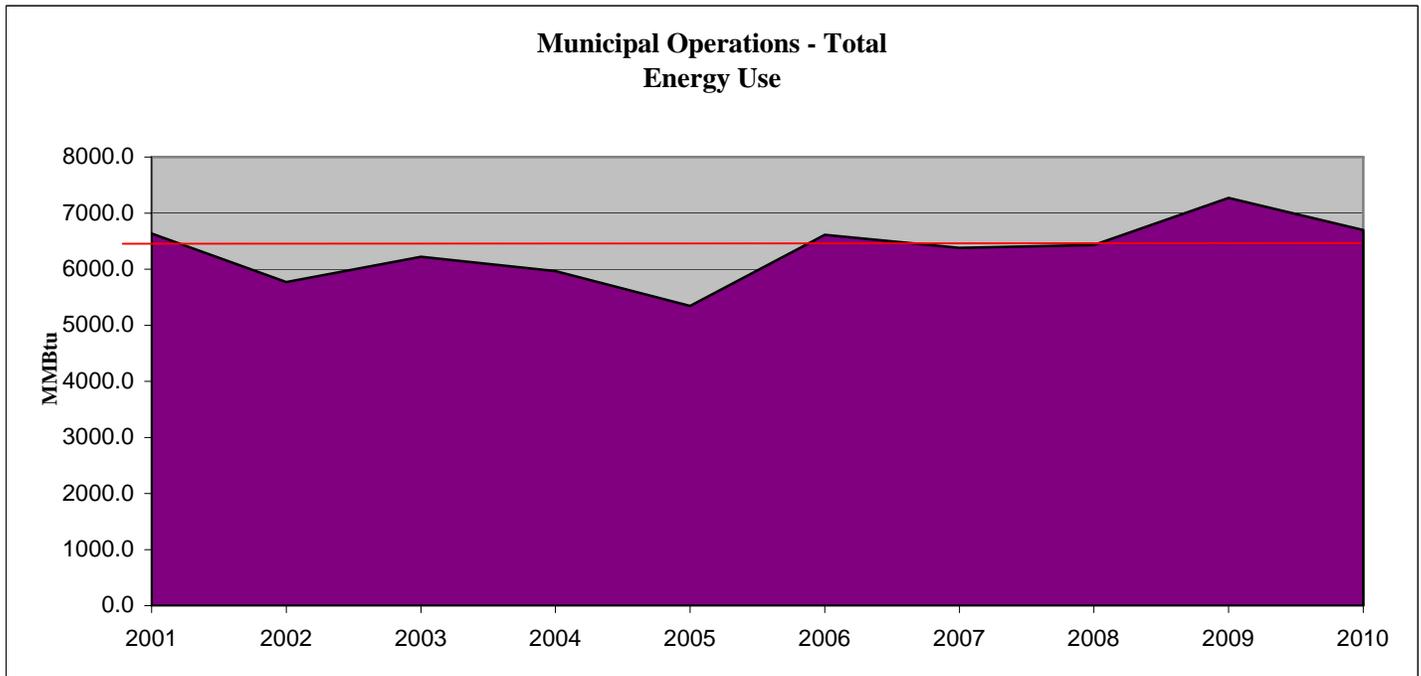


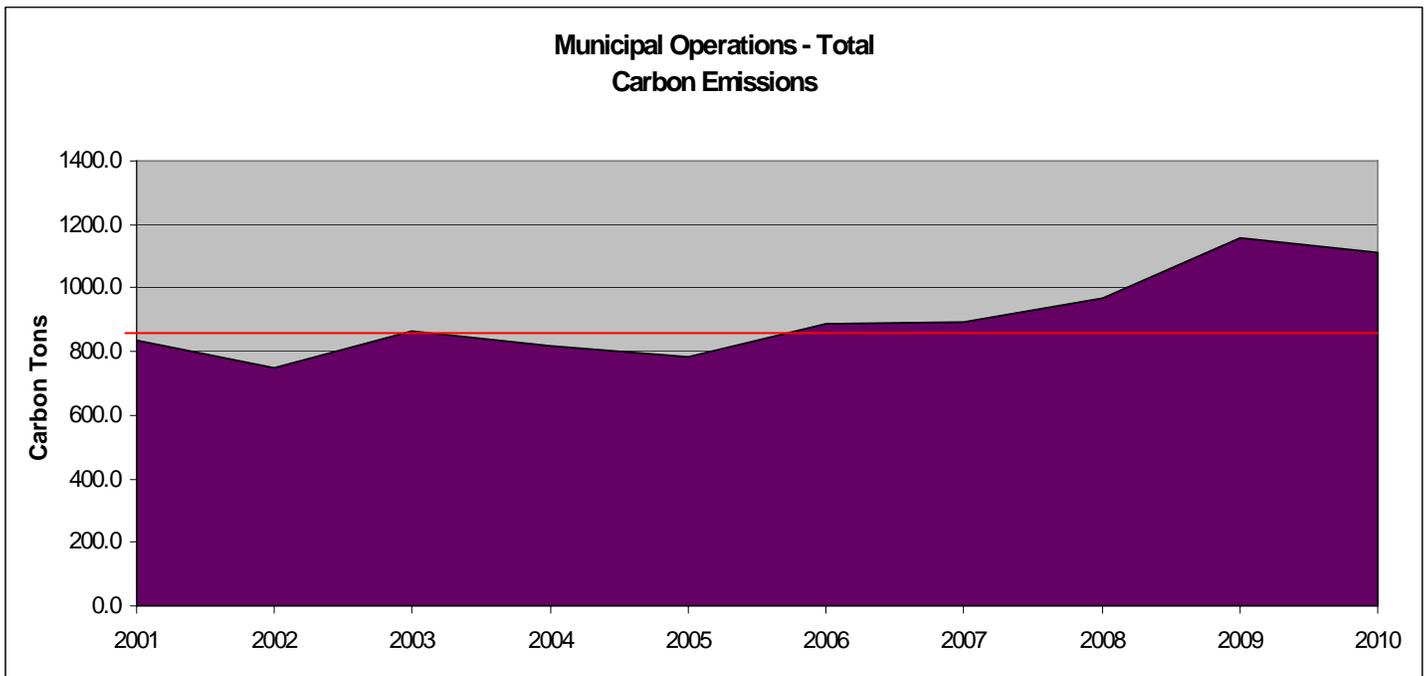
Figure 3. Carbon Emission Sources from 2010.

Figure three shows the total carbon emissions for the 2010 fiscal year. As shown, municipal buildings account for 45% of emissions, with parks accounting for the next higher amount at 32%.



*Redline denotes baseline number (average from 2001-2007).

Figure 4. Total Energy Use 2001-2010



*Redline denotes baseline number (average from 2001-2007).

Figure 5. Total Carbon Emissions 2001-2010

Figures four and five provide the total carbon emissions and energy use for the city of Mahtomedi. Some of the energy changes from 2008-2009 can be accounted for by the construction of the new Public Works facility.

Goal 1: Improve efficiency of city energy usage by 10% by 2012 and 20% by 2020.

Reducing our electricity consumption can help improve our air quality, reduce our dependence on foreign fuels, curb our greenhouse gas emissions, prevent the construction of more power plants, and save us all money on electric bills. The baseline for these reductions is the average energy use from 2001. From 2009 to 2010, the city increased its energy efficiency per square foot of building space by 8%. These conservation efforts align well with existing state and federal programs such as the MPCA's GreenStep Cities program and the EPA's ENERGY STAR program.

Implementation Strategies:

- Improve the energy efficiency of existing municipal buildings. * ¹
- Improve the efficiency of the Public Works wells and sewer lift stations through updates.

Project Lead: Public Works Department

Goal 2: Reduce Mahtomedi's water use.

Not only does excessive water use deplete our freshwater supplies, it also requires significant amounts of energy to treat, deliver water, and collect and treat wastewater. According to the EPA, letting a faucet run for five minutes requires as much energy as lighting a 60-watt bulb

¹ * Denotes the implementation strategy is in alignment with GreenStep Cities recognition. (You can put this in the Table of Contents if you create one)

for 14 hours.² Proper protection and wise use of our water resources, along with maintenance of the City's water supply system, will help sustain this system so that residents can continue to have clean, readily available water for generations to come.

