

## MEMORANDUM

**TO:** Melinda Coleman, City Manager  
**FROM:** Shann Finwall, AICP, Environmental Planner  
**DATE:** April 5, 2016  
**SUBJECT:** Consider Approval of Annual Sustainability Report

### **Introduction**

Local governments are in a unique position to implement and influence sustainability by the policies they set, by the approaches they use in city operations, and by the promotion of sustainability through city-wide education. For this reason, local governments should lead by example. Maplewood is committed to educating and engaging community members as partners in envisioning and building a more sustainable city. One way of accomplishing that is to report on the city's sustainability progress and accomplishments.

### **Discussion**

The Annual Sustainability Report is intended to engage community members in a public process that results in City Council adoption of and commitment to measure and report progress on sustainability indicators. It is also a requirement of the City's participation in the GreenStep Cities program to educate community members about the City's vision and desired outcomes so that these become a shared vision and outcomes.

### **Commission Review**

The Environmental and Natural Resources Commission reviewed and approved the 2015 Annual Sustainability Report on February 25, 2016.

### **Budget Impact**

None

### **Recommendation**

Consider approval of the Annual Sustainability Report (attached).

### **Attachments**

1. 2015 Annual Sustainability Report
2. 2015 Annual Sustainability Report Power Point Presentation



## CITY OF MAPLEWOOD 2015 ANNUAL SUSTAINABILITY REPORT

### **Introduction**

Maplewood's annual sustainability report provides a vehicle for the City to report on accomplishments of multiple and often interlinked City goals, programs and projects, including GreenStep Cities best practices and comprehensive plan goals. The report allows the City to be transparent and accountable to community members about the City's sustainability efforts. It also serves to educate and engage community members as partners in envisioning and building a more sustainable city.

Sustainability is described as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Local governments are in a unique position to implement and influence sustainability by the policies they set, by the approaches they use in City operations, and by the promotion of sustainability through City-wide education. For this reason, local governments should lead by example.

Following is a recap of the City of Maplewood's 2015 sustainability goals and achievements. The recap will reflect that sustainability comes from all levels of an organization. The goals and achievements are accomplished through supportive leadership and policy, and follow through by all departments and programs involved in the City's day to day operations.

### **Discussion**

#### **Environmental and Natural Resources Commission**

The [Environmental and Natural Resources Commission](#) is charged with developing and promoting sustainable practices for City policies and procedures. Following is a list of environmental initiatives and events the Commission undertook in 2015:

#### *Environmental Initiatives*

1. Review of Maplewood Recycling Program
2. Review of Maplewood Trash Program
3. Amendments to the Stormwater Management Ordinances and Standards
4. NPDES Phase II and MS4 Permit, 2014 SWPPP Annual Report
5. Partners in Energy – Review of Maplewood's Energy Action Plan
6. Tree City USA
7. Community Solar – Presentation by Trevor Drake of the Great Plains Institute and Review of the Community Solar Garden Collaborative
8. 2016-2020 Capital Improvement Plan
9. Farm Program at Harvest Park
10. Urban Agriculture – Zoning Review
11. Galilee Lutheran Church Community Garden Concept Plan – 1958 Rice Street



12. Promoting Civility in Public Meetings and Parliamentary
13. Fish Creek Master Plan Update
14. Pollinator Resolution

#### *Environmental Events*

1. Spring Clean Up
2. Arbor Day Event
3. Waterfest
4. Urban Agriculture Tour
5. National Night Out
6. Strategic Materials and RRT Facility Tour

### **Minnesota Green Step Cities**

#### *Program Details*

[Minnesota GreenStep Cities](#) is a challenge, assistance, and recognition program to help cities achieve their sustainability and quality-of-life goals. The free continuous improvement program is based on 28 best practices that are tailored to Minnesota cities, focus on cost savings and energy use reduction, and encourage civic innovation. Maplewood has been participating in the program since December 2010. As one of 102 participating cities, Maplewood is helping to lead the way in sustainability across the State of Minnesota.

#### *Step 3 Award*

In 2015 Maplewood was recognized for the third year as a Step 3 city, the highest achievement award at this time. The Step 3 award is received when a city implements 16 sustainability best practices across the five topical areas, including high-value best practices.

