

KANE COUNTY OPERATIONAL SUSTAINABILITY PLAN



2013

Sustainable Solutions and Results for Kane County
Facilities and Operations

A plan to Improve Kane County's Environmental, Economic, and Social
Sustainability through Improvements to its Facilities and Operations



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KANE COUNTY SUSTAINABILITY WORKING GROUP

Over two dozen members comprising the Kane County Sustainability Working Group met regularly for 16 months to produce this plan. Membership included staff from varied departments across Kane County, each of whom brought invaluable expertise to the table in order to assemble the most logical, thoughtful, and achievable Plan possible. Thank you to all who participated:

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Implementation Matrix

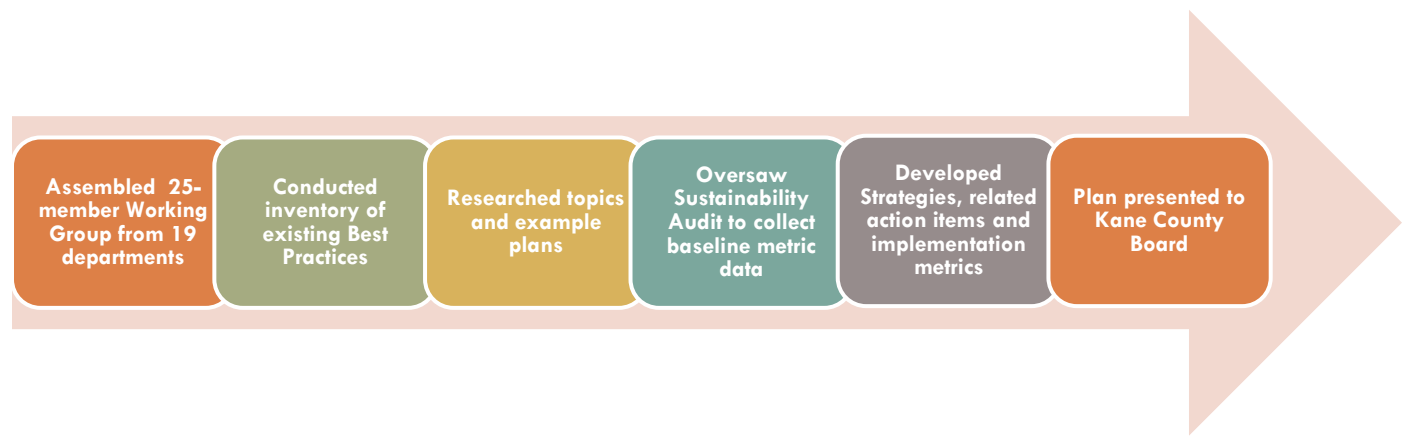
Kane County Operational Sustainability Plan

SUSTAINABLE SOLUTIONS AND RESULTS FOR KANE COUNTY FACILITIES AND OPERATIONS

EXECUTIVE SUMMARY

Kane County has a long history of carefully balancing resource management with fiscal responsibility. The Kane County Operational Sustainability Plan is a roadmap for furthering the sustainability of Kane County's internal operations and facilities. The Plan seeks to achieve Triple Bottom Line balance in Kane County's operations and facilities by analyzing strategies through the lenses of economy, environment, and people. Supporting the Plan is data collected in the 2012 Kane County Sustainability Audit. Six categories of sustainability strategies are presented in this Plan: Fleet and Driving, Grounds and Roads, Purchasing, Facilities, Workplace Habits, and Employee Wellness. Each strategy is accompanied by specific action items, implementation dates, responsible departments, targets, and any known costs.

This Plan is the first phase of a larger Kane County Sustainability Planning Initiative. The focus of this Plan provides an account of and improvement plan for Kane County's own financial, environmental, and human resources. This plan will not examine Kane County plans or policies which impact greater Kane County – those plans and policies are the subject of a second phase Kane County Sustainability Planning Initiative.



THE SUSTAINABILITY PLANNING PROCESS

Chapter 1 Introduction

KANE COUNTY & SUSTAINABILITY

Sustainability is commonly defined as *the ability to meet the needs of the present without compromising the capability of future generations to meet their own needs.*

Kane County has a long history of recognizing the **value** offered by our natural resources in providing vital goods and services and the **importance** of preserving and protecting our environment while maintaining a healthy economic bottom line. In the 2012 Quality of Kane documents (2040 Plans), Kane County aims to meet the concurrent goals of Healthy People, Healthy Living and Healthy Communities. Specifically, the Kane County 2040 Plan contains, for the first time, a chapter on Sustainability and Energy. The Kane County Operational Sustainability Plan is consistent with the Quality of Kane goals by striving to achieve a balance between the elements of individual needs, environmental preservation, and economic well-being in its operations and facilities.

The capacity to endure

A resource or system that meets present needs without compromising those of future generations

SUSTAINABILITY

A method of using a resource so that the resource is not depleted or permanently damaged

Managing and supporting personal resources in a way that assures balanced health and wellness

This Operational Sustainability Plan provides a coordinated strategy for the integration of sustainable practices into Kane County government operations and decision making processes.

HOW WE GOT HERE

Process

In 2011 the Kane County Sustainability Working Group was created and spent a year researching, brainstorming, and taking an inventory of sustainability best practices. The 25-member Sustainability Working Group was appointed by Kane County Department and Office Directors to provide sustainability perspective and leadership. Staff from the Department of Facilities, Development, and Environmental Resources organized the team, provided support, facilitated group meetings, conducted surveys, and compiled the team's work.

The outcome of that planning process is this Kane



County Operational Sustainability Plan. The plan recommends specific actions for integrating sustainability into Kane County operations and decision making processes. From purchasing decisions and building construction to resource recovery and employee wellness, this plan supports a comprehensive, systematic approach to sustainability that reaches many divisions, departments, and employees. Each chapter of the plan is devoted to a separate functional area of Kane County government.

Regional Examples

Kane County’s Sustainability Planning process has drawn from other local and regional sustainability plans and initiatives. Both the City of Elgin and the City of Aurora have produced municipal sustainability plans which include goals for improving the sustainability of those cities’ own facilities and operations. The goals and objectives of this plan are in line with the Chicago Metropolitan Agency for Planning’s **GoTo 2040 Plan** which calls for regional efforts to manage water and energy resources, improve open spaces, support workforce development, and promote efficient governance. Further, the Kane County 2040 Plan fulfills CMAP’s Plan objectives which encourage “local governments to be early adopters of sustainable practices.”

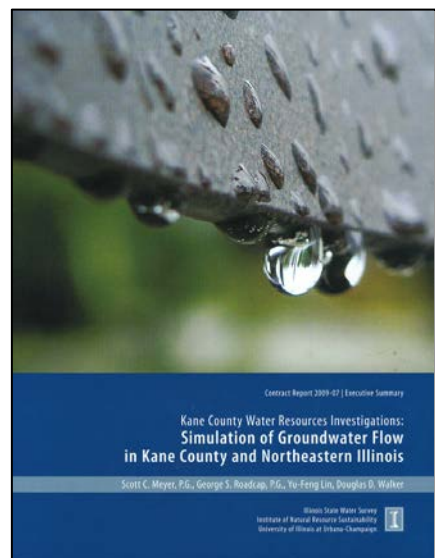
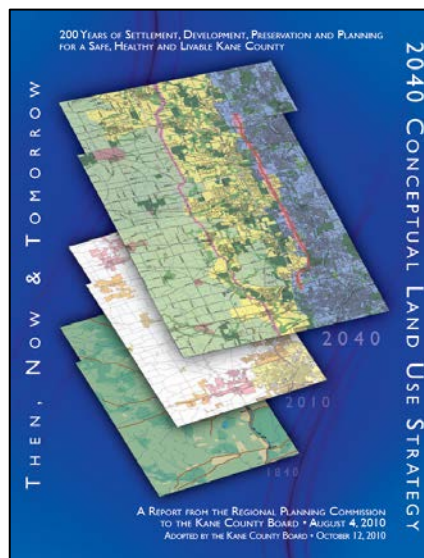
Sustainability Audit Report

As part of the Kane County Sustainability Planning Process, an audit of the County’s operations, facilities, and fleet was conducted to establish a baseline data set on which to base goals and measure future successes. The Audit was conducted by the Center for Neighborhood Technology (CNT) and Delta Institute with support from Kane County staff. The audit provides invaluable data to this Plan, from fleet and facility energy usage to commuting patterns and purchasing procedures. As the Sustainability Plan action items are implemented, the baseline data will serve as a benchmark against which to measure future successes.