Implementation Strategies:

- Conduct public education program on Mahtomedi's City ordinance for alternative watering days to reduce water consumption.
- Connect residents and businesses with education and information on reduced cost or rebated water savings devices.
- Identify the highest water use customers in the City and work with them to reduce water consumption.

Project Lead: Environmental Commission

Goal 3: Minimize the Production of Waste

Approximately one-third of all the trash that is thrown away in the U.S. is packaging, and the average American consumes about 66 pounds of packaging each year.³ If consumers, institutions, and businesses understand the lifecycle of products and materials, they will be more likely to adopt a set of best management practices that limit the amount of materials entering the waste stream.

Implementation Strategies:

- Expand upon Mahtomedi's green purchasing guidelines.

² *Environmental Protection Agency*. December 2 2010. < <http://www.epa.gov/greenhomes/Kitchen.htm>>

³ *City of Baltimore Sustainability Office*. May 4 2010. < <http://www.baltimoresustainability.org>>

- Encourage composting of food waste in schools, assisted living facilities, and local hospitality and food service industries to help create a local market for composting.*
- Reduce overall waste generation in all city operations by limiting hard copies and printing duplex and other paper reduction projects.*
- Continue to use a minimal amount of pesticides for use in public spaces.*
- Conduct public education programs to minimize the production of waste and alternate sources of recycling and reuse, such as difficult to recycle plastics.

Project Lead: Environmental Commission

Goal 4: Maximize Reuse and Recycling.

Recycling is both beneficial to the environment and helps create jobs. For every 1,000 tons of waste diverted, 4.7 jobs are created compared to only 2.5 jobs for every 1,000 tons of waste disposed.⁴

Implementation Strategies:

- Increase recycling opportunities throughout the city, including recycling receptacles in public and park spaces, gas stations, and public events
- Increase multi-family residence and business participation in single sort recycling program.
- Work with recycling vendor to increase the amount of materials recycled.

⁴ Goldman, George. *The Economic Impact of Waste Disposal*.
< <http://are.berkeley.edu/extension/EconImpWaste.pdf>>

- Preserve, reuse, and recycle buildings and related materials by promoting businesses that collect and market secondhand consumer goods in the area. *

Project Lead: Environmental Commission and Parks Commission

Resources for Success:

- MPCA: Rethink Recycling, Green Building Program
- Washington County Environmental Services and Recycling Program
- City Staff
- Association of Recycling Managers

Building:

Efficient buildings are one of the most cost effective ways to promote sustainability. To approach buildings from a sustainable standpoint, buildings should be seen as an investment to be maximized. Each building should be evaluated for potential reuse and renovation. If demolished, materials should be a priority, followed by retrofitting and providing additional day lighting wherever possible.

Accordingly, the city of Mahtomedi has initiated the process of integrating green building into their construction and maintenance of buildings in the community. The public works facility was recently built with green elements to it. It has pervious pavement, lighting sensors, and sustainable materials were used during its construction.

Goal 1: Evaluate and Maintain City buildings according to efficiency standards.

Because building efficiency can be greatly improved with several low cost measures, building efficiency is considered to be one of the ‘low hanging fruits’ of sustainability initiatives. Along with improving the efficiency of buildings, they should be maintained so they can sustain long-term use.

Implementation Strategies:

- Utilize preferred purchasing policy to purchase energy efficient fixtures and electronics. *
- Continue to audit the city's buildings using the B3 Benchmarking system. *
- Explore a city policy to evaluate all city renovation projects for sustainable opportunities. *
- Participate in state or utility programs that provide rebates or monetary assistance for energy efficiency improvements to public buildings. *

Project Lead: City Administrator, Public Works Department

Goal 2: Follow Energy Efficient Standards for non-municipal buildings.

The application of sustainable principles and green building practices is central to how sustainability will be perceived, implemented and measured. Buildings consume almost 70% of the energy produced so ensuring that buildings are energy efficient and sustainable should be a baseline goal; buildings that reduce or eliminate such high-energy demand can become the new standard.⁵ A variety of implementation strategies are included addressing new construction of existing buildings, training and education.