#### *Step 4 Pilot Project*

In 2015 Maplewood was one of six cities in the State that participated in the new Step 4 pilot project involving metrics. Step 4 provides guidance and recognition for cities that maintain the Step 3 level of participation and want to progress to the next stage of achieving sustainability and quality-of-life goals. It also allows a city to mitigate and adapt to a changing climate. The metrics provide a scientific approach to gauge baseline conditions and take actions to see if those actions “move the needle” forward. The primary purpose and benefit of Step 4 is self-evaluation, not peer-city comparison.

Beginning in 2016 the GreenStep Cities program will open up the Step 4 challenge and reporting to all cities. Examples of metrics measured include city fleet vehicle efficiency, solid waste/energy/water use from government operations, residential density, complete streets, safe routes to school, urban tree canopy, etc. These sustainability indicators will be reported with numbers -- the aggregate, quantitative results of taking multiple actions.



Maplewood's 2016 sustainability metrics are currently under way. The metrics and updates to best practices are due to the GreenStep Cities' coordinators in May. Once complete the City will be able to gauge progress or regression towards meeting sustainability goals, and respond most effectively.

#### *Step 5 Award*

The final recognition level for the GreenStep Cities program is Step 5 which will challenge cities to show improvement in the Step 4 metrics. The Step 5 award will be rolled out in 2017.

#### **Green Team**

The [Green Team](#) is made up of a group of staff who work together on environmental and sustainability issues at a City operation level. The Green Team acts as the steering committee for the GreenStep Cities program.

In 2015 the Green Team focused on organics and energy with the implementation of the City Hall Campus Organics Collection Program, *Energize Maplewood!* Pilot Challenge, participation in the Power Down plug load study, and several Green Team events.

#### *City Hall Campus Organics Collection Program*

In March 2015 the Green Team, along with Minnesota Waste Wise, performed a waste sort of trash collected in City buildings. Results of the waste sort found that over 70% of the City's waste could be composted, recycled, or reused.

In June 2015 the Green Team rolled out new organics collection bins to all buildings on City Hall campus. In addition, the location and size of existing recycling and trash bins were accessed and modified to create unified recycling/organics/trash stations. Organics are collected by Republic Services and disposed of at the Mulch Store in Rosemount for processing into compost.

Prior to and after the new and improved bin roll out, staff promoted the new organics collection program to staff and visitors through employee newsletters, internal e-mails, signage, and Green Team outreach. A second waste sort was conducted on March 23, 2016, to measure the City Hall Organics Collection program's success. Results of the 2016 waste sort are expected soon and will be presented to the City Council when complete.

#### *Energize Maplewood! Pilot Challenge*

In August the Green Team introduced the *Energize Maplewood!* Pilot Challenge. The City of Maplewood adopted the *Energize Maplewood!* Energy Action Plan in April 2015 as part of the Partners in Energy program with Xcel Energy. One of the energy goals outlined in the plan is a residential energy challenge. The pilot was put in place to learn how best to implement the energy challenge. The Green Team used the roll out of the organics collection program as a pilot challenge, with employees forming teams and earning points for items such as recycling organics, turning off lights, hanging clothes out to dry, etc. The pilot challenge was a fun way to

educate employees on the new organics collection program and the City's *Energize Maplewood!* Energy Action Plan.

#### *Power Down Plug Load Study*

The Green Team and employees of the 1902 Building participated in the Power Down plug load study. The study evaluated methods of reducing unnecessary plug load energy use (energy used by products that are powered by an AC plug). Plug loads account for 15 to 20 percent of office electricity use. Reducing plug loads is also one of the required GreenStep Cities best practices.

The study was funded by the State of Minnesota to identify and prioritize plug load reduction strategies based on their potential to help achieve Minnesota's energy saving goals. The Center for Energy and Environment (CEE) and LHB Engineering/Planning conducted the study which included plug load energy monitors, plug load management, and plug load education and incentives. The results of the study will be available mid-year 2016.

#### *Green Team Events*

- City Hall Campus Clean Up Day (Earth Day) – The Green Team invited City and County employees to assist in the annual spring clean up of City Hall Campus, picking up trash that accumulates over the winter.
- Reuse Center (America Recycles Day) – This yearly event recognizes America Recycles Day (November 15). Employees bring unwanted office supplies to the Reuse Center (City Hall lunchroom) for display and reuse by other employees. All remaining office supplies after the event are donated to a nonprofit organization.
- Junior Green Team – Each year the Green Team joins forces with the Maplewood Community Center Day Camp counselors to deputize the Day Campers as the Junior Green Team. Green Team members assist in several environmental education programs with the Day Camp that are designed to educate the next generation of environmentally responsible citizens. In 2015 the Junior Green Team learned about waste reduction, pollinators, and energy.