KANE COUNTY’S ACCOMPLISHMENTS TO DATE

The cycle of self-assessment, action, and progress with an eye towards future generations is not a new concept in Kane County. From its groundbreaking farmland preservation program—the first in the State—to the much-heralded water resources studies, and noted planning efforts that include both the 2030 Land Resource Management Plan and the 2040 Plan, Kane County has benefitted from progressive policies that make this county a desirable place to live and work.

Before Kane County began to formalize an Operational Sustainability effort, many departments and offices had already incorporated sustainable programs and initiatives into their operations.



Energy Efficiency and Conservation Block Grant

In 2009, Kane County was awarded an Energy Efficiency and Conservation Block Grant from the U.S. Department of Energy as a component of the American Recovery and Reinvestment Act. An Energy Efficiency and Conservation Strategy was approved by the Kane County Board, and Kane County completed the

following activities aimed at improving energy efficiency and reducing fossil fuel emissions in the transportation, building and other energy consuming sectors:

- Updates to Kane County Energy Plan and Energy Efficiency Documents – Produced a five-year update to the 2005 Kane County Energy Plan. The update included formulation of energy efficiency, energy conservation and energy usage statistics; and goals and identification of strategies to achieve those goals.
- Audit of Kane County Facilities – Conducted audits of Kane County facilities and created a list of priority energy efficiency improvement projects.
- Improvements to Kane County Facility Energy Efficiency – Implemented cost-effective energy efficiency measures in county-owned buildings and facilities.
- Development of Energy Efficiency Construction Training for local contractors – Coordinated with Elgin Community College to establish a regional training program to promote sustainable, energy efficient building techniques.
- Improvements to Kane County Division of Transportation (KDOT) Intelligent Transportation System (ITS) – Implemented improvements to Kane County’s ITS, to aid in real time management of traffic and maintenance operations.
- Development of the Transportation Long Range Comprehensive Plan and Randall/Orchard Rd. BRT Study – to determine the extent to which bus rapid transit, improved transit, and corridor densification would improve the efficiency of Kane County’s transportation network.

Other Efforts

Kane County’s green, sustainability efforts are distributed among many departments and offices, rather than in a centralized sustainability office. Other departmental efforts and accomplishments prior to this plan development are noted in subsequent Topic Chapters.

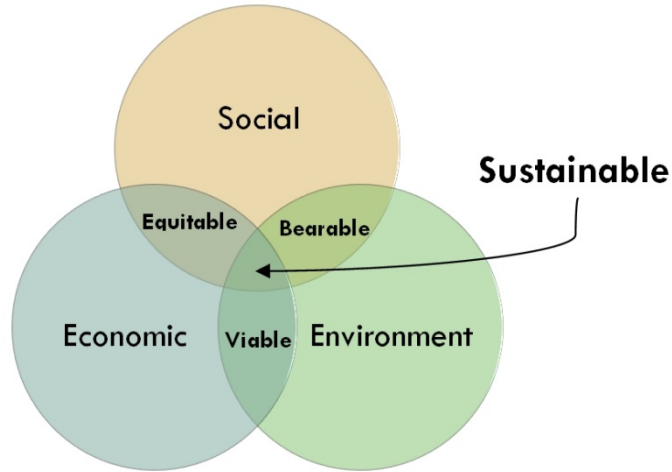
SUSTAINABILITY AND THE TRIPLE BOTTOM LINE

Sustainability is a broadly used term that can encompass many aspects integrated in regional and local planning. During the fall of 2011, the county’s internal Sustainability Working Group sought to define sustainability in a manner that reflected the county’s long term planning goals.

Today, the most commonly accepted view of sustainability is one that values and incorporates three dimensions: environmental, social and economic — often referred to as the “triple bottom line.” This philosophy has been adopted by public and private entities sectors alike.

For example, the federal government’s Executive Order 13541, focused on Federal Leadership in Environmental, Energy, and Economic Performance, acknowledges that the Federal Government “must lead by example” to promote environmental responsibility while prioritizing “actions based on a full accounting of both economic and social benefits and costs.”

A growing number of corporations, having realized substantial savings through applying sustainability initiatives in their business operations, address triple bottom line accounting in their sustainability reports and marketing efforts. The Great Lakes Brewing Company in Cleveland, Ohio proclaims a triple bottom line goal on their product packaging: “To engage in economic, social and environmental practices that achieve a sustainable, yet profitable, business.”



SUSTAINABILITY AS A TRIPLE BOTTOM LINE CONCEPT

THE KANE COUNTY SUSTAINABILITY PLAN: A 3-PHASE PROCESS

Kane County’s step-by-step approach to incrementally address sustainability shows careful consideration of its own abilities, financial needs and political context, and the likelihood of influencing other stakeholders with measurable “triple bottom line” progress. The goal of Phase 1, the current phase, is to address internal government operations. Phase 2 will analyze the sustainability of Kane County’s plans and policies as they relate to wider unincorporated areas of Kane County. Finally, Phase 3 will seek to build mutually beneficial sustainability programs with municipalities and other entities.



KANE COUNTY SUSTAINABILITY PLAN 3-PHASE PROCESS

REPORTING & UPDATES

This plan is intended to be a living document, and is anticipated to be one which can shape the measurement of Kane County’s progress toward sustainability into the future. An annual report or scorecard will be prepared to document progress toward implementing these strategies and action items. The initial Plan provides a three-year outline of activities. A full update to this Plan, therefore, will be prepared at the end of those three years to account for lessons learned and to maintain the roadmap for the years following. After the initial three year implementation cycle, the Plan should be updated once every five years.



Proposed Reporting and Update Schedule

Year	Annual Report/ Scorecard	Plan Update
2013	✓	
2014	✓	
2015	✓	✓
2016	✓	
2017	✓	
2018	✓	
2019	✓	
2020 (& 2025, etc)	✓	✓

Chapter 2

How to Read and Use This Plan

PLAN FORMAT

TOPIC CHAPTERS

This Plan is arranged by the following six topics. Each topic is covered in a single chapter, the chapters each:

- present an introduction to sustainability in each facet of Kane County government,
- identify achievements, and
- lay out goals for future improvements.

Topics



Fleet and Driving



Grounds and Roads



Purchasing



Facilities



Workplace Habits



Employee Wellness

Progress to Date

Each chapter outlines sustainable accomplishments and advancements Kane County Departments and Offices have made prior to the publication of this Plan. Future accomplishments and advancements will be included in the “Progress to Date” section as the plan is updated.

Strategies and Action Items

The “To-Dos” – the meat of this Sustainability Plan – are laid out under each topic by strategy. The **strategies** are general goals for improving the sustainability of Kane County’s facilities and operations.

Each strategy is accompanied by one or more **action items** which detail the specific tasks to undertake in order to achieve the goals of the Sustainability Plan.

IMPLEMENTATION MATRIX

Included in the Plan is an “Implementation Matrix” which summarizes the Strategies and Action Items, and further specifies metrics, dates, costs, and the responsible departments. In order to gauge future success of sustainability initiatives, it is important to start with a solid base of data. The Kane County Sustainability Audit Report (2012) provides a comprehensive baseline survey of Kane County facilities and operations. The following parameters are included in the Implementation Matrix:

Metric

Each Action Item is assigned a metric – something that will be measured – to track future progress toward achieving implementation of the Sustainability Plan.

Goals

Future progress toward implementing Action Items is anticipated by detailing annual goals. A three-year initial cycle is included, which is anticipated to be reviewed and updated in 2015.

Department(s)

Action Item implementation will be carried out by those logically involved with each topic area. Each action item is listed with the appropriate Department or Office.

Cost

If known, costs associated with implementing each Action Item are listed.

Impacted Resources

Quick-glance symbols are used in the Implementation matrix in order to identify the resources that will be affected by implementing each action item. The symbols are presented below, with an explanation of the resource.



