

Cook County Annual Sustainability Report

January 2017

Prepared by the Cook County Green Leadership Team



As leader of the second-largest county in the nation, I have made the environment a top priority. That's why I created the Cook County Green Leadership Team, chaired by my chief of staff. All the County Offices under the President are accountable to this team for their sustainability work.

County thinks big about sustainability. I set a goal to reduce the County's harmful greenhouse gas (GHG) emissions by 80 percent by the year 2050 as a meaningful way to fight climate change. To this end, we've already invested in efficiency projects to reduce energy use in three-quarters of the County's buildings and I am proud to say we are ahead of our annual target toward the 2050 goal. From 2010 through 2015, Cook County achieved an actual decrease in GHG emissions from building energy of 22 percent, more than twice our annual target. And there is more to come: we are reducing energy use at our suburban courthouses and highway facilities alone by more than 50 percent.

Beyond our work on improving the sustainability of our own County buildings and operations we are also incorporating sustainability into our planning and programming for our residents. Everyone benefits from sustainable practices and a clean environment is good for economic growth. A strong transportation system is one of the fundamental pieces of sustainable economic development, and to that end we have produced Cook County's first Long Range Transportation Plan in more than 70 years. The plan prioritizes transit and other alternative modes of transportation, making the region's reliance on transportation as an economic driver one that is sustainable into the future. We are also promoting sustainable development through our Brownfield Assessment Program by helping west suburban communities get old manufacturing sites back on the tax rolls and generating jobs. The County also has one of the most progressive ordinances in the U.S. to make sure building materials from demolition are recycled or reused. We have kept 900,000 tons of material out of landfills and put that material back into the economy, which also creates jobs. Installing clean energy infrastructure creates local jobs and makes communities more desirable. That's why the County is partnering on opportunities for community solar energy. Many people rent, live in apartments or can't afford a whole solar array, yet they should still be able to experience the benefits of solar energy. After all, it's not just good for air quality and health; it's also good for your pocketbook.



Thank you to the members of the Green Leadership Team and all of the employees working to maintain these efforts and continue to integrate sustainability into everything we do at the County.

A handwritten signature in blue ink that reads 'Toni Preckwinkle'. The signature is fluid and cursive, written over a white background.

**Toni Preckwinkle,
Cook County Board President**



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Toni Preckwinkle, Cook County Board President

**Goal:
Reduce GHG
Emissions**

80%
by 2050

Energy and water projects at courthouses will reduce GHG emissions by

56%

Half-way to vehicle inventory reduction goal of

20%



Over **900,000** tons of building materials kept out of landfills

For more information visit cookcountyil.gov/sustainability

1st

Long Range Transportation Plan in 70 years

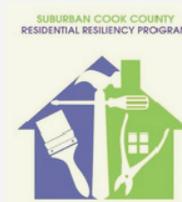
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Transportation Priorities

- 1 Prioritize transit and other transportation alternatives
- 2 Support the region's role as North America's freight capital
- 3 Promote equal access to opportunities
- 4 Maintain and modernize what already exists
- 5 Increase investments in transportation.

4

Solar thermal walls installed



Disaster recovery funding available for up to

320 homes

Brownfield sites being assessed in Western Suburbs

42



52% decrease in water use at Rolling Meadows Courthouse

2016 Building Energy GHG Emission Reductions



**Target
10%**



**Actual
22%**



12

County Buildings participating in cutting edge year-round energy demand response program



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U.S. Department of Energy

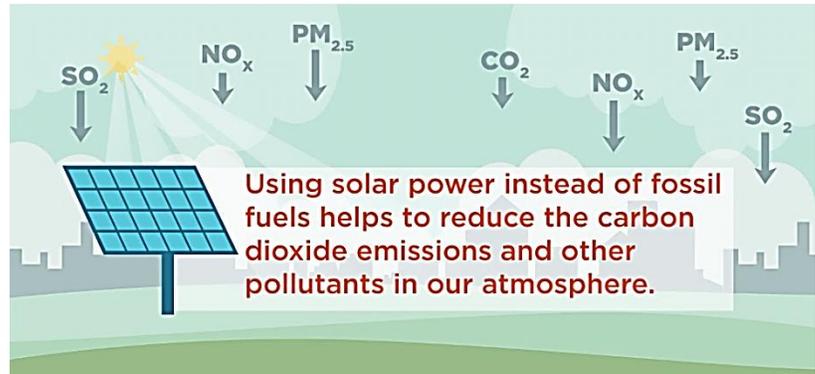
Only 25% of Cook County households can access solar. The County's Community Solar project will expand access.

SUSTAINABILITY IN THE COMMUNITY

COMMUNITY SOLAR

Cook County is making solar energy more available and affordable for all County residents by working with stakeholders to determine what is needed for community solar to develop here. Cook County was one of 15 recipients nationwide awarded funds from the U.S. Department of Energy Solar Market Pathways project.