#### **Natural Resources**

Maplewood made progress on several natural resource projects in 2015. At Fish Creek, partners and contractors restored over 22 acres of grassland to native prairie vegetation, and volunteers planted trees and prairie plugs. In addition, a two-day community archeology project was conducted at the Fish Creek site, uncovering several pottery shards and chips from stone tools. Prairie restoration, tree planting, and landscaping continued at Gladstone Savanna, including the planting of 1000's of plugs in the storm basin.

Contractors, staff, and volunteers removed buckthorn at four sites: City Hall, Prairie Farm Preserve, Priory Preserve, and Maplewood Nature Center. Thirty-seven households and two townhome associations participated in the curbside pickup program. In addition, residents removed buckthorn at Nebraska Park with some support from City staff. City crews picked up

120 cubic yards of buckthorn from the curbside collection and 63 cubic yards of buckthorn from the Nebraska Park removal.

Deer continue to be over abundant in some neighborhoods. The City continued its partnership with Metro Bow Hunters Resource Base for deer removal at one Neighborhood Preserve and contracted the United States Department of Agriculture-Wildlife Services to remove deer (sharpshooting) in early 2015.

The City continues to meet requirements to maintain its status as a Tree City USA. Over 400 trees were planted on Maplewood projects in 2015. Arbor Day festivities featured an Arbor Day History Mystery – The Case of the Missing Groves. This was an opportunity to research the historic groves in Keller Regional Park, including receiving assistance from the University of Minnesota for taking tree cores to determine tree age.

Our citizen monitoring programs continued including the Invasive Plant Patrol, Frog Monitoring, and Neighborhood Preserve Monitoring

In December, two City commissions approved a pollinator resolution. The resolution was adopted by the City Council in January 2016.

### **Green Building Code**

In September of 2013, the Maplewood City Council adopted the Maplewood Green Building Program. The Green Building Program is based on the 2012 International Green Construction Code (IgCC). Maplewood was the first city in the country to adopt a Green Building Code based on the new international standards. Fire Station No. 1 (600 McKnight Road) was the first building in the nation designed and built to the specifications of the new code.

The City tracks the energy use for all City buildings through the B3 benchmarking program. After reviewing the energy use from the first year of operation, Fire Station No. 1 is using significantly less energy than its counterparts in the City and around the State. The largest impact has been the decrease in the amount of natural gas used to heat the building. Fire Station No. 1 had a decrease of 38 percent in natural gas use in 2015 compared to the other fire stations in the City. This energy reduction equates to \$5,000 in energy savings per year.

The Villages at Frost-English will be the first private building constructed using Maplewood's Green Building Code. The Code requires that reconstruction of buildings divert at least 75 percent of the material from the waste stream. Reconstruction of the Maplewood Bowl building to make room for the new development was successful in diverting 90 percent of the materials from the waste stream.

### **Education**

#### *Nature Center*

The [Nature Center](#)'s mission is to enhance awareness and understanding of land, water, and wildlife resources; to empower the community to become stewards of the environment. The



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naturalists at the Maplewood Nature Center offer environmental education programming throughout the year. Programs are designed for adults and families, as well as school groups, preschools, scouts, and birthday parties.

The Parks and Recreation Department, with leadership from Maplewood Nature Center, held its first annual Outdoor Family Expo in April 2015. Over 475 people attended. Education and activity stations exposed families to outdoor knowledge, activities, and skills, from how to remove a tick, to paddleboarding, to birding.

In July, Nature Center naturalists began work on the Fish Creek Pollinator Project. Partner Great River Greening secured a grant to work with Maplewood Nature Center and Xerces Society on habitat enhancement, pollinator education, and pollinator monitoring at Fish Creek. The partners hosted an education workshop on bee monitoring and tested their monitoring protocol at Fish Creek. Nature Center naturalists took five classes of school children to the site in September to learn about pollinators and help plant prairie plugs. During the three-year grant period, 800 school children will visit the site.

Service learning, such as planting many of the City's large rain gardens, is an important component of the Nature Center's programs. In 2015 naturalists worked with several classes from Weaver Elementary to replant the large rain garden on Manton, north of Frost Avenue.

The Nature Center is also a resource. Visitors can access the nature library to identify a bird, or browse through the interactive exhibits and informational handouts to learn more about local ecology, buckthorn removal, and native landscaping.