Conserves Materials: reduces the quantity of or allows for greater recycling of the materials needed for Kane County Operations



Conserves Energy: reduces the amount of electricity or natural gas needed to operate and maintain Kane County facilities



Conserves Water: reduces the amount of water used in the operation or maintenance of Kane County facilities



Makes a Better Workplace: improves the health or well being of Kane County employees



Saves Money: reduces the financial burden of operating or maintaining Kane County facilities or processes

FOR MORE INFORMATION...

An additional information section is presented at the end of each topic chapter with links to relevant resources.



Chapter 3 Fleet and Driving

INTRODUCTION

The use of vehicles and equipment is one of the largest sources of emissions and pollution for Kane County operations. Fuel combustion creates pollution that has been linked to asthma, heart disease, smog, and climate change, among other impacts. Increased fuel efficiency would result in beneficial cost savings to the County.

Kane County has a fleet of 273 vehicles and a large inventory of off-road equipment to support its law enforcement, transportation, general services, landscaping, and other functions. In 2011, Kane County vehicles drove over three million miles and used over 250,000 gallons of fuel. In addition to the County-owned fleet, a survey of Kane County employees showed that 60% undertake business travel, and 78% of those that travel for work use a personal vehicle at least some of the time. The transportation impact of the County's business goes beyond that of just the cars, trucks, and equipment it owns.



Kane County strives to incorporate increasingly efficient and sustainable vehicles and technologies into its fleet. The Kane County Division of Transportation has a goal to reduce fuel consumption, mileage and emissions while improving safety and efficiency. The County has engaged in many initiatives that range from fleet management actions that reduce energy consumption and emissions to roadway infrastructure projects that not only reduce congestion, improve travel times, and provide needed linkages but also enhance and restore open space and the natural environment.

Recent and ongoing activities have been undertaken in an effort to achieve a long term and lasting impact on the region.

PROGRESS TO DATE

The **Kane County Division of Transportation (KDOT)** has implemented the following measures to improve the efficiency of its fleet and fleet operations:

Vehicles

- KDOT has purchased vehicles that are **efficient and support alternative fuels**; the vehicles have the capacity to complete a variety of jobs related to maintenance, construction, and transport of personnel and equipment
- Snowplow trucks are purchased with **stainless steel bodies** to extend their life
- KDOT’s vehicles include **biodiesel** to utilize renewable resources and reduce harmful emissions

Vehicle equipment

The following equipment has been installed to enhance operations and save energy:

- **GPS devices** enhance navigation (used for 14 years on KDOT trucks)
- Special **electronics that are groundspeed sensitive** to improve salt spreading operations
- **Spraying system** used during the winter salt spreading operations to increase efficiency, improve roadway conditions, and reduce man-hours (used for 10 years)
- In-vehicle **LED work/warning light technology** reduces the need to idle vehicles to power lights

Other programs/ operations

- KDOT has worked to **reduce vehicle idle time**
- **Redesigned snowplow routes**, resulting in reduced fleet size, fuel consumption, fleet maintenance & labor
- Improved salt spreading operations, resulting in less salt use and labor
- **Driver training**, including quarterly Drivers Safety Committee meetings, resulted in improved worker safety.
- Certain KDOT vehicles are **stored in a heated enclosed building** to reduce exposure to winter weather conditions and vehicle warm-up time.
- All salt is stored enclosed at 3 countywide locations to **reduce distance to reload**, resulting in faster response time and fuel savings.

Other County Departments have worked to make fleet or driving more efficient in the following ways:

- Encourage **carpooling** to meetings and conferences when using a fleet vehicle
- Installed a Level II **electric car charging station** at the historic Kane County Courthouse with full public access
- Developed a pilot **alternative fuel vehicle comparison** chart for use during the purchase of new fleet vehicles



ELECTRIC VEHICLE CHARGING STATION INSTALLED AT KANE COUNTY’S THIRD STREET COURTHOUSE, GENEVA, IL

*Kane County, IL
5/17/2011*

True Cost of Ownership - 2011 Compact Cars/ Hybrid and Electric Vehicle Comparison

Assumptions:
Gas price: 1 year rolling average in IL, with 3% annual increase
Electric Rates: Assumed 11 cents/kWh, with 3% annual increase
Vehicle Use: 15,000 mi/year
Driving Habits: 55% city, 45% highway
Hybrid Battery Life: According to a Department of Energy Study, Hybrid Vehicle "battery performance is sufficient to provide stable vehicle fuel economy over a 160,000 mile... life." Therefore, battery replacement costs are not factored into these cost-to-own calculations. At present, battery replacement is estimated at or below \$3,000
** other assumptions & base data taken from Edmunds.com "True Cost to Own" calculator*

	Ford Focus SE	Honda Civic Hybrid	Nissan Leaf	Toyota Prius	Ford Fusion Hybrid	Chevy Volt
CASH PRICE						
	\$ 14,466	\$ 26,200	\$ 31,150	\$ 33,258	\$ 28,405	\$ 39,694
5 - YEAR COST TO OWN						
Depreciation	\$ 8,613	\$ 12,626	\$ 20,772	\$ 17,470	\$ 16,971	\$ 26,348
Taxes & Fees	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500
Fuel	\$ 8,152	\$ 5,771	\$ 2,211	\$ 4,731	\$ 6,051	\$ 2,324
Insurance	\$ 6,596	\$ 6,301	\$ 6,446	\$ 7,174	\$ 6,714	\$ 6,172
Maintenance	\$ 2,415	\$ 2,498	\$ 1,916	\$ 3,032	\$ 3,023	\$ 2,066
Repairs	\$ 732	\$ 637	\$ 637	\$ 637	\$ 732	\$ 546
Year 5 True Cost to Own	\$ 27,008	\$ 28,333	\$ 32,482	\$ 33,544	\$ 33,991	\$ 37,956
7 - YEAR COST TO OWN						
Depreciation	\$ 10,438	\$ 15,262	\$ 26,131	\$ 20,478	\$ 20,904	\$ 32,582
Taxes & Fees	\$ 700	\$ 700	\$ 700	\$ 700	\$ 700	\$ 700
Fuel	\$ 11,675	\$ 8,328	\$ 3,192	\$ 6,828	\$ 8,734	\$ 3,381
Insurance	\$ 9,546	\$ 9,120	\$ 9,329	\$ 10,384	\$ 9,719	\$ 8,934
Maintenance	\$ 3,387	\$ 4,206	\$ 2,516	\$ 4,534	\$ 4,421	\$ 3,464
Repairs	\$ 1,474	\$ 1,283	\$ 1,283	\$ 1,283	\$ 1,286	\$ 1,100
Year 7 True Cost to Own	\$ 37,220	\$ 38,899	\$ 43,151	\$ 44,207	\$ 45,764	\$ 50,161
Manufacture & Sales Information						
Dealership Locations	St. Charles, North Aurora, West Dundee, Huntley	St. Charles, Elgin - Main; Elgin - Randall	St. Charles, North Aurora	St. Charles, Elgin	St. Charles, North Aurora, West Dundee, Huntley	St. Charles, Elburn, Elgin, West Dundee
Engine	U.S.	U.S.	Outside U.S.	Outside U.S.	Mexico	Austria
Transmission	U.S.	Japan	Outside U.S.	Outside U.S.	U.S.	Japan
Assembled	Wayne, MI	Greensburg, IN	Outside U.S.	Outside U.S.	Mexico	Detroit, MI

PILOT ALTERNATIVE FUEL VEHICLE COMPARISON CHART WITH 5 & 7 YEAR COST-TO-OWN

FLEET STRATEGIES & ACTION ITEMS

Strategy FL1: Increase the energy efficiency of Kane County fleet vehicles

Fleet vehicles should meet the needs of the job and be multipurpose, as appropriate. The purchase of alternative fuel vehicles should be considered based on the job requirements, vehicle performance and adequacy, energy efficiency, and cost.

Action Items:

1. Conduct annual analysis of fuel efficient/alternative fuel vehicles

Annual vehicle analysis should include cost comparison between standard models and alternative fuel vehicles including compressed natural gas, hybrid and electric vehicles. Cost analysis should be made available to departments considering purchase of new vehicles.

2. Consider alternative fuel vehicles when purchasing new vehicles

3. Maximize use of alternative fuels including biodiesel

Alternative fuels should be utilized to the maximum extent allowed by vehicle warranty

4. Recycle vehicle maintenance materials (motor oil, tires, auto batteries)

5. Enroll in green fleet recognition program



Strategy FL2: Track fleet data using fleet management tool

Using a fleet management tool will enable staff to better understand County vehicle inventory, usage, and to identify opportunities for improved efficiency.