Implementation Strategies:

- Encourage green building opportunities for development during the building permit process for residential and commercial buildings.
- Develop standardization for green site selection and building design.

⁵ *High Performance Building Caucus*. January 2011. <<http://hpbccc.org/HPBFinal.pdf>>

- Identify existing systems (e.g., HVAC or storm water management systems) or building components that may be upgraded in situations where it is not feasible to retrofit the whole building.*
- Educate contractors and vendors about building and sustainable design practices. *

Project Lead: Environmental Commission and City Administrator

Resources for Success:

- Center for Energy and Environment
- United States Green Building Council (LEED Certification)
- MPCA – Green Building
- Xcel Energy Building Audit Program

Transportation:

The transportation sector is the fastest growing source of greenhouse gas emissions in the United States and transportation petroleum has accounted for 93% of our increase in demand for oil since 1990.⁶ Sixty-two percent of all transportation- related emissions affecting air quality and public health come from single-occupant vehicles (passenger cars, SUVs, minivans, pickup-trucks and motorcycles). Our current transportation system is economically, environmentally, and socially unsustainable. Shifting away from our reliance on single occupancy vehicles will reduce greenhouse gas emissions, improve air and water quality, reduce our dependence on foreign oil, alleviate traffic congestion, and improve public health and equity. In doing so, we can also improve our overall quality of life.

Goal 1: Promote Sustainable Transportation Infrastructure.

⁶ 21st Century Energy, Affiliate of U.S Chamber of Commerce. < <http://www.energyxxi.org>>

A well-designed street network benefits drivers, pedestrians, and cyclists. According to the MPCA, “Modest street and lane reconfigurations, attending to context sensitive street design principles and adding traffic-calming measures, can reduce speeding by 40%, accidents by more than 50% and increase the number of walkers and bikers.” One strategy to improve our transportation infrastructure is to complete the ‘Green Streets’ program. This is an EPA program striving to make streets use natural processes to manage stormwater runoff at its source. In order to complete ‘Green Streets’, roadways have efficient storm water infrastructure, remove street-trail gaps, and adopt zoning language that addresses these criteria.

Implementation Strategies:

- Complete Green Streets*
- Work with Metropolitan Council to increase public transportation ridership
- Identify street-trail gaps and remedy the areas without safe walkways with the aid of several nonprofit organizations. *
- Become recognized as a bicycle friendly community by joining the League of American Bicyclists. <http://www.bikeleague.org/programs/bicyclefriendlyamerica/>
- Implement green infrastructure such as rain gardens and other low impact development during road reconstruction projects or whenever possible.
- Adopt zoning language that aligns with ‘green streets’ strategies. *
- Recycle existing roadway structure for street reconstruction projects. *

Project Lead: City Staff

Goal 2: Make City Fleets More Efficient

By implementing a city investment, operations, or maintenance plan, a city can both save money and cut carbon emissions.

Implementation Strategies:

- Participate in Project GreenFleet to retrofit diesel vehicles. *
- Phase in the purchasing of more fuel-efficient vehicles. *
- Review the current maintenance plans to incorporate energy efficiency measures in it.

Project Lead: Public Works Department

Goal 3: Improve Transportation to Mahtomedi Schools

Improving transportation to school both involves making the school bus fleets more efficient, and discouraging individual transportation to school.

Implementation Strategies:

- Examine opportunities for Safe Routes to School. *
- Work with the school district and surrounding communities to examine the transportation policy to promote carpooling, bicycling, and walking. *
- Collaborate with the school district to make their bus fleets more fuel efficient, working with ‘Project Green Fleet.’ <http://www.projectgreenfleet.org/school-bus-fleets/how-to-participate> *

- Collaborate with the school district to encourage students to walk or bike to school.