The Nature Center participates in sustainability projects for the City including submitting articles for the Seasons environmental newsletter, working with the Rain Garden Program, conducting tree disease education, participating in the Green Team, and administering and coordinating the Buckthorn Program, tree rebate program, and community gardens.

#### *Environmental Insert - Seasons*

The City publishes a quarterly environmental newsletter called [Seasons](#). Each quarter the Seasons focuses on important environmental topics designed to educate, inspire, and promote sustainability City-wide. The 2015 Seasons focused on the following: Spring – Getting Outdoors; Summer – Partners in Energy; Fall – Gladstone Revitalization; Winter – Water.

#### *Environmental Webpages*

The City's website is a main source of information for residents. The [Environment and Natural Resources](#) webpages spotlight several departments' efforts to work together on programs and projects to protect the environment and the City's natural resources.



## Other Noteworthy Environmental Endeavors

### *Partners in Energy*

The City of Maplewood is participating in the Partners in Energy program. This is community support program sponsored by Xcel Energy. As part of the program Maplewood adopted the [Energize Maplewood! Energy Action Plan](#) in April 2015. The plan outlines energy goals that can be implemented over two-years. In 2015 the City began implementing two of the energy goals: 1) Building Tune Up Program – with support from a Minnesota Pollution Control Agency and Great Plains Institute Grant the City will work with seven local businesses to conduct energy audits and implement energy efficiency improvements. The City will monitor energy use for success of the program and spotlight the businesses through City education and outreach. 2) *Energize Maplewood!* Team Energy Challenge. Teams of residential properties will compete to be the biggest energy losers in the five-month challenge. Teams will earn points for reducing energy use and participating in Xcel Energy rebate programs and City sponsored energy events.

### *Stormwater*

**SWPP:** The City is required to prepare an annual [storm water pollution prevent plan](#) that details the progress made in the previous year toward satisfying the City's stormwater permit requirements. This plan was presented to the Environmental and Natural Resources Commission in May 2015.

**Rain Garden Retrofit Program:** The City received a Clean Water Fund grant to help support a Rain Garden Retrofit Program. We targeted rain gardens from the earliest City projects and 50 households participated. The grant provided three weeks of labor from Minnesota Conservation Corps and the City matched this with over \$7,500 of plants and materials. Refurbishing of the gardens included one or more of the following: weed removal, installation of edging, installation of stepping stone inlets, replanting, and mulching.

### *Recycling Association of Minnesota*

Each year the City of Maplewood partners with the Recycling Association of Minnesota to offer the following programs to the City's residents:

- Compost Bin and Rainbarrel Sale – Reduced price, pre-purchase sale for compost bins and rain barrels.
- Recycle Your Holidays – Recycling of unused or unwanted holiday lights. One hundred percent of the light and chord is recycled.

### *Living Streets*

A majority of the Gladstone Phase 2 Street project was complete in 2015. This project is the third street project designed under the [Living Streets Policy](#). The Living Streets Policy is a guide for upgrading streets to better accommodate biking, walking, and transit users while incorporating green infrastructure such as trees and rain gardens on street edges.





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### *Safe Routes to School*

The City's first Safe Routes to School trail and safety improvements were complete in 2015 along County Road B, between White Bear Avenue and Birmingham Street. The ¾-mile trail and safety improvements will allow safe access to two schools, John Glenn Junior High and Weaver Elementary School.

### *Sustainable Operations*

The City continues to review its City operations to look for ways to eliminate waste, lower long-term maintenance and operating costs, and reduce impacts to the environment. These sustainable City operations also translate into good economic sense. The City's fleet is an area the City will be focusing efforts on sustainable operations in 2016. In 2015 some improvements were made to the City's fleet including the purchase of more efficient vehicles and equipment. The City purchased a 2015 Mack tandem axle plow truck which is equipped with a new improved pre-wetting system that reduces the amount of salt use and a 2015 John Deere maintenance machine used for winter snow removal and summer mowing with EPA Tier 4 compliant emissions.

### *Recycling and Trash Work Plan*

The City's contracted recycling and trash hauling companies follow a work plan yearly that will help the City make improvements to its [solid waste programs](#). Following are projects completed in 2015 as part of the work plans:

- Spring Clean Up
- Fall Clean Up Campaign
- Recycling and Trash Facility Tour
- Small Business and Church Recycling Program – In 2015 the City added four additional businesses to the City's recycling program, for a total of 20.

### *Chicken Permits*

As part of the City's goal to promote urban agriculture, the City's [chicken ordinance](#) allows the keeping of up to ten chickens (hens) on residentially zoned property. The City has 21 approved chicken permits with 170 chickens in Maplewood. The City is reviewing five new chicken permit applications at this time.