Action Items:

1. **Develop fleet management tool**
2. **Track fleet data, report annually**

Fleet data can include fuel types and volumes consumed, vehicle maintenance material recycling rates, vehicle types and associated data such as mpg, maintenance schedule and costs

DRIVING STRATEGIES & ACTION ITEMS

Strategy D1: Reduce energy and fuel used for Kane County travel and commuting

Policies or programs should be developed to encourage the most efficient use of the County's fleet and to utilize technologies and programs that reduce vehicular travel to meetings, events, or for commuting.

Action Items:

1. **Create vehicle idle policy**

The idle policy could apply both to vehicles on Kane County properties and Kane County vehicles driven to other locations. The idle policy should exclude vehicles which are required to idle for emergency or other technical reasons.

2. **Increase carpooling for County functions/meetings**
3. **Increase use of video communications/virtual meetings**
4. **Develop "commuting alternatives" educational and incentive program**

Commuting alternatives program could include: carpooling incentives, mass transit pre-tax savings program, telecommuting, flexible work schedules, and "Live Here, Work Here" principles. Once instituted, Kane County may be eligible to join the Environmental Protection Agency's Commuter Choice Leadership Initiative

Strategy D2: Support alternative fuel vehicle use and multimodal travel infrastructure on Kane County facilities

Action Items:

1. **Install alternative fuel infrastructure, as appropriate**
2. **Identify locations to retrofit existing facilities with pedestrian and bicycle amenities**
3. **Specify pedestrian and bicycle amenities in new County facilities**
4. **Promote pedestrian, bike and transit ridership activities ("Bike to Work Week")**

FOR MORE INFORMATION...

<http://www.cleanaircounts.org/workplacetransportationoptions.aspx>

Chicago Clean Air Counts' "Workplace Transportation Options" strategy describes alternatives to single passenger commuting and the EPA's Commuter Choice Leadership Initiative.

http://www.sustainablecitiesinstitute.org/view/page.basic/report/feature.report/Report_Idling_Reduc_Programs_Chicago

Report: Idling Reduction Programs for the Chicago Metropolitan Area

<http://ftp.cleanaircounts.org/Antidling.aspx>

Chicago Clean Air Counts' "Idling Gets You Nowhere" anti-idling campaign



Chapter 4

Grounds and Roads

INTRODUCTION

Kane County owns, operates, and maintains 750 lane-miles of roadways, 256 acres of County facility campus property, and 1400 acres of County rights-of-way. Kane County responsibly manages its grounds and roads, but the means and methods used can also impact the outdoor quality of life, the health and well-being of its staff and visitors, and the environment beyond the County's property boundaries. Kane County can improve the means by which its grounds and roads are constructed, maintained, and landscaped to be more sustainable.

PROGRESS TO DATE

Kane County does not have a coordinated, strategic plan for improving the sustainability of its grounds and roads. However, individual departments have pursued changes to standard practices which have had incremental effects on the health of the environment, their employees, and fiscal wellness.

Grounds – Facilities Division

Landscaping of grounds (totaling 246 acres in area) is handled by a private contractor. All landscape waste is hauled to a recycling facility. Landscape chemicals and pest management are the responsibility of contracted services. Certain initiatives have been undertaken to improve the sustainable bottom line of properties owned and managed by Kane County:

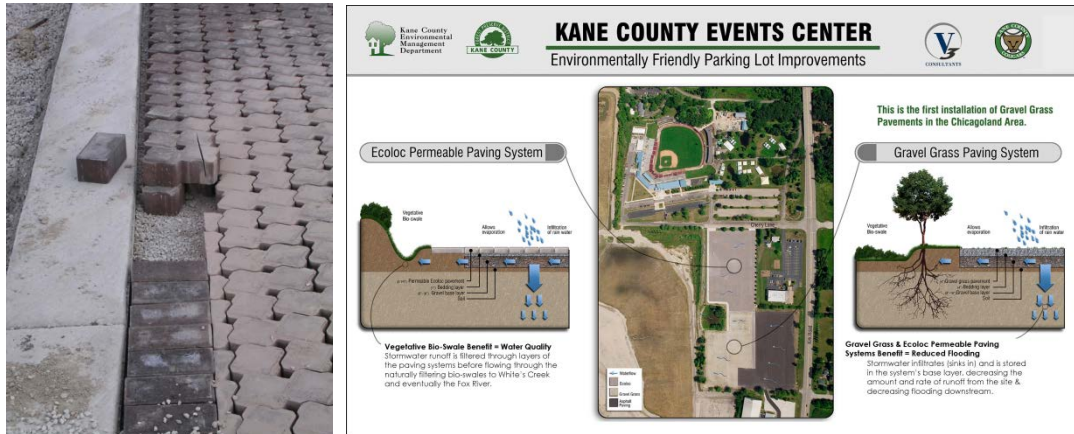
- Starting in 2003 and again in 2010, 5 acres of property at the Kane County Judicial Center was **restored to native landscape**. The project initially involved County staff members to help with the planting. The restoration is a multi-year project, which continues to date.



- In 2011 and 2012 a vacant adult correctional facility was demolished after the County constructed a new one. The vacant structure was constructed out of concrete and steel. The **concrete and steel were recovered** for reuse during the demolition process.



- Permeable pavers allow stormwater to infiltrate into the ground and through an engineered medium, rather than overload stormwater systems or run overland potentially causing flooding downstream. Kane County was a local pioneer of the use of **permeable pavers** for County-owned properties. One installation, at the Kane County Cougars Baseball Stadium parking lot, was the largest installation in the state at the time of its completion. Another permeable paver installation is located at the main Kane County Government Center parking lot.



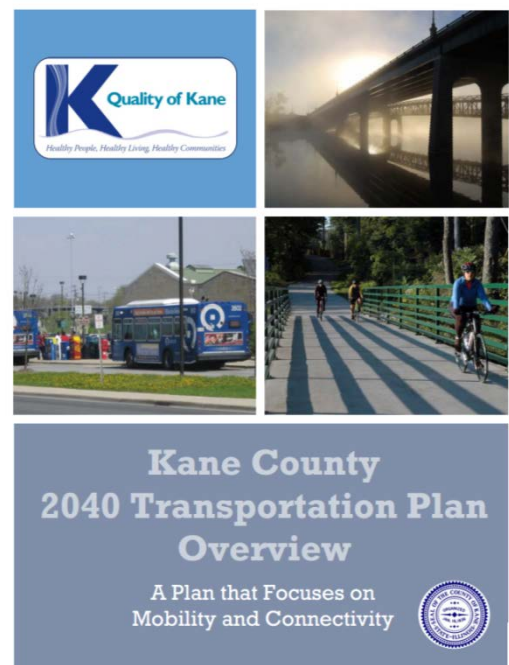
- Kane County also installed **stormwater bioswales** at its North (Randall Road) Campus during a recent redevelopment of the building and parking facilities. Bioswales allow stormwater to slow down and filter through natural plant material, reducing pollutants before entering a stormwater system.

Roads – Division of Transportation

The Kane County Division of Transportation is responsible for the maintenance of the county's 750 lane-miles of county roadway, including keeping roadways free of debris (including snow and ice) and maintenance of the road signs and pavement condition. Mowing and other landscape maintenance of County-managed right-of-way (totaling 1,400 acres) is also handled by the County Division of Transportation.

The Kane County Division of Transportation's **2040 Plan** includes a **"Quality of the Environment" Objective** which contains two strategies specific to County Transportation Facilities and Operational Sustainability:

- Investigate and utilize relevant **Transportation Control Measures** to improve and protect the air and environmental quality of Kane County.
- Design and construct transportation improvements in a manner and method that **preserves and protects the natural resources** of Kane County.



The Stearns Road Bridge Corridor project is called the "Fox River Bridge at the center of an environmental corridor". The corridor project won an American Planning Association, Illinois Chapter Sustainability Award, among numerous others. Nearly three-quarters of the land acquisition was set aside for open space including 65 acres of sensitive wetlands, the McLean Fen and recharge area, and the South Elgin Sedge Meadow/Sand Hill Annex restoration, a 35-acre adaptive management plan area. The project also used environmentally

friendly permeable pavements, reused structures, protected threatened/endangered species of mussels, and installed natural and focused lighting to minimize night sky light pollution.