The County Team -- which includes Elevate Energy, West Monroe Partners, Environmental Law and Policy Center, the City of Chicago and ComEd -- has issued six reports, all available at <https://www.cookcountyil.gov/service/solar-energy>. As the team enters the second half of the project, pilot sites will be selected for in-depth financial and engineering modeling to demonstrate the feasibility of community solar in Cook County across a range of project types.



LONG RANGE TRANSPORTATION PLAN

CONNECTING



COOK COUNTY

Between 2014 and 2016, the Cook County Department of Transportation and Highways worked with subject matter experts to develop the County's first Long Range Transportation Plan in more than 70 years. The plan, *Connecting Cook County*, was approved and adopted by the Cook County Board of

Commissioners on August 3, 2016 and highlights five transportation priorities: prioritize transit and other transportation alternatives; support the region's role as North America's freight capital; promote equal access to opportunities; maintain and modernize what already exists; and increase investments in transportation.

Cook County has more than half of the metropolitan area's population, jobs, businesses and transportation facilities, and is uniquely vested in the health and sustainability of our region. Transportation accounts for 27 percent of all greenhouse gas emissions in Cook County. Given that transit and alternative modes of transportation can significantly reduce emissions associated with transportation, Cook County's focus on transit is critical to making our region more sustainable. For these same reasons - as well as the breadth and depth of the County's engineering, fund-raising, and legal expertise - Cook County is also uniquely positioned to play a leadership role in the transportation arena.

Connecting Cook County is a call to action - a framework to promote strategic partnerships and investments that strengthen our economy and lead to more livable communities.

SMART ENERGY FOR COUNTY RESIDENTS



As ComEd modernizes the electric grid to smart technology, the Department of Environmental Control is making smart grid information readily available to Cook County residents with grant funding from the Illinois Science and Energy Innovation Foundation. The new smart grid will help reduce our collective carbon footprint. It is also a more efficient

delivery system that will enable new pricing programs through smart meters by using energy smarter, and increase the availability of renewable energy. With help from partners including townships, the Housing Authority of Cook County, and County Departments such as Veterans Affairs, Law Library, Animal and Rabies Control as well as Cook County Health and Hospitals System, we are disseminating information and holding utility bill analysis workshops.

RESIDENTIAL RESILIENCE

North West Housing Partnership (NWHP) and Neighborhood Housing Services of Chicago partner with the Cook County Department of Planning and Development to provide a Disaster Recovery Residential Resilience program for income-qualified suburban residential homeowners who experienced flood damage in April/May 2013. Those who are approved for the program may also qualify for a separate lead hazard reduction program that will assist homeowners in removing lead-based paint from their homes.

**SUBURBAN COOK COUNTY
RESIDENTIAL RESILIENCE PROGRAM**

Was your home affected by the severe storms and flooding that occurred between April and May 2013?

If so, you may be eligible to receive assistance with home repairs.

This program is restricted to Suburban Cook County.

Homeowners may also qualify for a program provided by the Federal Home Loan Bank of Chicago's Competitive Affordable Housing program, another collaborative program created by NWHP in partnership with Chicago-based UP Development. This program provides financial assistance for repairs and upgrades relating to energy efficiency and accessibility.

BROWNFIELDS REVITALIZATION



In 2014, the Cook County Department of Environmental Control received a grant from the U.S. Environmental Protection Agency to assess vacant, abandoned and underutilized brownfields in seven western suburbs (Bellwood, Forest Park, Franklin Park, Maywood, Melrose Park, Northlake and Schiller Park). These assessment activities are the first step leading to the cleanup and redevelopment of brownfields in these communities. Environmental Control and its coalition partners are actively engaged in the assessment of 30 sites, and continue to evaluate additional sites for inclusion in the

assessment activities. A list of the sites currently being assessed can be found at: <https://www.cookcountyil.gov/service/brownfield-redevelopment>. You can suggest a site for assessment activities by completing brownfield submittal form also found at this website.

SUSTAINABILITY IN COOK COUNTY GOVERNMENT

In 2011 President Preckwinkle appointed the County’s first Chief Sustainability Officer. With the guidance of the Sustainability Advisory Council, our goal is to institutionalize efficiency and decrease greenhouse gas emissions.

President Preckwinkle set an ambitious goal to decrease the County’s greenhouse gas (GHG) emissions by 80 percent by 2050. The County began by tracking the emissions created through building energy use – the largest source of GHG emissions for the County. In the past three years, the County has collected data and established baselines for energy use and for its vehicle fleet, water and waste. As the County continues to improve its data sources we will include these additional GHG sources into our reporting, increasing our baseline, and giving us a clear path towards GHG reduction strategies.