Project Lead: Environmental Commission and City Staff

Resources for Success:

- Project Green Fleet
- Metropolitan Council Transportation Advisory Board
- Bicycle Alliance of MN
- Transit for Livable Communities
- Bike Walk Ambassadors

Economic and Community Development:

By engaging the community, citizens of Mahtomedi can learn how they can incorporate sustainable practices in their daily lifestyle. Since the topic of sustainability incorporates all aspects of life, citizens can learn about sustainability through many different outlets. By engaging people in dialogue about sustainability in work, school, or church, the process of becoming sustainable can be aided. This process requires long-term involvement of the entire community. This section details efforts of residents, religious organizations, businesses, schools, and community groups to become more sustainable. This section outlines the efforts needed to educate the community about the community's dedication to sustainability.

Goal 1: Increase community participation in activities that promote sustainability.

Since the community members are ultimately who will be impacted by the outcome of this plan, it is essential to involve them in the process of becoming sustainable. This goal addresses the need to build and sustain broad-based community support and the importance of cultivating key champions both as leaders within the community and advocates outside of it.

Implementation Strategies:

- Connect with local schools, retirement communities, and pre-education programs to promote sustainable practices such as environmental education programs, and local foods access. *
- Highlight local businesses that are being sustainable their business practices. This can be through marketing measures or business assistance. *
- Increase public visibility with sustainability decisions made by the City of Mahtomedi. *
- Report progress to city residents in a yearly 'Green Talk' article.*
- Connect with local environmental groups from churches or other community organizations to work together on environmental efforts.

Project Lead: Environmental Commission

Goal 2: Promote sustainability to local businesses.

A vital community relies on strong, supported local businesses. One way to do that is through the promotion of green business practices. It is beneficial for both the community and the businesses as often the benefits go beyond the environment. The City of Mahtomedi is committed to assisting local businesses with implementing sustainable practices and products whenever possible.

Implementation Strategies:

- Connect with local businesses with assistance providers, including utilities, who conduct personalized energy, environmental sustainability, or waste audits.*
- Pursue areas that could potentially be considered contaminated sites and offer assistance for green businesses and future development.*
- Highlight green businesses activities that certify under a local, regional or national program.*
- Encourage the participation of businesses using trucks in at least one of the following:
 - Clean Air Minnesota's Project GreenFleet.
 - U.S. EPA's SmartWay Transport program.
 - Installation of auxiliary power units that reduce truck and bus idling. *

Project Lead: Environmental Commission and City Staff

Goal 3: Improve Access to Local Foods.

Supporting local foods provides many benefits to individuals and the community they live in. Individually, people can benefit from local foods because it is more healthful and contributes to decreased individual carbon footprint. Local foods benefit the community as a whole because it supports local farmers and improves soil quality.

Implementation Strategies:

- Explore increasing the size of the community garden to allow more people to become members. *
- Encourage community members to garden in their yards. This can be done by means of hosting a community plant exchange.

- Provide public awareness about the importance of local, organic foods. Actively promote the Mahtomedi Farmer's Market. *
- Increase public awareness and use of local Community Supported Agriculture (CSA) farms.

Project Lead: Environmental Commission

Goal 4: Support local efforts for renewable energy development

Minnesota is currently highly dependent on outside energy sources. By relying less on outside energy and more on local, renewable energy Minnesota can increase community resilience and cut greenhouse gas emissions. In order to help, we can aid local groups in the effort to develop renewable energy in the community.

Implementation Strategies:

- Support the Zephyr Wind Project with their efforts.
- Explore supporting zoning codes that promote renewable energy development.
- Encourage the use of solar and geothermal energy

Project Lead: Environmental Commission and City Staff

Resources for Success:

- Minnesota Renewable Energy Society
- MAGI
- School District
- Local Religious Institutions

Existing Conditions, Indicators and Progress:

- **U.S. Conference of Mayors Climate Protection Agreement**

An agreement signed by over 1000 mayors in all 50 states to meet the following three criteria: meet or beat the Kyoto Protocol targets, urge state and federal lawmakers to beat the Greenhouse gas reduction levels as proposed in the Kyoto Protocol and urge Congress to pass legislation creating a national carbon Cap and Trade System.

[U.S. Conference of Mayors Climate Protection Agreement](#)

- **Comprehensive Plan**

The Comprehensive Plan is an analysis of where the city is at and how to shape future policies in an effort to maintain it's values, enhance what needs to be improved and create what is missing in the City of Mahtomedi. The Plan is a vision of how the City of Mahtomedi wants to look in 2030.