Some examples of changes to transportation-related practices or projects which have improved the County's sustainable bottom line include the following:

- Until the late 1990s, sand was used to reduce slippage in snow and ice road conditions. However, sand-filled drainage swales caused localized flooding, and required additional maintenance vehicle trips and staff time to clear the drainage swales. In the late 1990s the County **discontinued the use of sand**, thereby reducing the number of vehicle miles traveled and employee hours worked to clean sand residue.
- The Kane County Division of Transportation uses **recycled asphalt** in its road construction and maintenance activities.
- Kane County recently began a **pavement preservation program** to extend the life of its roadways, and reduce the amount of raw material used in a roadway's life cycle.
- The Kane County Division of Transportation has **reduced salt use** on County-owned roads & grounds in the following ways: –
 - Through the use of **computerized salt spreaders and Global Positioning Systems**, drivers can more accurately spread the correct amount of salt and better pinpoint the application of salt on roads and properties.
 - The use of a **beet juice compound** has been used to help the salt stick to the road and activate salt at lower temperatures.
 - On certain Kane County bridges, **temperature sensors can activate in-road pucks** which squirt liquid calcium chloride onto the bridge deck prior to snow or heavy freeze conditions. Liquid calcium chloride can melt snow at lower temperatures than salt. The application of calcium chloride keeps snow from sticking to the road surface so plows can more easily remove it. And since salt corrodes concrete and steel, two primary components of Kane County's bridges, the corresponding reduction of salt use can lengthen the life of the bridges.



- An Intelligent Transportation System (centralized traffic signal control) gives the Kane County Division of Transportation the ability to **manage the timing of traffic signals** on Kane County roads and highways. By improving the ability to monitor and optimize the timing of signals, the County can reduce fuel consumption and emissions associated with vehicles delayed at signals.
- Uninterruptable Power Supply systems have been added at 80 signalized intersection locations to reduce the fuel consumption and emissions associated with vehicles delayed during power outages by maintaining traffic signal operation with battery power.
- On Kane County roads and highways, the Division of Transportation has begun to implement strategies to **reduce light pollution** onto rights of way. Light pollution can impact wildlife, night sky visibility, and glare onto neighboring properties. All of Kane County's 115 signalized intersections and 20 flashing warning beacon locations have been converted to **energy-saving LED modules** from traditional incandescent bulbs.

- The Kane County Division of Transportation maintains the Kane County **Adopt-a-Highway Program** which allows citizens to support anti-litter efforts by signing up volunteer groups to adopt a section of County Highway for 2 years. This effort also assists in maintaining the operations of adjacent storm water management systems. Currently over 100 groups are participating in this program.
- The Kane County Environmental Resources Division worked together with the Kane County Division of Transportation to conduct several trials of **native landscaping** in the County rights-of-way.



GROUNDS STRATEGIES & ACTION ITEMS

ENERGY EFFICIENCY

Strategy G1. Reduce energy used through improved landscape plantings

Turfgrass is the primary landscape plant used in each of Kane County's managed facilities. Turfgrass is an appropriate landscaping material when necessary for active or passive recreational needs, and also can be used for aesthetics to define planting areas. However, public and private landowners are choosing to replace turfgrass with native perennial plantings for several reasons:

After a 3-year establishment phase, native plants:

1. Have a deep root system which is much less dependent on watering for plant health.
2. Do not require fertilizer or pesticide applications.
3. Do not require mowing, saving on fuel/energy use and cost.
4. Provide food and habitat for wildlife, enhancing workplace aesthetic.

The Kane County Division of Transportation supports the use of prairie plants in roadway drainage facilities. However, the use of shrubs, trees and tall grasses are not recommended since facility maintenance, cleanup, and emergency operations are difficult to conduct with these plantings.

Trees, when strategically placed, can help cool buildings in the summer, saving electricity and costs associated with air conditioning. Trees can also shade parked cars, and create a more beautiful, healthy environment for County employees and visitors in addition to local, native wildlife.

Action Items:

1. Identify locations to retrofit landscaping with native plantings in existing facilities
2. Specify native plantings and trees for shade and wellness in landscaping plans for new facility developments
3. Plant trees where they do not interfere with facility maintenance or traffic safety

WATER EFFICIENCY

Strategy G2. Improve site water conservation and stormwater management

Rain harvesting equipment is used to collect rainwater and make it available for reuse as landscaping water. Rain gardens and bioswales collect water runoff from rooftops and parking lots and allow the water to filter back into the ground, filtering out pollutants and recharging groundwater. Permeable pavers allow water to filter into the ground rather than running directly to streams and rivers. This helps to slow the flow reaching local waterways, and also allows some water to recharge the groundwater table. The use of permeable pavers can also reduce the need to build costly stormwater detention ponds.

Action Items:

1. Identify opportunities for water reuse for landscaping irrigation purposes
2. Specify infiltration techniques such as permeable pavers and bioswales when parking lots are constructed or replaced
3. Identify landscape locations to retrofit with green infrastructure including rain gardens, bioswales and native plants
4. Specify new construction to utilize green infrastructure to minimize stormwater runoff

WASTE MINIMIZATION AND HEALTHY LANDSCAPES

Strategy G3. Reduce waste & improve human & ecological health through modifications to landscaping services

Parking lot sweepers, mowers, pressure washers, snow removal trucks and other equipment consume fossil fuels, can generate significant emissions and produce excessive noise. By specifying 'green' versions of traditional lawn and landscaping services, Kane County can reduce its emissions profile and create a healthier, quieter workplace. Additionally, landscaping and other techniques can be used to attract local, native wildlife to a friendly environment which provides a better environment for staff and visitors.

Action Items:

1. Develop specifications for 'Green' Landscape Care for Kane County's facilities
2. Include green landscape specifications in future annual landscaping bid packages
3. On Kane County grounds, plant or specify plants, trees, and shrubs beneficial to local wildlife

ROADS STRATEGIES & ACTION ITEMS

ENERGY EFFICIENCY

Strategy R1. Reduce energy consumed by roadway operations and maintenance

Action Items:

1. Retrofit existing street lighting with more efficient technologies

On County grounds and roads, traffic and street lighting can have a significant impact on the County's overall energy consumption, in particular, street lights that function at constant (higher) illumination levels. Retrofitting existing high pressure sodium (HPS) street lighting with more energy efficient technologies such as LED, Induction Lamp and LEP (Light Emitting Plasma), and using adaptive lighting control technologies where illumination levels are reduced at times when road users are not present, could significantly reduce energy consumption.

2. Consider alternative intersection designs for new or redesigned intersections

Alternative intersection concepts such as Roundabouts, Green Tee, Continuous Flow Intersections, Diverging Diamond Interchanges, etc., significantly reduce energy needed to power traffic signals and reduce motorist delay and fuel consumption as compared to traditional signalized intersection designs.

3. Optimize use of real-time traffic management technologies

With the addition of the Kane County Division of Transportation's future Arterial Operations Center (AOC) scheduled to open in the spring/summer of 2013, traffic impacts on the County's major arterials will be identified and monitored in real-time. In turn, faster response times for signal malfunctions, emergency incidents and impacts related to road construction resulting in reduction in delay and fuel consumption are anticipated. Also, increased notification to the roadway user of these type of traffic impacts through the County's and Travel Midwest.com websites as well as third party providers through Changeable Message Signs, GPS navigation devices, personal handheld devices and news media outlets allowing the user to make better informed decisions resulting in reduction in delay and reduced fuel consumption.

WASTE MINIMIZATION

Strategy R2. Reduce material consumed in road construction and maintenance

1. Reduce Salt Use

Some chemicals used to remove ice, such as calcium chloride and sodium chloride can produce chemical runoff that is harmful to local aquatic ecosystems, vegetation and soil health. In Kane County's local climate, snow removal practices must be managed for public safety, but may be improved by balancing the use of new lower-impact products with other industry standard practices.

2. Increase Use of Recycled Asphalt & Concrete in Road Construction

Recycled materials reduce the amount of former road material which ends up in the landfill as well as reducing the amount of virgin road base material needed to reconstruct a roadway. Recycling materials in-place also reduces the amount of fuel needed to otherwise transport materials to the site.