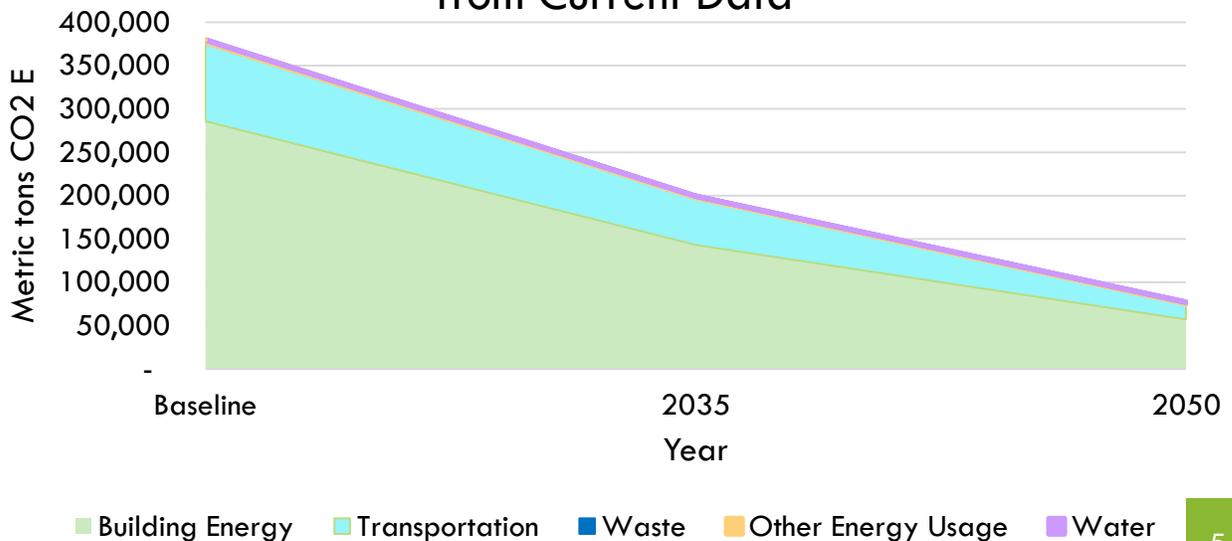


CARBON REDUCTION PLAN

Through a partnership with the Environmental Defense Fund Fellowship program, the County is developing a comprehensive Carbon Reduction Plan. This strategic management plan provides a roadmap to achieve the County’s greenhouse gas reduction goal taking into account all County operational impacts including energy, water and fuel use and the responsible management of material resources. In addition, the plan will quantify future savings available through the use of renewable energy resources.

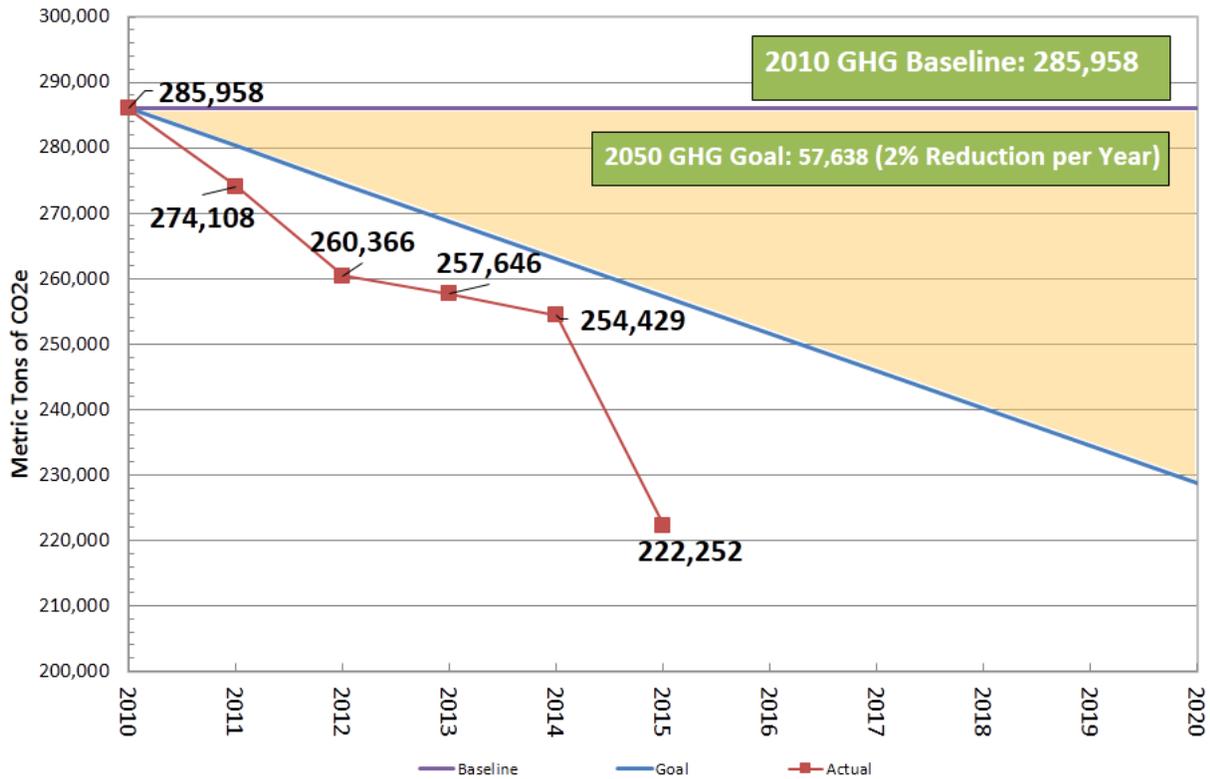
The Carbon Reduction Plan uses current data to set intermediate goals for reduction of emissions to reach a total emissions reduction goal of 80 percent by 2050. Intermediate goals are set for transportation, waste, building energy, water and other energy usage in 2035 and for each category.