### **Summary**

Maplewood is in a unique position to implement and influence sustainability by the policies we set, by the approaches we use in City operations, and by the promotion of sustainability through City-wide education. The City should continue to strive to be a leader in the area of sustainability.

# City of Maplewood 2015

## Annual Sustainability Report

Presented to the City Council on  
April 11, 2016



Gladstone Savanna

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



Oak Fern Along Rain Channel

# 2015 Environmental Commission Reviews Stormwater Management Ordinance and Standards



Stormwater Rock Weeper at the Nature Center

A program of the Minnesota Pollution Control Agency



# Minnesota GreenStep Cities



Building  
and  
Lighting



Land Use



Transportation

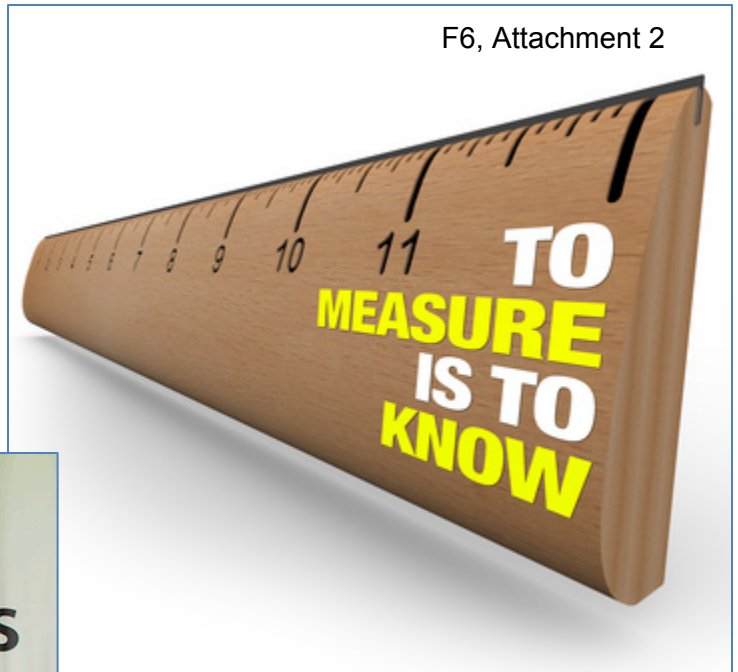


Environmental  
Management



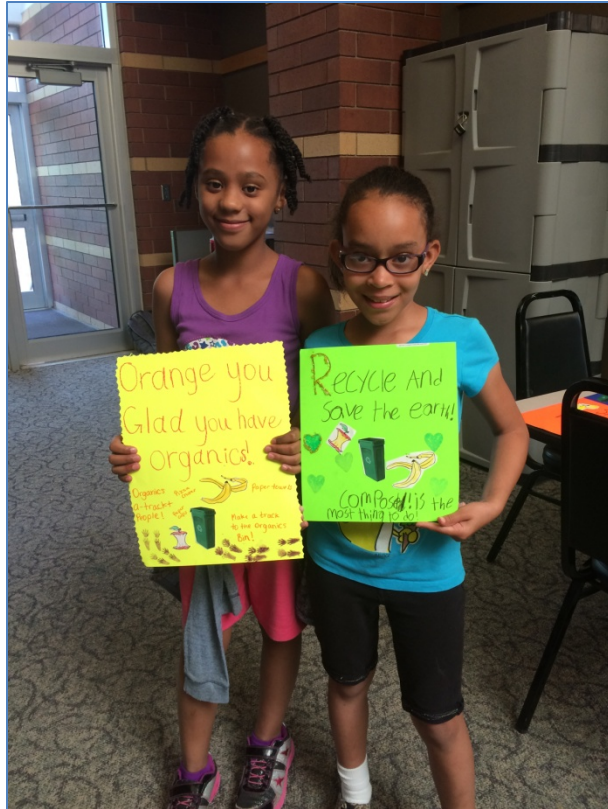
Economic and  
Community  
Development

## GreenStep City - Step 3 Award



## Step 4 Metrics Pilot

# GreenStep Cities



Junior Green Team –  
Composting Posters

## Green Team's Annual Spring Clean Up



**Green Team**

# Sustainable City Operations

- Plug Load Study
- Organics Collection



Dept of Commerce  
Plug Load Study

## BizRecycling® Label Placement Guide

Labels are critical for a successful recycling program. They serve as both reminders to recycle and guides for proper sorting. Label all of your bins as soon as your labels arrive.