[City of Mahtomedi Comprehensive Plan](#)

- **City of Mahtomedi Parks System Plan**

The Parks Systems Plan expresses how the City of Mahtomedi envisions their park system. The Plan includes the planning issues and the acquisition of future parks, key issues, sets goals and guides the community in decisions on the park system.

[City of Mahtomedi Parks System Plan](#)

- **Energy Audit**

An audit conducted and prepared for the City of Mahtomedi. The Energy Audit looked at energy used in sewage, water, municipal buildings, parks, fleet vehicles and traffic signals. In the audit, the City makes the pledge of reducing energy consumed: 10% by 2012 and 20% by 2020. This audit can be used in conjunction with the GreenSteps Program to understand which public facilities need the most attention.

- **Environmental Commission**

The Mahtomedi Environmental Commission is a group appointed to advise the City Council on issues of sustainability, solid waste, air, land, energy and other natural resources. They meet once a month and make recommendations to City Council.

[City of Mahtomedi Environmental Commission](#)

- **Mahtomedi Area Green Initiative**

A volunteer group of concerned citizens that helps to promote the issue of sustainability in the community of Mahtomedi.

- **School District**

Working to help promote the environment and sustainability in the school district.

[Mahtomedi Area School District](#)

- **-Minnesota GreenCorps**

A [Minnesota Pollution Controlled Agency](#) sponsored program that provides opportunities for local graduates to gain experience and learning valuable skills while helping to protect and improve Minnesota's environment. The program employs 18 full-time and 4 part-time students with stipend to work with local communities on issues energy conservation, urban forestry, school waste prevention and local food systems.

[Minnesota GreenCorps](#)

Glossary

2009 Model Ordinances for Sustainable Development - an extensive set of model ordinances to help guide sustainable development in Minnesota.

Best Practices - straightforward actions to achieve a goal, selected using simple criteria, and organized in tiers, focusing first on cost-effective options for greenhouse gas reductions.

B3 Energy Benchmarking- A building energy management system for public buildings in Minnesota including state, local government, and public school buildings.

Clean Energy Resource Teams (CERTS) - started in 2003, is made up of community members across Minnesota who share a bold vision for Minnesota's energy future: to foster strong communities, to create local jobs, and to develop clean and reliable energy from clean sources.

Community Supported Agriculture - consists of a community of individuals who pledge support to a farm operation so that the farmland becomes, either legally or spiritually, the community's farm, with the growers and consumers providing mutual support and sharing the risks and benefits of food production.

Gap Analysis - is a tool that helps a company to compare its actual performance with its potential performance.

Energy Star - a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices.

Minnesota Greencorps - provides opportunities for recent college graduates to improve Minnesota's environment, while gaining experience and learning valuable job skills. Minnesota GreenCorps members are working on projects in the areas of Local Government Energy Conservation, School Waste Prevention, Living Green Outreach, Local Food System, and Urban Forestry.

Green Streets- Green Streets is an EPA program that provides information on how to make streets use natural processes to manage stormwater runoff at its source.

Project Green Fleet- an effort of the Minnesota Environmental Initiative to reduce emissions from school buses and other diesel vehicles.

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

Sustainable Development - Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Systems Thinking - an approach to problem solving, as viewing "problems" as parts of an overall system, rather than reacting to present outcomes or events and potentially contributing to further development of the undesired issue or problem.

Transit-Oriented Design - a mixed-use residential or commercial area designed to maximize access to public transport, and often incorporates features to encourage transit ridership.

Travel Demand Management - a general term for strategies that result in more efficient use of transportation resources.

Tree City USA - a tree planting and tree care program sponsored by The National Arbor Day Foundation for cities and towns in the United States.

WaterSense - a U.S. Environmental Protection Agency program designed to encourage water efficiency in the United States through the use of a special label on consumer products.

Whole-Systems Context - Viewing problems as part of an overall system.

Wind Energy Ordinance - Ordinances supporting Wind Energy to promote the health, safety, morals, and general welfare of the community.