Carbon Reduction Targets
from Current Data



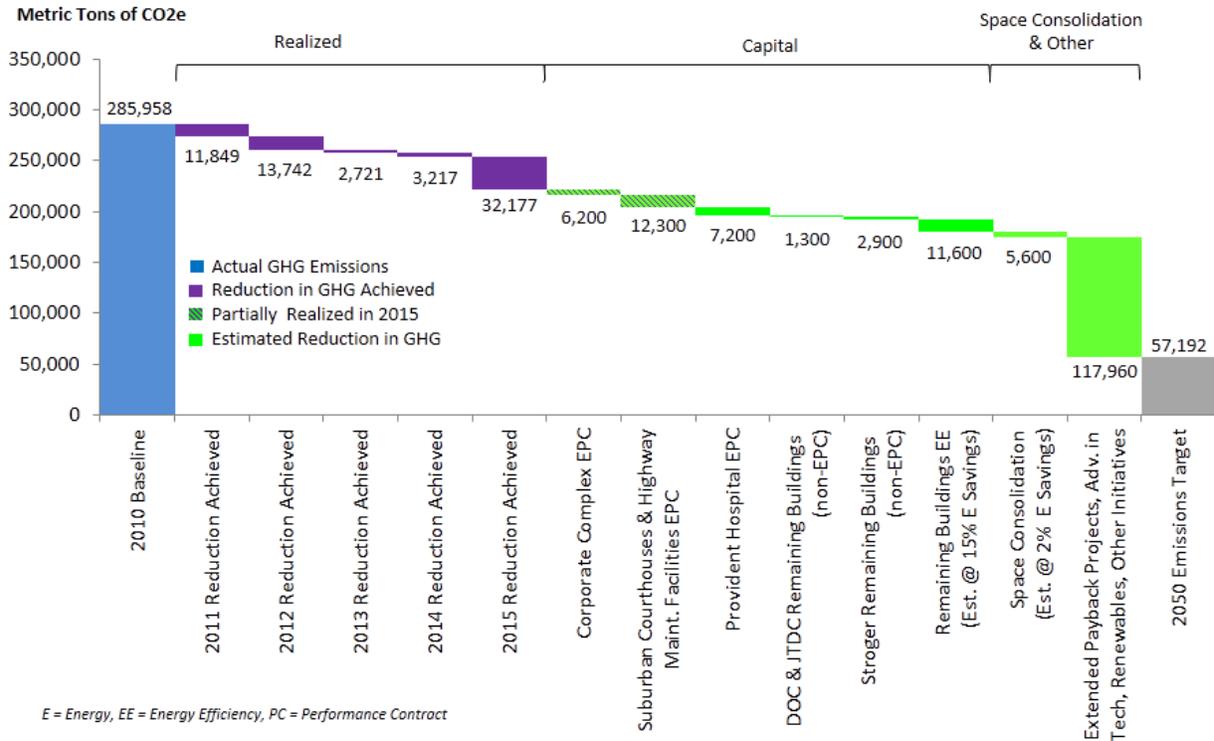
2015 Cook County GHG Emissions from Buildings
Target: 10% decrease from 2010
Actual: 22% decrease from 2010

County GHG Abatement Exceeds 2015 Target



GHG Emissions are cumulative, remaining in the atmosphere for hundreds of years. Since 2010, the County has reduced Co2 emissions equivalent to the annual Co2 emissions from 23,841 homes' electricity use in one year.

Cook County Facilities 2050 GHG Reduction Strategy
- Estimated Reductions of Different Initiatives -