FOR MORE INFORMATION...

<http://www.epa.gov/greenacres/>

EPA's Great Lakes Greenacres Guide to Native Landscaping

<http://www.illinoisarborist.org/>

Illinois Arborist Association

http://www.epa.gov/oaintrnt/stormwater/best_practices.htm

EPA's guide to Stormwater Best Management Practices

www.nerc.org/documents/asphalt.pdf

Northeast Recycling Council's "Asphalt Shingles Manufacturing & Waste Management in the Northeast" Fact Sheet

www.swancc.org/resources/eco-landscaping-guide

Solid Waste Agency of Northern Cook County's Eco Landscaping Guide

http://apps1.eere.energy.gov/buildings/commercial/resource_database/detail.cfm?p=322

Department of Energy High-Efficiency Parking Structure Lighting Technology Specification

http://apps1.eere.energy.gov/buildings/commercial/resource_database/detail.cfm?p=362

Department of Energy Solid-State Lighting GATEWAY Demonstrations



Chapter 5 Purchasing

INTRODUCTION



Through the creation of a Kane County Green Purchasing Program, the County will join a growing number of local governments, federal agencies, and businesses in applying standards for environmentally preferable purchasing. Kane County's green purchasing practices will work to ensure a sustainable future for the County and provide a model for the community. The Program will act as a guide to encourage County agencies to buy products that are cost effective, meet performance requirements and are environmentally preferable whenever

practicable. These products will provide various environmental benefits, including resource efficiency, reduced toxicity, durability, and/or recycled content.

Green Purchasing is simply one more strategy to help the County deliver services to residents in the most efficient and cost effective manner. Green purchasing can reduce government operational costs, save taxpayer money, safeguard resources for future generations, and find better performing products to provide vital services to communities.

County Green Purchasing Programs are significant because volumes purchased can make a positive difference in markets, encouraging businesses to maintain strong environmental commitments and inspiring suppliers to stock more ecologically responsible products. This demand will ultimately support suppliers in providing green products at better prices for residential consumers as well.



PROGRESS TO DATE

- The Purchasing Department converted from paper-based bid/proposal document to electronic bids in 2011 resulting in a reduction in copy paper and toner usage, an elimination of envelope use and postage, and a reduction in copier run times.
- Beginning in 2011 the Purchasing Department began improving bid specifications & requirements to include environmentally friendly cleaning products, janitorial paper supplies, office paper supplies, and remanufactured or recycled toners.
- Some cleaning products currently used meet at least one of two industry-standards: GreenSeal GS-37 for general purpose, bathroom, glass and carpet cleaners as well as the Ecologo CCD-146 standard

for hard surface cleaners. Other cleaning chemicals like floor cleaner are not certified under green cleaning industry standard but do meet EPA specifications for health.

- The Purchasing Department conducts a confidential document shredding program, as needed, for destruction of old bid and proposal documents, inviting other departments to bring their documents as well. This effort improves office space and file cabinet storage capacity and assures recycling of all paper fiber.
- The Division of Environmental Resources printed the 8-page annual 2012-2013 Kane County Recycles Green Guide on 100% post-consumer recycled content paper.

STRATEGIES & ACTION ITEMS

Strategy P1: Develop a Kane County Green Purchasing Program

A Kane County Green Purchasing Program will encourage the use of environmentally superior products, where quality, function and cost are equal to or more favorable than conventional products. The program will consider and recommend products and packaging materials based on their recycled content, the efficient use of energy and natural resources, and the potential for safe non-hazardous disposal; and will compare cost-effectiveness alongside simple cost. A Green Purchasing Program can boost the morale of staff as well, and will set an example for employees and visitors who encounter environmentally superior products or services on County campuses.

Action Items:

1. Assemble Green Purchasing Program Examples

A review and analysis of best practices will advise the creation of a top notch purchasing program.

2. Develop Kane County Green Purchasing Program

Staff from Environmental Resources and Purchasing will draft and finalize the Program, seeking approval as appropriate with goal to have a completed program guide in use by 2014 or sooner.

3. Include Requirements and Recommendations in Service Contracts

As a purchaser of office, cleaning, landscaping, and maintenance supplies and services, the County is well positioned to increase the environmental sustainability of its operations through strategic contracting and purchasing procedures, while also requiring better product reporting from vendors.

4. Conduct Education and Outreach

Through education and outreach to staff, promote and support the Green Purchasing Program in order to encourage environmentally preferable products whenever practicable, streamline purchasing across departments, and consolidate purchases into fewer orders.

The Kane County Green Purchasing Program will address the following categories and elements:

Recycled-content Products

Utilizing materials made of recycled content from municipal, business, and other recycling programs adds strength to the market demand for reused materials while reducing waste to landfills and incinerators.

- Measure Recycled Content: Number or percentage of products on lists with recycled content

Environmentally-preferred Paper Products

According to RPN's 2009 Responsible Purchasing Trends Report, office paper and janitorial paper products constitute the most common green products purchased by local government. Specifications, such as post-consumer recycled content paper or certifications such as the Forest Stewardship Council (FSC) or the Sustainable Forestry Initiative (SFI), have positive impacts on forest, water and energy use. Depending on the volume of paper purchased, County buyers may be able to procure environmentally-preferable papers without increasing costs. Alternately, any additional cost for recycled-content paper may be offset by paper reduction strategies, such as defaulting all printers to duplex (2-sided) printing, reducing margin widths, and encouraging paperless practices. In conjunction with paper reduction strategies, Kane County will work towards the purchase of at least 30% (with an ideal of 100%) post-consumer recycled content paper for County publications and intra-office use.

- Measure Paper: Quantities purchased/reduced consumption, percentage of post-consumer recycled-content



Energy Efficient Products

The [U.S. ENERGY STAR](#) Program is an easy way for consumers to identify and purchase energy-efficient products that offer savings on energy bills without sacrificing performance. Products with ENERGY STAR ratings include copiers, fax machines, mail machines, computers, lighting (including traffic lights), appliances, air conditioners, and more.

Green Computers and Office Equipment

In addition to maximizing energy efficiency of computers and office equipment, purchasers can also examine the environmental impacts throughout a product's life, including material extraction, energy and water required in the manufacturing process, and end-of-life handling or recycling. The Electronic Product Environmental Assessment Tool (EPEAT) allows purchasers to evaluate, compare, and select desktop computers, notebooks, and monitors based on environmental criteria. EcoLogo offers similar standards for printers, scanners, copiers, and other office equipment.

- Measure Computer and Office Equipment: Number of energy-efficient appliances purchased each year, annual weight of electronics recycled



Green Cleaning Products and Maintenance Supplies

Many cleaning products are considered hazardous due to their flammable, corrosive, or toxic properties and therefore present safety, health and cost concerns. At the same time, benign but equally high-performing green cleaning products that meet the standards of third-party organizations like [Green Seal](#) or [EcoLogo](#), are becoming more readily available. Environmentally-friendly maintenance supplies including light bulbs, air filters, and paint can also be purchased.

- Measure Cleaning Products: Number of different items on list, percentage non-toxic (Green Seal & Eco-Logo) products on lists, recycled content of janitorial paper supply (toilet tissue, paper towels), percentage of environmentally preferable maintenance supplies (light bulbs, air filters, paint, etc)

Strategy P2: Create a Kane County Surplus Exchange Program

Creating an internal office equipment, furnishings, and supplies exchange program can save money as well as resources, by redistributing items between County offices for County use only. This sort of program works well for a variety of items under \$500. It enables staff to share resources and reuse the unwanted but still useful items from other offices rather than ordering new furnishings or supplies. A surplus exchange program can be run via an internal website or email list, monitored by the Purchasing Department.

Action Item:

1. Develop Kane County Surplus Exchange Program

Staff from Environmental Resources and Purchasing will create and monitor a surplus exchange program.

- Measure Program Use: Number of exchanges made and the amount of money saved through avoiding new purchases.

FOR MORE INFORMATION...

Federal Government: <http://www.epa.gov/epp/>

The federal government site houses Environmentally Preferable Purchasing publications and model policies for federal and local governmental entities and their contractors.

