

# 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

## Green Building Program

By Chris Swanson, Environmental Specialist



South Maplewood Fire Station

Maplewood has always been a city that values sustainability and leadership - with the Green Building Program the City has brought both of those values together.

In 2011 Nick Carver, Building Official, worked with the International Code Council to develop the Green Building Program. The program is designed as a flexible, jurisdiction-based construction code that defines whether a structure is built to meet minimum green standards that go beyond the basic codes.

With the passing of the Green Building Program in September 2013, Maplewood became the first city in the Country to adopt the International Green Construction Code. The program requires that all City-owned buildings be built to the green standards and encourages private building owners to participate.

The City's new South Fire Station was the first building constructed under the Green Building Program. The building includes energy-saving features such as a solar-reflective roof, increased roof insulation, updated appliances, and timed LED lights.

"We hope what we do in Maplewood will set the example for businesses and others who want to build to do it the right way." Carver said. "In fact, the City is currently reviewing the first private development to be built under the Green Building Program. Villages of Frost and English will be a mixed-use, multi-family and commercial development designed and constructed to meet the green building standards."

## Maplewood Building Tune-Up

*Attention business owners interested in conserving energy and saving money—* Maplewood invites you to participate in the Maplewood Building Tune-Up. A limited number of businesses will be selected to receive a FREE Recommissioning study to identify "low cost or no cost" opportunities to save energy and money. In return all you have to do is share your story and your energy data so we can track your success and inspire others to save.

"The Maplewood Building Tune-Up Program is an innovative approach for the City to assist its businesses to become more energy efficient and resilient in this changing economy and environment" states Laura Millberg, Minnesota Pollution Control Agency's Green Building Specialist.

Interested in participating? Complete the on-line application at [www.ci.maplewood.mn.us/energy](http://www.ci.maplewood.mn.us/energy). Questions? Contact Joe Ballandby, Maplewood's Energy Ambassador at (651) 249-2306 or [joe.ballandby@ci.maplewood.mn.us](mailto:joe.ballandby@ci.maplewood.mn.us).

## Save Money and Energy at your Auto Dealership or Restaurant

By Shann Finwall, Environmental Planner



Kline Auto World



5-8 Tavern and Grill

Through Maplewood's energy action planning, auto dealerships and restaurants were identified as high profile businesses with good opportunities for energy efficiency improvements. The City's 47 restaurants and 27 auto dealerships accounted for approximately 7% of the City's total commercial and industrial electricity use, and 6.5% of commercial and industrial natural gas use tracked in 2013.

Lighting can gobble up more than a third of the energy costs in businesses, especially auto dealerships where outdoor lights are on all night for security. "Our industry is unique, with the value of our inventories and that the storage is outdoors, we depend on having our property lighted along with camera monitoring to deter crime" states Jan Schulte, Vice President of Kline Auto World. "If we could

reduce our energy bills by upgrading to an energy efficient lighting system that would have a reasonable pay back period that is something we are very interested in."

Jill Skogheim, co-owner of the 5-8 Tavern and Grill, knows all too well the energy challenges restaurants face. Restaurants use about 2-1/2 times more energy per square foot than other commercial buildings. Jill recently installed energy efficient LED lights in her restaurant, but states "many restaurant owners struggle with investing limited capital in energy efficient improvements when there are so many more customer-facing projects that compete for funding."

Save energy, and money, by participating in one of Xcel Energy's cooling or lighting efficiency rebate programs. Through the programs, businesses can save an average of 10,000 to 37,000 kWh of electricity a year, equating to about \$1,750 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), or contact Joe Ballandby, Maplewood's Energy Ambassador at (651) 249-2306 or [joe.ballandby@ci.maplewood.mn.us](mailto:joe.ballandby@ci.maplewood.mn.us).

Source: Xcel Energy assumptions - \$1,750 per year savings calculated based on average \$0.10 per kWh saved.



This fall we will be launching *Energize Maplewood!* - an Energy Challenge for residents. This six-month challenge is sponsored by the City of Maplewood and Xcel Energy. Through energy actions, tracking, and friendly competition, participants will work to be the “biggest loser” and reduce their energy footprint – and get prizes for winning!