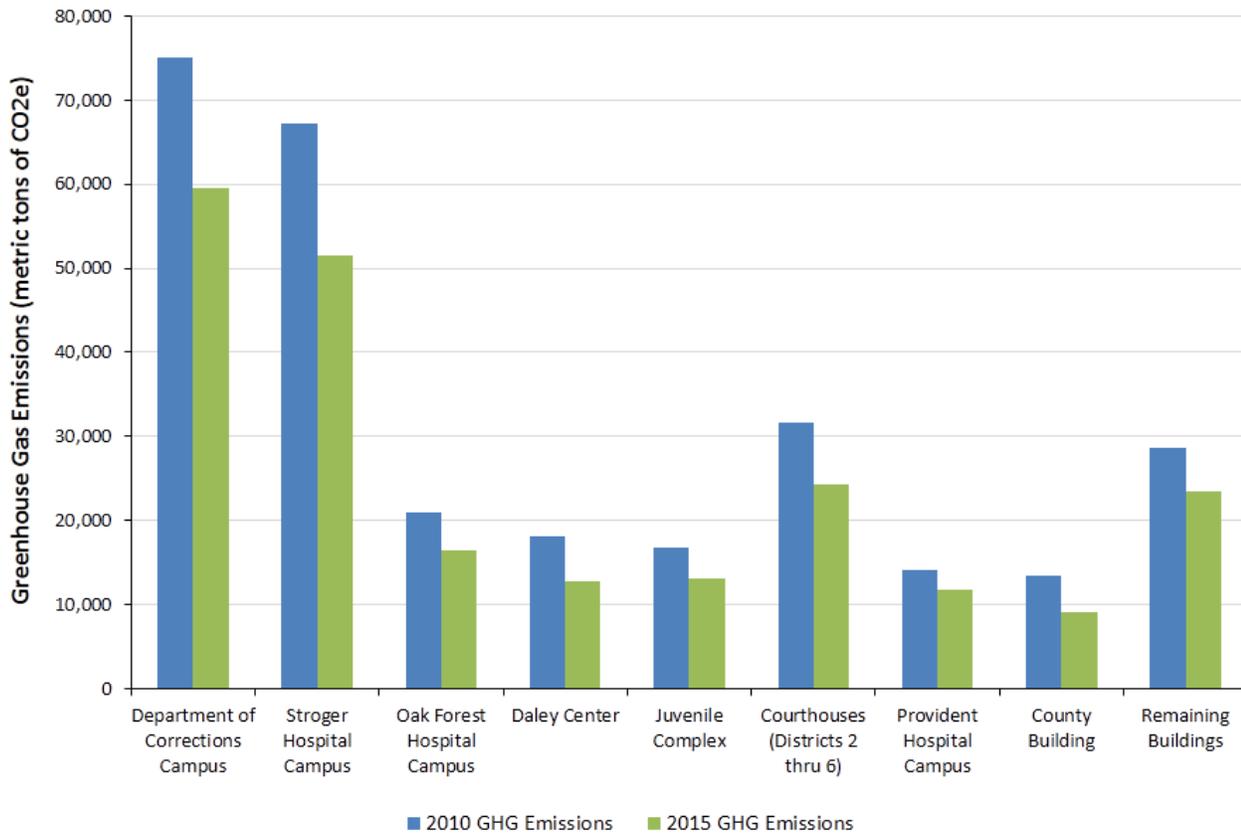


2015 GHG Emissions from County Buildings

GHG emissions from County buildings have decreased 22 percent from the 2010 baseline year. This is well ahead of the 10 percent reduction goal to stay on target towards an 80 percent decrease in emissions by 2050.

These reductions have been achieved through concentrated investments in Energy Efficiency through Guaranteed Energy Savings Projects (GESPs) at Stroger Hospital and Department of Corrections campuses, which were completed in 2015. Further savings will be realized at these buildings over the 20-year life of the contracts. Additional reductions are expected to be added in the coming years as the GESPs at the County’s courthouses, administration buildings and highway buildings are completed in 2016 and 2017.

Greenhouse Gas Emissions by Facility/Campus



***GUARANTEED ENERGY SAVINGS
PROJECT HIGHLIGHTS***

COUNTY BUILDING AND DUNNE BUILDING

Upgrades in these two buildings will reduce greenhouse gas emissions 31 percent through reducing energy consumption by 30 percent and water consumption by 13 percent. Projects include lighting upgrades, upgrades of the energy management control systems, water conservation measures, and upgrades to chilled water, hot water and steam distribution systems.

SKOKIE, BRIDGEVIEW, MARKHAM AND ROLLING MEADOW COURTHOUSES AND HIGHWAY MAINTENANCE FACILITIES

By implementing LED lighting upgrades, replacing end-of-life boilers and chillers, energy management controls systems upgrades, window replacements, and water conservation measures, the County will realize a 56 percent greenhouse gas emission reduction and reduce energy consumption by 53 percent and water consumption by 27 percent.

DEMAND RESPONSE PILOT



Cook County is participating in a pilot program to test and develop new ways to save energy.

The pilot project, called Combined Capacity Asset Performance project, is a collaboration with the Environmental Defense Fund and PJM Interconnection. It will show how strategically combining resources can allow demand response, a tool that pays customers to reduce electricity use in response to the grid's needs.