Working Landscapes - the advancement of public policies and private initiatives to conserve

land, preserve and sustain agriculture, and enhance landowner values while recognizing public benefits.

Appendix:

The Natural Step

The Natural Step is a widely recognized comprehensive model for planning in complex systems. It is openly published and free for all to use. The Natural Step has developed, through a consensus process, a systematic principle-based definition of sustainability. The Natural Step Framework has helped hundreds of different organizations around the world integrate sustainable development into their strategic planning and create long lasting transformative change. It serves as the base of sustainability understanding incorporated into the Comprehensive Plan for Mahtomedi and is endorsed by The American Planning Association (APA). It is constantly being used, tested, refined and developed.

"The Natural Step has the strongest framework for sustainability on the planet"

- Bob Willard, Speaker and Author for The Business Case for Sustainability

The Natural Step (TNS) Framework is based on **systems thinking**; recognizing that what happens in one part of a system affects every other part. Left to its own devices, the earth is a sustainable system. As we continue to learn, however, the accumulated impacts of human activity over the past several centuries are now threatening our continued well-being. The Natural Step principles and approach to sustainability are grounded in the scientific laws underlying the earth's systems. While we all intuitively understand these basic scientific principles, we often overlook them in our day-to-day lives.

The Guiding Principles of the Natural Step:

By keeping these principles in mind and using an **upstream approach** that anticipates and avoids problems before they occur, rather than reacting to their downstream effects, the City can pursue planning and development initiatives that strengthen its relationship with its

ecosystems rather than strain it creating problems down the road. The Natural Step's system conditions define the framework through which City and County programs and practices can be reviewed and modified in order to become more sustainable organizations. The four system conditions are expressed here as defined by the American Planning Association's Planning for Sustainability Policy Guide.

The adoption and implementation of The Natural Step framework and this Strategic Plan for Sustainability will stimulate efficient future development of the Mahtomedi area. This framework for future development exemplifies our strong connections we share with each other and with the natural environment. By acknowledging the importance of sustaining and enhancing the ecosystems of which we live through planning, we take great strides towards guaranteeing our continued cultural livelihood for generations to come.