**How does it work?** This is a team challenge. Form teams of at least 15 households with your neighbors, congregation, school group, or friends, or join an existing team. Each team will rack up points by participating in a list of energy activities. For example, getting a visit from the Home Energy Squad®, buying a new efficient showerhead, or attending an *Energize Maplewood!* energy workshop. Along the way, you’ll be able to track your month-to-month energy use with your team and earn additional points for being the biggest energy loser.

**How will energy use be tracked?** Once you register, Xcel Energy will track electricity and natural gas use for your team as a whole (not for individuals).

**What are the benefits of participating?** With easy access to a host of energy saving programs, and encouragement from your team, you’ll be able to implement energy actions that save you money and reduce your household energy use.

**Who can participate?** *Energize Maplewood!* targets Maplewood residents, but anyone that is an Xcel Energy customer is eligible to participate.

**Prizes!** The first 10 teams to register qualify for a \$50 prize drawing. Then during the challenge, all participants will be eligible to win monthly gift cards and other prizes. At the end of the challenge, grand prizes and bragging rights will be given to the “biggest losers” – the teams with the biggest reduction in energy use.

**Sign Up Today!** The Energy Challenge begins in September 2015. To join or register your team, visit the City’s Energy webpage at [www.ci.maplewood.mn.us/energy](http://www.ci.maplewood.mn.us/energy). For questions, contact Joe Ballandby, Maplewood’s Energy Ambassador at (651) 249-2306 or [joe.ballandby@ci.maplewood.mn.us](mailto:joe.ballandby@ci.maplewood.mn.us).

*Energize Maplewood!* Logo Credit: Joe Simonelli

## Residential Energy Use

Maplewood’s residential properties use 37% of electricity and 54% of natural gas in the City. The average household in Maplewood paid \$1,530 for electricity and gas in 2013. The residential energy use and costs are average compared to other Twin Cities inner-ring suburbs, but there are areas of the City where electricity and natural gas use is much higher (refer to Figures 1 and 2).

High energy costs and increased awareness of negative impacts of energy use have led many Maplewood residents to implement changes in their homes to reduce energy. Xcel Energy reports that 2,423 Maplewood residents took advantage of their residential energy rebate programs in 2013. The rebate programs range from the simple installation of efficient showerheads or programmable thermostats to the installation of solar panels. By participating in the *Energize Maplewood!* Energy Challenge, you too can save energy and money.

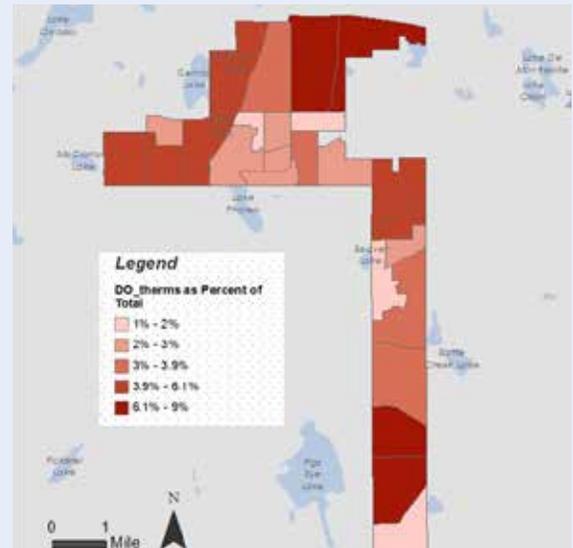


Figure 1

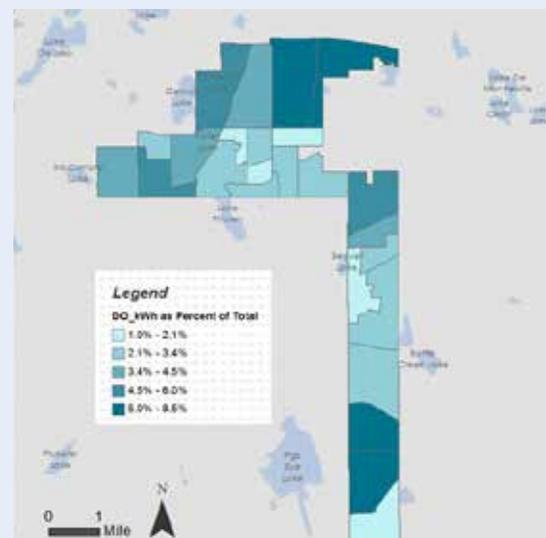


Figure 2

Source: Xcel Energy

# Tree Trunks Provide Carbon Storage! By Ann Hutchinson, Lead Naturalist

Energy begins with the sun. The sunshine that strikes American roads each year is estimated to be more energy than all the fossil fuels in all the world! (quote from Dennis Hayes). The trick is how to capture that power.