Each year, PJM manages a capacity auction to buy enough power supply resources to meet the highest forecasted peak energy demand for the area it serves. In PJM's wholesale power markets, demand response resources compete directly with other forms of energy. Thus, demand response participants can bid into the auction, offering the amount of electricity they commit to reducing and receiving the same payments as power companies to meet electricity needs. Currently, 12 County buildings participate in the emergency capacity demand response program and have committed to reducing a total of 5.7MW of electricity demand. Under PJM's new performance requirements, qualifying sources of energy must respond any time there is a critical need. Previously, demand response users could choose to participate only during summer months.

MAKING THE MOVE TO RENEWABLE ENERGY

In order to decrease GHG emissions 80 percent by 2050, the County needs to make investments in more than just energy efficiency. There also needs to be an investment in renewable energy generation. Generating electricity from renewable energy rather than fossil fuels also offers significant public health benefits, creating energy without air and water pollution emitted by coal and natural gas plants. The Guaranteed Energy Performance Contracting Projects currently in construction at 11 County facilities will decrease the County's GHG emissions by 20,000 tons CO₂e (an average of 44 percent), and include renewable energy installations such as solar photovoltaics and a geothermal system. When the installations of solar trees at Markham and Bridgeview Courthouses, solar thermal walls at four Department of Transportation and Highway Maintenance Facilities (Districts 1, 2, 4 and 5), and a geothermal system at the Skokie Courthouse are complete, the County will have increased its renewable energy use by over 12.8M kBtus annually.



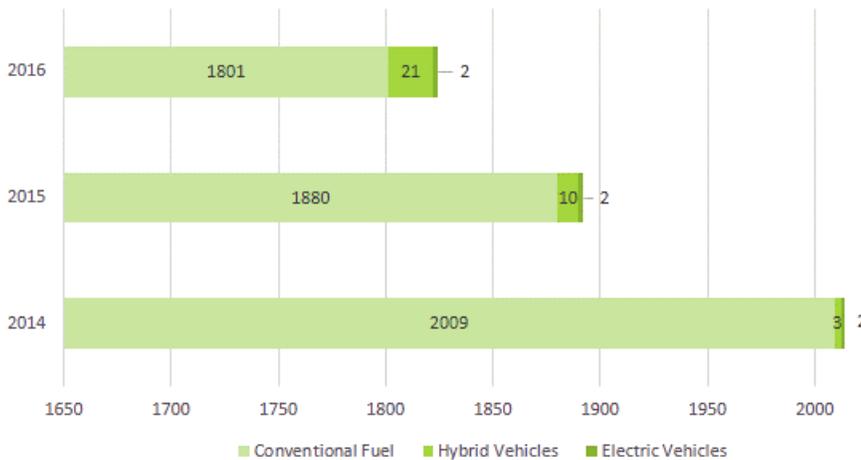
Schaumburg Department of Transportation and Highway Maintenance Facility Solar Thermal Wall

The geothermal system is a renewable form of energy that utilizes the earth's natural heating and cooling capacity in place of energy intensive mechanical heating and cooling, thus reducing greenhouse gas emissions.

TRANSPORTATION

The County has set an aggressive goal of reducing the total vehicle inventory by 20 percent, or approximately 200 vehicles from the 2014 total of 2,009. As of mid-2016, the County is more than halfway to that goal. In addition, the number of alternative fuel and hybrid vehicles that make up the fleet has more than doubled in that time.