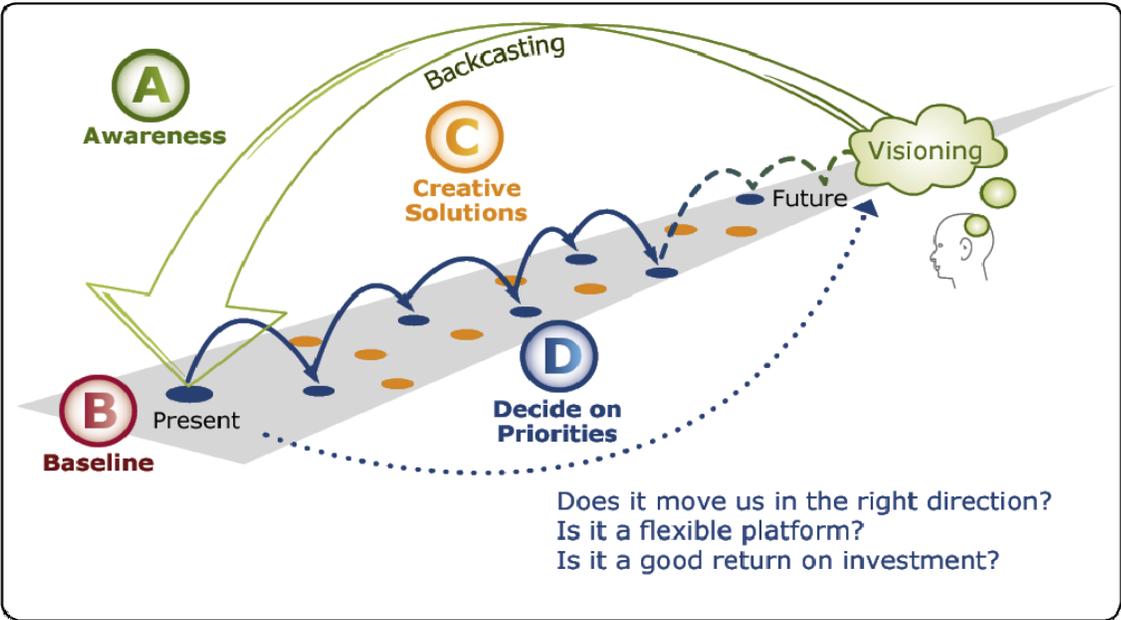


Illustration of Natural Step Framework

Green Steps Program

The approach of The Natural Step framework will be used in tandem with the Minnesota GreenStep Cities program. Minnesota GreenStep Cities is a working demonstration of the planning process that is designed to be a flexible action-oriented voluntary program. Although there are many 'best practices' already established it is still in the early stages of conception. It is meant to serve as the base for what the program will grow to be with the understanding that it can and should evolve based on application to specific city uniqueness, creativity and visioning, as well as inevitable challenges along the way. By utilizing The Natural Step's framework of understanding and the planning process there will be plenty of opportunities for creative ideas and sustainability strategies, opening the pathway for collaboration on all fronts. With Natural Step's guiding principles at the core of future planning, Minnesota GreenStep Cities serves as a complimentary program offering strategic goals and actions that will be put into practice while at the same time completing the four system requirements of The Natural Step. Each GreenStep 'Best Practice' will be accompanied by the symbol for which Natural Step systems condition it meets.

GreenStep Cities is an action-oriented voluntary program offering a cost-effective, simple pathway leading to implementation of sustainable best practices that focus on greenhouse gas reduction. GreenStep Cities is a voluntary program for all Minnesota cities to identify, support, and recognize implementation of a set of sustainable development best practices focusing on greenhouse gas reductions that lead cities beyond compliance and encourage a culture of innovation. Technical assistance will be available from state agencies, utilities, nonprofit organizations, and others. Cities will be recognized for past steps and new actions. In addition to the environmental benefits, it is anticipated that the direct benefits to cities of implementing the best practices promoted by the GreenStep Cities program will include:

- **Reduced energy costs.** A focus on cost effectiveness, particularly energy efficiency, will result in cities saving money, and is a demonstration of fiscal responsibility to their constituents.

- **Improved quality of life and desirable places to live and work for residents.**

Environmental characteristics of a community are increasingly important for residents and businesses. An environmental program such as the GreenStep Cities program can be part of a city's broader effort to attract and retain businesses and residents by making the city an attractive place to live and work. GreenStep Cities recognition could provide instant and credible advertisement of a city's effort to become more sustainable.

- **A simple pathway for going green.** Especially for cities without large staffing, the program can provide a simple guide for identifying and implementing effective actions to increase sustainability.

GreenStep Cities will:

- Achieve meaningful reductions in greenhouse gases and other positive environmental outcomes
- Provide assistance and peer learning for local governments to achieve best practices in energy use reduction and sustainable development
- Provide a "Pathway to Sustainability" that is cost-effective, pragmatic, and achievable for all cities
- Identify specific existing state agency staff and others who are committed to and technically able to help cities implement each specific best practice
- Promote innovation
- Inspire and assist residents, businesses, and community institutions to take action
- Recognize local governments for their past accomplishments and their new efforts spurred by the program

Best Practices are straightforward, selected using simple criteria, and organized in tiers, focusing first on cost-effective options for greenhouse gas reductions.

Technical assistance to take action:

Multiple technical assistance options are planned and will include agency staff, Clean Energy Resource Teams, other non-profit groups, Americorps, utilities, businesses, and student interns.

Recognition for past actions and new successes:

Cities that accomplish an initial set of best practices—a few required and a few from a list of best practice options—will be recognized as a Minnesota GreenStep City for a period of three years by the State of Minnesota. As a continuous improvement program, GreenStep also offers more challenging best practices, and those cities implementing a suite of these will be recognized for an additional 3-year period.

Sources:

Marnie McInnis- Minnesota GreenCorps Member

Scott Neilson - City Administrator

Angela Bourdaghs – MPCA Small Business Specialist and Environmental Commission member

Jim Hunt- Environmental Commission Member

Christine Ahmann-Maples- Environmental Commission Member

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