<http://www.epa.gov/epp/pubs/greenguides.htm>

http://www.epa.gov/epp/pubs/buying_green_online.pdf

Guides to purchasing products or services that have a lesser effect on human health and the environment when compared with competing products or services.

IL State Government: http://www2.illinois.gov/gov/green/Documents/2006_GGCC_Report.pdf

The State of Illinois is using its purchasing power to help maintain a healthful environment for the 13 million residents of the state. State agencies, boards and commissions use products that are non-toxic and made from local resources. These purchasing preferences keep Illinois clean and also promote economic development.

National Association of Counties (NACo):

<http://www.naco.org/programs/csd/pages/greengovernmentinitiative.aspx>

<http://www.uscounties.org/GreenPurchasing/index.html>

NACo provides an interactive resource for green purchasing strategies, assessment tools, model materials, and county success stories.

Business level:

<http://www.greenblue.org/activities/forest-products/>

GreenBlue’s site is full of links to environmental information about the sourcing, production, use, and end-of-life of paper, including analyses, trend reports, white papers, case studies, and fact sheets, connections to working groups, forums, and loads of green business resources.

Community level:

<http://www.gogreencommunities.org/>

U.S. Communities provides guidance for implementing a green purchasing policy along with cooperative purchasing contracts with major suppliers such as Office Depot, available for local governments across the country to purchase “green” products.

<http://www.responsiblepurchasing.org/>

The Responsible Purchasing Network provides a wealth of resources related to green procurement. Download RPN’s 2009 Responsible Purchasing Trends Report here.

Green Cleaning:

<http://www.greenseal.org/FindGreenSealProductsandServices/Products.aspx>

www.greenseal.org/gs37.aspx

Green Seal GS-37

www.ecologo.org/en/seeourcriteria/details.asp?ccd_id=371

EcoLogo CCD-146, Hardsurface Cleaners



Chapter 6

Facilities



INTRODUCTION

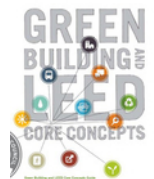
The American Society of Civil Engineers (ASCE), American Council of Engineering Companies (ACEC), and American Public Works Association (APWA) came together in 2009 to state that “A more environmentally, economically and socially sustainable natural and built environment is essential and achievable.” Sustainable construction and building, grounds, and road maintenance has garnered much attention in recent years. Federal and State programs have promoted making public buildings more energy and water efficient, and those efficiencies are translating into operational budget savings.

Among the buildings owned and operated by Kane County are an historic courthouse built in the 1892, a former seminary built in 1941, new animal control and correctional facilities, and a once-department-store recently converted into offices, storage, and judicial hearing rooms. Kane County operates 28 buildings with over 984,000 square feet of total space. These facilities are located throughout Kane County, and each is unique regarding maintenance and improvements.

This chapter focuses on ways to reduce the energy and water used to operate and maintain Kane County facilities, minimize waste associated with operations, and make the facilities a healthier, more efficient and inspiring place to work. Many of the **strategies** and **action items** will also reduce the financial burden of operating and maintaining County facilities.

Many green building and operating standards exist in the United States, for both construction and operation of facilities like those of Kane County. Green building standards provide a mechanism for verification that investments in sustainable building techniques will result in actual cost, energy, material, and water savings. Some rating systems address the entire site development or facility operational cycle, accounting for energy, water, indoor health, and waste. Some rating systems focus on single resources such as energy or water. Following is a brief description of green building standards referred to in the strategies in this chapter.

1. **LEED**: Leadership in Energy and Environmental Design) – developed by the U.S. Green Building Council, a rating system that can be pursued for new construction, existing buildings, or entire neighborhood design. LEED accounts for many resources such as water, energy and materials to designate a score or building rating.



2. **Green Globes:** developed by the Green Building Initiative, a rating system that applies to the construction or operation of commercial buildings. Green Globes ratings account for a wide range of resources (energy, water, etc.) similar to LEED.
3. **Energy Star:** a U.S. Environmental Protection Agency tool, the Energy Star Portfolio Manager is used by facility owners to track energy and water use of existing buildings. Energy Star labels can be earned for facilities which achieve energy efficient performance compared with other similar facilities. Energy Star labels are also applied to appliances, fixtures, and other energy consuming goods.
4. **Water Sense:** a U.S. Environmental Protection Agency tool similar to Energy Star, but which measures the water efficiency of appliances and fixtures. May be a rating for whole facilities in the future.



PROGRESS TO DATE

ENERGY

- Over \$1.2 million of Kane County's **Energy Efficiency and Conservation Block Grant** funds were used for facility energy efficiency upgrades between 2009 and 2012. The upgrades included the following:
 - In 2010 and 2011, energy efficiency **audits** were conducted at six of the County's largest facilities (Judicial Center, Juvenile Justice Center, North [Randall Road] Campus, 3rd Street Courthouse, Kane County Government Center Building A, and Health Department.) Lighting audits were conducted at the remainder of facilities at the Government Center.
 - **Lighting retrofits** were conducted at all facilities audited in 2010 and 2011. Light fixtures, ballasts, bulbs, and sensors (occupancy and light) were installed at each of those facilities. Exterior lights were retrofitted at select facilities.
 - **HVAC systems** were upgraded at the Kane County Government Center, and the Juvenile Justice Center in 2011 and 2012.
 - The County's **Energy Management System** was replaced or updated at two facilities in 2011 and 2012.
 - **Cool roofs** were installed on two facilities (3rd Street Courthouse and Building I) in 2011.
- **Facilities** staff performs **routine maintenance** to HVAC systems to maintain their intended operational efficiency. For example, regular changes to furnace filters reduce the burden on air handlers, saving energy and extending system life.

WATER

- **Dual function (dual flush) toilets** are installed at the North (Randall Road) Campus and at the 3rd Street Courthouse to save water.
- **Permeable Pavement** is installed at the Kane County Cougars Parking Lot and the Kane County Government Center to reduce the volume of stormwater runoff and encourage the infiltration of stormwater from the surrounding facilities and parking lots at those locations.
- **Bioswales** were installed at the North (Randall Road) Campus parking lot to improve the filtration of pollutants from stormwater from the surrounding facility and parking lot.

WASTE

- **Single-stream recycling bins** have been distributed throughout the county buildings - small desk side bins and large common area bins, with more coverage planned for the future.
- Quarterly **recycling newsletters** are emailed to all staff with reminders about County recycling program.
- The Kane County Information Technology Department sends all internal e-waste to HOB International, an R2-certified e-scrap recycler. Over 16,000 lbs. of retired County **computers and electronic equipment were recycled** through this program in 2011.

STRATEGIES & ACTION ITEMS

ENERGY EFFICIENCY

Nationwide, the consumption of electricity and natural gas in buildings is the greatest contributor to greenhouse gas emissions. In 2011, Kane County consumed a total of 13.3 million kilowatt hours of electricity and 522,904 therms of natural gas, amounting to a total 97.8 million (97,890,805) kilo British thermal units (kBtu). Energy costs at Kane County are well over \$1 million each year.

The Kane County 2040 Energy plan, adopted in May, 2011, includes the following goal: “Kane County will reduce energy consumption in County-owned buildings by 10 to 25 percent, based on the specific energy and cost savings opportunities indicated in each building’s energy audit reports. Performance monitoring will track progress and identify adjustments to energy efficient improvements needed to achieve optimal savings.” Kane County government has begun to implement energy efficient strategies in its 28 buildings, but with facilities that vary in age, size, and function, each has different energy needs and opportunities.

Strategy F1: Improve energy efficiency – Existing Buildings

Energy use in existing facilities can vary widely depending on the facility’s age and construction type. Energy audits provide a snapshot of energy use in existing facilities. Energy audits can reveal a wide range of opportunities to improve energy efficiency. Retrocommissioning is the process of returning the systems in a building to their intended functionality. Retrocommissioning includes very low-cost system adjustments, and typically has a very short return on investment.

Energy use should be tracked to identify trends and identify any anomalies which could suggest facility issues. Energy audits will identify energy reduction measures which can be performed in a prioritized manner as funds are available.