Enter - green plants! They are amazing little chemical factories, able to capture the sun's rays and create their own food, carbon bonds in the form of sugars and cellulose. This process is called photosynthesis. Carbon is stored in the plant's stems, roots, and leaves. The product of decomposed plants, buried in 65-million-year-old swamps with the dinosaurs, are the rich fossil fuels such as coal, gas, and oil that we depend on today. Burning these carbon deposits releases the carbon into the air as carbon dioxide. Power plants are the largest source of carbon pollution in the US ([epa.gov/climatechange](http://epa.gov/climatechange)). When carbon dioxide and other gases build up in the atmosphere, it traps the sun's heat and causes climate change.

Plants can be our allies in our fight to reduce carbon dioxide. Carbon sequestration is a natural process that removes carbon from the atmosphere through photosynthesis and stores it in plants. If the plant is a tree, this can mean the carbon is stored for as long as the tree remains wood, and is not burned. Trees and wood are 50% carbon by weight, so growing trees in a forest accumulates carbon! Planting trees is one way to offset our continual release of carbon by burning fuels ([nrs.fs.fed.us/niacs/carbon/forests](http://nrs.fs.fed.us/niacs/carbon/forests)).

The Environmental Protection Agency has a website where you can determine the amount of carbon you produce by transportation, heat, and electrical use. Simply enter the amounts used from your energy bill and the calculator will figure out how much carbon you are releasing, and how much you can save by reducing energy use ([www3.epa.gov/carbon-footprint-calculator](http://www3.epa.gov/carbon-footprint-calculator)).



Green Plants are Amazing Little Chemical Factories



photo by: Christa Rittberg

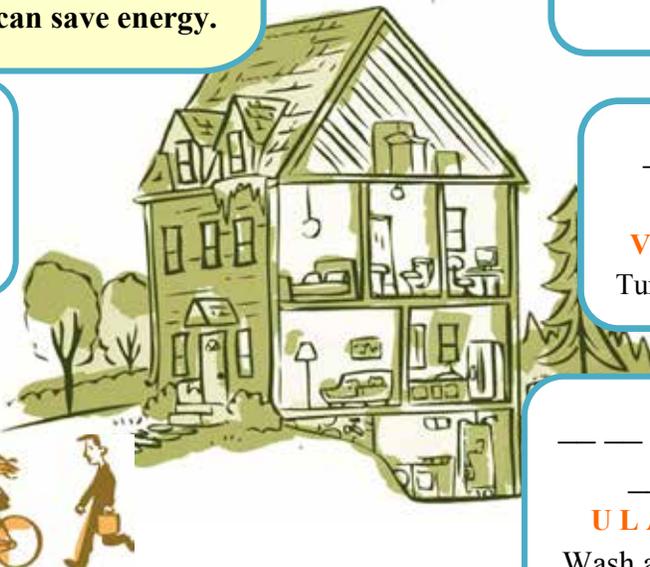
Trees are 50% Carbon by Weight

By Oakley Biesanz, Naturalist



Hi, I'm TOLBY!

Unscramble the words to find **PLACES** in your home where **YOU** can save energy.



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**RMOBDOE**

Turn off the Lights Behind You

---  
**GERAGA**

Bike, bus or walk instead of taking the car one day/week

---  
**RAOBTHOM**

Take 5 minute showers



---  
**VNIGLI OMOR**

Turn off computers & TV's

---  
**ULADRYN MOOR**

Wash all clothes in cold water



TOLBY stands for Turn Off the Lights Behind You! © Center for Energy and Environment



Answers: Bedroom, Garage, Bathroom, Living Room, Laundry Room