Fleet Vehicles by Fuel Type

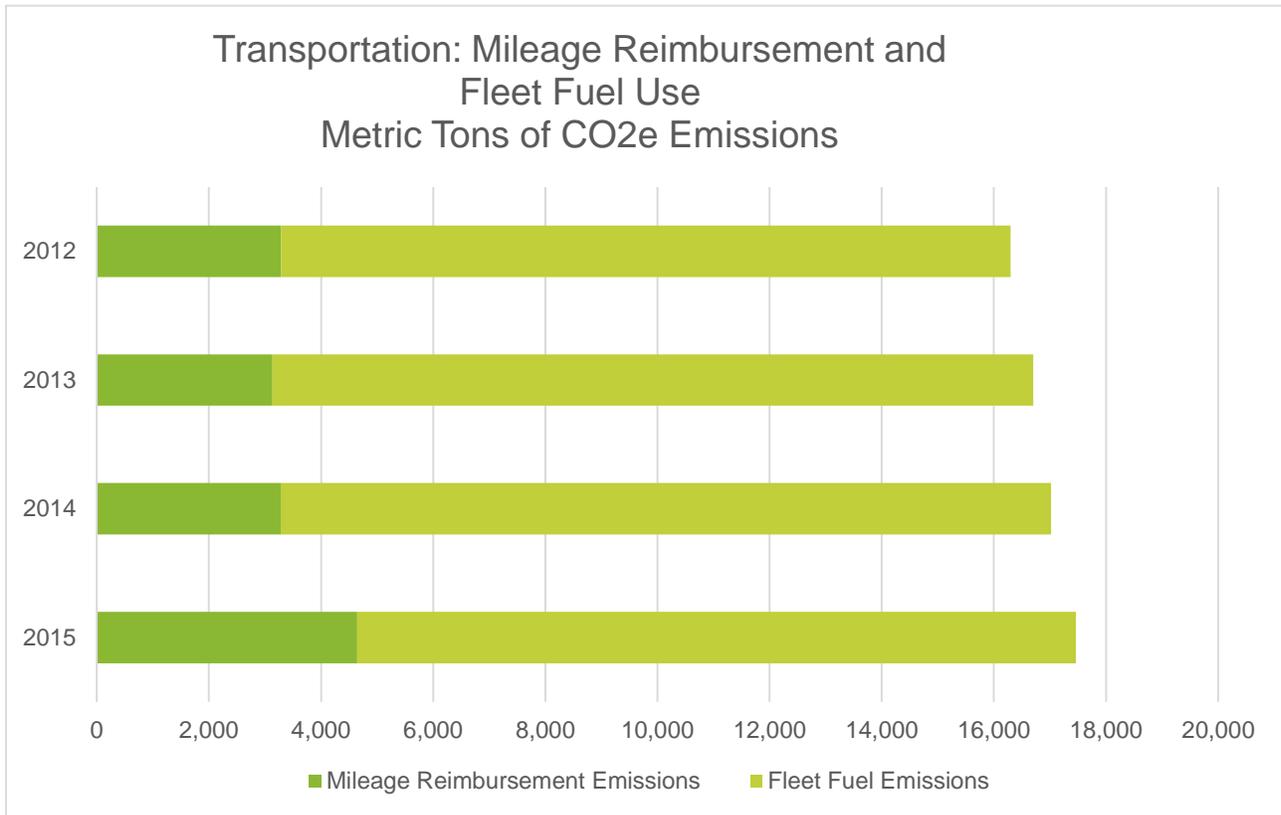


As the County continues to modernize information systems, more data is now available and additional sources have been added to the GHG emissions calculations. In addition to emission information from fleet vehicles, two more categories were added this year. Those are employee reimbursement for miles driven and commuting emissions. These additions more accurately reflect the County’s environmental impact. These data sets are not only used for GHG emission calculations, they also provide information that improves efficiency overall. For example, the number of miles traveled for county business by employees using their own vehicles is a new data set that is now available. In addition to using it as a component of the fleet GHG emissions calculation it is also useful as an efficiency measure, to analyze how those miles traveled relate to fleet usage and overall costs of county travel.

Right-Sizing the Fleet

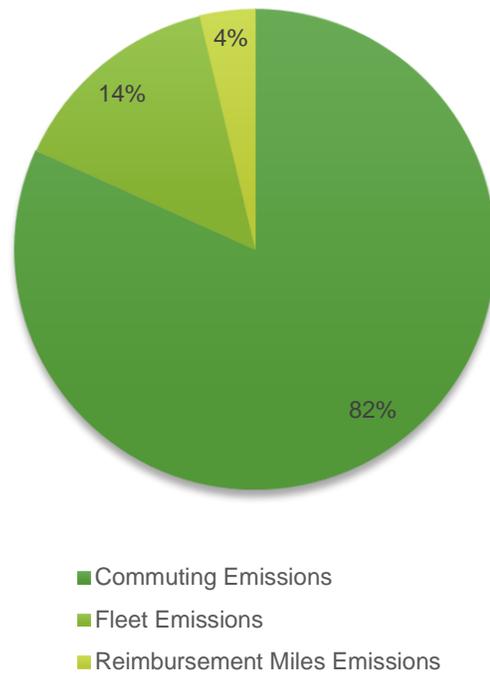
Although the amount of fuel used has remained relatively stable over the last five years, in that same time period there has been a 10 percent reduction in the number of vehicles in the fleet. Fewer vehicles are being utilized more often. Right-sizing the fleet ensures that the County is getting the most use out of each vehicle through sharing programs and maximized utilization by departments. Right-sizing the fleet means that overall, the County is able to purchase fewer cars, decreasing the amount of raw materials consumed.

2015 County Fleet CO₂ E emissions have decreased 2 percent since the baseline year of 2012, however the number of reimbursement miles has slowly increased in that time.



82 percent of the transportation emissions generated by County Operations are the result of the County’s approximately 22,000 employees who commute to and from work. This large proportion is indicative of the importance of commuting as a driving force of emissions in the County overall and is another example of the importance of implementing the recommendations made in both the new Long Term Transportation Plan and the Carbon Reduction Plan.