### How to Use Labels

AS SIGNS

ON BINS



#### Labels as signs above the bins:

Hang the label above the container so it can be used as a reminder to recycle and as a guide for sorting.

#### Affix labels directly to bins as follows:

- > One label per lid
- > Two side labels per container
  - Place labels about 1/3 of the way down, on front and side of bin.
  - Allow room for liner bags to drape over the outside of the container.



BizRecycling® is a program of the Ramsey/Washington Recycling and Energy Board  
LessTrash.com • 651.266.1199 • twitter: BizRecyclingMN

Organics Collection at All City Facilities



# Maplewood Nature Center



Fur Trade



Raingarden Classes

# Environmental Programming and Education

# Environmental Programming and Education

## Seasons Environmental Newsletter



# Seasons

## The Greening of Maplewood

Summer 2015

### A Vision Toward Carbon Neutrality

**By Shann Finwall,  
Environmental Planner**

Maplewood was the second community in the State of Minnesota to participate in the Partners in Energy offering from Xcel Energy. Partners in Energy is a two year project that will leverage the resources and knowledge of Xcel Energy to support Maplewood's own energy goals and community assets. Tami Gunderzik, Project Manager with Xcel Energy, states that "Maplewood's track record of leadership in sustainability made it a strong candidate for Partners in Energy, leading the way for other communities in the State."

This past winter and spring, a group of 15 Maplewood residents, business leaders, and City representatives got together with support from Xcel Energy to envision the City's energy future and develop an implementation plan for how to get there. The group's energy action plan, called *Energize Maplewood!*, calls out a vision to educate and empower the community to participate in energy actions that will move Maplewood towards carbon neutrality.

Carbon neutrality means we all take responsibility for the greenhouse gas emissions we create when we turn on our computers or heat our homes and businesses. This means a future where we reduce our total energy use as much as we can, and offset the rest through renewable energy and carbon sequestration (see article on page 4 for more on carbon sequestration).

Power plants and natural gas use are currently responsible for about 50% of greenhouse gas emissions, and are accelerating the change in global and regional climate patterns. In Maplewood, we may see different weather patterns, changing plant and animal migrations, or disease outbreaks from warming winters. Some of the community statistics we learned in Partners in Energy show that the Maplewood community used 320 million kWh of electricity and 21 million therms of natural gas in 2013. Residential customers used 37% of the electricity and 54% of the natural gas. Commercial and industrial customers used 63% of the electricity and 46% of the natural gas.

The Environmental Protection Agency reports that more efficient products and buildings could save Americans 10-30% on energy bills, cost-effectively. Studies show that these

efforts could help reduce the nation's total energy demand by 20% by 2025.

Advancing renewable energy is equally as important to achieving carbon neutrality. Each year renewable energy becomes more affordable. The American Solar Energy Society reports that the price of solar, as one example, has dropped 53% since 2010. Not everyone can install renewable energy technology at their home or business, but everyone can buy renewable energy directly from their utility company.

Energy actions outlined in *Energize Maplewood!* will assist businesses and residents in achieving carbon neutrality with direct energy business programs (see page 2) and an *Energize Maplewood!* Energy Challenge to motivate residents to reduce their energy impact (see page 3). If all energy actions outlined in the plan are met, Maplewood will reduce its annual carbon footprint by 1.8 million pounds, approximately equivalent to the carbon emitted from 170 passenger vehicles per year!



For more information visit the City's Energy webpage at [www.ci.maplewood.mn.us/energy](http://www.ci.maplewood.mn.us/energy)  
Resources: Xcel Energy, EPA, American Solar Energy Society

### Energize Maplewood! Energy Actions



Energy Programs for Auto Dealerships/Restaurants



Green Building Code Education



Maplewood Building Tune-Up



*Energize Maplewood!* Energy Challenge

- Partners in Energy
- Green Building Code
- Safe Routes to School



Maplewood Bowl Redevelopment



Co Rd. B Safe Routes to School



## Other Noteworthy Environmental Endeavors

- Chicken Permits
- Urban Agriculture



Chicken Permits  
are Increasing



Edgerton Community Garden

# Maplewood Should Strive to be a Leader in the Area of Sustainability



Winter Shadows



## **Additional Information**

[www.maplewoodmn.gov/sustainability](http://www.maplewoodmn.gov/sustainability)