Cook County Transportation Emissions

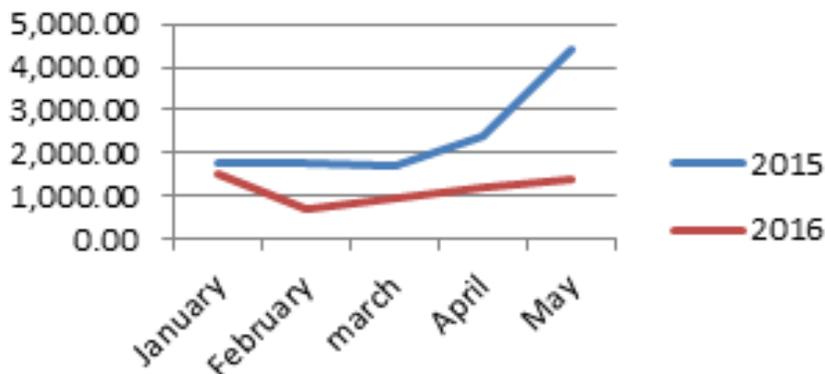


Over the past two years, the County’s Bureau of Administration has reconciled the entire portfolio of water use by County buildings. The Bureau has been able to consolidate individual paper bills being sent to individual account addresses into a centralized system. The Bureau has also had many individual meters replaced and addressed issues arising from estimated versus actual billing. The Bureau has done this for 83 individual accounts with 14 water utilities. A preliminary baseline water usage has been established for FY 2015 of 591,539,526.9 gallons.

Conserving Water

Increasing costs along with updated consumption information have led to plans for water efficiency upgrades at the Department of Corrections Campus. FY2017 Capital Improvement Plans include replacement of shower heads and sinks and updating the infrastructure to alleviate water waste in the campuses’ heating and cooling systems.

Rolling Meadows Courthouse Water Use



One of the successes of the Guaranteed Energy Savings Projects is the implementation of water efficiencies at the Rolling Meadows Courthouse. Since upgrading the domestic plumbing fixtures with the latest high efficiency low-flow toilets, urinals, and faucet aerators were completed in December of 2015, water use has decreased 52 percent in the first five months of 2016 as compared to the same time period in 2015.

WASTE

As a part of the continued implementation of the Cook County Solid Waste and Recycling Plan, the Department of Environmental Control supports a number of efforts to increase the return of materials to productive use through increased recycling efforts and advocating for the safe disposal of harmful substances.

ELECTRONIC WASTE



It has become increasingly difficult to legally recycle electronics despite a state mandate barring these materials from disposal in landfills. Due to a combination of plummeting commodity prices and the lack of a sustainable producer responsibility model in the state, the cost of recycling these materials has become overwhelming for programs that previously provided such services. Cook County continues to work with other county and municipal waste management partners as well as the electronics industry to develop a sustainable model for recycling these materials without going backwards and allowing for these often toxic materials to be placed back into landfills.

FOOD SCRAP DIVERSION

The County is also part of a growing effort to divert food scraps from landfills. Along with construction and demolition waste, organic waste is one of the largest components of the waste stream and contributes greatly to the generation of greenhouse gases when buried in a landfill. As one of the founding members of the Illinois Food Scrap Coalition, the County supports market and legislative efforts to divert additional food scraps from landfills by returning these materials to the useful market by turning them into nutrient rich compost or by generating energy through anaerobic digestion and biofuel generation.



In 2015 the Cook County Department of Environmental Control pursued the recommendations of the Solid Waste Management Plan Update by entering into a delegation agreement with the Illinois Environmental Protection agency for solid waste inspection and enforcement authority of transfer stations, landfills, clean construction and demolition fill operations, open dumping and solid waste related complaints. This agreement led to a grant from the IEPA to cover solid waste inspection costs. By investigating complaints locally, Environmental Control is able to provide County residents with faster response times and more frequent inspections.

COOK COUNTY GREEN LEADERSHIP TEAM

APPOINTED BY COOK COUNTY BOARD PRESIDENT TONI PRECKWINKLE

John Keller

CHIEF OF STAFF, CHAIR

Michael Jasso

CHIEF, BUREAU OF ECONOMIC DEVELOPMENT

Elaine Lockwood Bean

CHIEF, BUREAU OF ASSET MANAGEMENT

Robert McInerney

CHIEF ADMINISTRATIVE OFFICER/CHIEF INFORMATION OFFICER
COOK COUNTY SHERIFF'S OFFICE

Martha Martinez

CHIEF ADMINISTRATIVE OFFICER

Simona Rollinson

CHIEF INFORMATION OFFICER

Ivan Samstein

CHIEF FINANCIAL OFFICER

Deborah Stone

CHIEF SUSTAINABILITY OFFICER

Sam Williams

EXECUTIVE DIRECTOR, FACILITIES
COOK COUNTY HEALTH AND HOSPITALS SYSTEM

SUBCOMMITTEE PRIMARY STAFF

TONY DOVER

ENERGY MANAGER, CAPITAL PLANNING: ENERGY AND WATER

CHRISTOPHER LIPMAN

SOLID WASTE COORDINATOR, DEPARTMENT OF ENVIRONMENTAL CONTROL:
WASTE AND RECYCLING

RADOSLAV STOILOV

FLEET MANAGER, BUREAU OF ADMINISTRATION: FLEET



Toni Preckwinkle

Cook County Board President

Cook County Board of Commissioners

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Larry Suffredin

Jeffrey R. Tobolski