Action Items:

1. **Conduct second-round energy audits, retrocommissioning, and thermal imaging of Kane County Facilities**
2. **Maintain Energy Star Portfolio Manager for Kane County Facilities**
3. **Prepare quarterly Energy Star Portfolio Manager reports**
4. **Seek Energy Star building certification for buildings which meet EPA criteria**
5. **Identify building(s) to retrofit in pursuit of Energy Star certification**



6. Train staff to perform annual building commissioning
7. Perform annual building commissioning
8. Develop building-specific energy reduction goals
9. Develop monthly brown bag lunch series on energy efficient and green building systems for County staff
10. Specify Energy Star rated appliances and fixtures for all facilities upgrades and retrofits
11. Continue interior and exterior lighting retrofits including occupancy and daylight sensors
12. Retrofit exterior lighting with Dark Skies compliant fixtures
13. Investigate using custodial to power down copiers, fax machines and other office equipment at close of business to reduce “phantom” electrical load
14. As determined by energy audit and cost savings, add insulation, weatherize building envelope, and replace windows
15. When replacing or resurfacing roofs, consider cool or green roof applications
16. Eliminate unused or underused buildings from county inventory



Strategy F2: Minimize energy use – new construction

The construction of new facilities contains the potential to include energy efficiency action items in the most cost-efficient manner possible. Fundamental building design, including site location and facility site orientation, can have a tremendous impact on the base energy load required to light, heat, and cool a facility. The inclusion of green building design from the outset of a project, by using an integrated design process, will ensure the greatest efficiencies and minimize costs needed to meet higher energy requirements.

1. Ensure new facility design team includes personnel with Certified Energy Manager and LEED AP, Green Globes, or other green building certifications
2. Utilize Integrated Design Process to make energy efficiency and green construction techniques integral to the planning process
3. Where possible, locate new Kane County facilities on infill sites and close to existing motorized and nonmotorized transportation networks
4. Include Energy Star Certification as a specification for design and construction of new Kane County facilities
5. Specify utilization of a Green Building rating system for design of new facilities such as LEED or Green Globes
6. Design new Kane County facilities with a site orientation to maximize natural light and passive solar gain
7. Utilize daylighting whenever possible to minimize need for artificial lighting
8. Maximize natural ventilation and consider geothermal, solar thermal, and other passive HVAC technologies

Strategy F3: Consider purchase or installation of Renewable Energy for County Facility Energy Use

The cost for Renewable energy systems has changed significantly since the outset of the Federal American Recovery and Reinvestment Act. Funding for system development, deployment, and pilot projects has resulted in systems which have dropped in price and increased in reliability. While cost-effective energy efficiency projects should always be given priority in order to reduce the base load of electricity needed to operate a facility, renewable systems can also be considered to remove the dependence on grid-produced electricity and lower monthly energy costs.

Action Items:

1. **Research feasibility of renewable energy project on County property**
2. **Conduct pilot renewable energy project on County property**

WATER EFFICIENCY

Water supply and water use is a key focal point in planning for sustainable operations. As a leader in sustainability, Kane County will continue to lead water efficiency efforts, including effective water demand management.

Strategy F4: Improve water efficiency

Action Items:

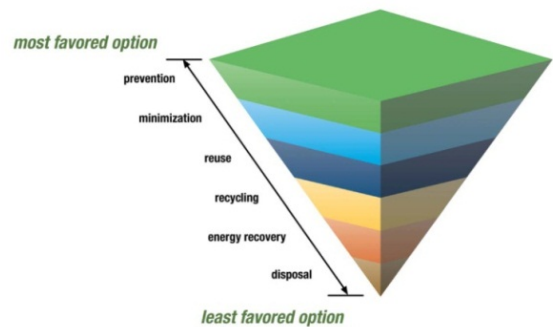
1. **Include water use in Phase II facility audits**
2. **Maintain water data in Energy Star Portfolio Manager**
3. **Prepare quarterly Energy Star Portfolio Manager reports including water use**
4. **Use energy audit to identify building(s) to pursue water efficiency improvements**
5. **Develop building-specific water efficiency goals**
6. **Update plumbing fixtures, including faucets, toilets, and showerheads with WaterSense labeled products or better**
7. **Investigate water filtration systems to replace bottled/ delivered water service**
8. **Check for leaks in water fixtures and plumbing systems and make necessary repairs**
9. **Design new facilities with water efficient systems and fixtures**



WASTE MANAGEMENT

Operations and maintenance of County buildings and grounds can generate a significant amount of waste. As these products flow through County facilities, there are a number of opportunities to reduce waste and its associated impacts as well as to reduce costs and improve efficiency.

An integrated waste management paradigm is based on a hierarchy designed to build more strategic preventive management practices into the waste management process. This integrated approach prioritizes prevention, minimization, the three R's (reduce, reuse, recycle) and energy recovery over landfill disposal.



Integrated Waste Management Hierarchy

Strategy F5: Improve opportunities for recycling and waste minimization

Expansion of the operational recycling program through an evaluation and increase of conveniently placed bins for both recycling and waste will promote and improve employee understanding and participation. Analyzing efficiency and setting goals for waste minimization will benefit all levels of county operation, saving money and resources. Responsible recycling of computers and electronic equipment and proper disposal of hazardous materials from County offices are important elements of operational waste management.



Action Items:

- 1. Increase number of bins in county offices, and optimize locations to create a unified program throughout**
- 2. Install recycling guideline posters above common areas recycling bins**
- 3. Create staff waste reduction and reuse education program**
- 4. Require waste haulers (waste/recycling; landscaping) to provide collection data in bi-annual reports**
- 5. Develop county office equipment and supplies surplus exchange program**
- 6. Conduct a feasibility study for closed loop recycling of food waste at the Adult and Juvenile Justice Centers and the Animal Control facility**
- 7. Create statute book recycling and confidential file management recycling program**
- 8. Create and promote procedures to improve employee understanding of and participation in computer and electronics recycling**
- 9. Join the State Electronics Challenge to track green purchasing and e-cycling successes of the Kane County Information Technology Department**
- 10. Create and promote procedures to improve employee understanding of and participation in proper disposal of hazardous materials**



FOR MORE INFORMATION...

www.usgbc.org/LEED/

The United States Green Building Council (USGBC) developed and maintains the Leadership in Energy and Environmental Design (LEED) green building rating system for new construction and existing buildings.

<http://www.greenglobes.com/>

The Green Building Initiative (GBI) developed and maintains the Green Globes green building rating system for new construction and existing buildings.

<http://www.energystar.gov/>

ENERGY STAR is 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. Portfolio Manager is an interactive energy management tool that allows tracking and assessment of energy and water consumption across a portfolio of buildings in a secure online environment.

<http://www.epa.gov/watersense/>

WaterSense is a partnership program by the U.S. Environmental Protection Agency which identifies water-efficient products, new homes, and services. Products and services that have earned the WaterSense label have been certified to be at least 20 percent more efficient without sacrificing performance.

<http://www.onestopgreen.com/>

One Stop Green, LLC, a green, energy efficient equipment distributor for residential, business and commercial properties, has announced a new partnership with One2flush. One2flush makes one of the most affordable aftermarket dual flush conversion kit for toilets. With the One2flush, the average family can save 30 gallons a day, which will ease the demands on local wastewater treatment plants.

<http://www.epa.gov/climatechange/wycd/waste/downloads/overview.pdf>

U.S. Environmental Protection Agency's 2002 fact sheet, "What Is Integrated Solid Waste Management?"



Chapter 7 Workplace Habits

INTRODUCTION

Kane County government employs over 1000 individuals responsible for carrying out a wide variety of tasks in distinctly varied environments. The day-to-day activities, habits and decision-making of employees can have a significant impact on the sustainable future of Kane County's operations. Employee habits such as powering down computers and equipment, reducing waste, and recycling as much as possible rely heavily on long-term cooperation. The active, concerted efforts of employees to make more sustainable choices in the workplace will maximize implementation of the County's sustainability gains, save taxpayer dollars, improve public image and act as a model for other organizations both public and private. This chapter highlights County guidance that will assist employees in making more sustainable choices in the office.



PROGRESS TO DATE

- Quarterly **recycling newsletters** are e-mailed to all staff.
- Staff in the **Development Department** recycle a wide variety of items; use existing ceiling fans; turn computers and lights off at the end of the day; use more sustainable/recycled/recyclable products at meetings and workshops; and reuse outdated letterhead by asking the print shop to make pads of paper into notepads.
- **Environmental Resources Division** staff provide coffee mugs for hot drinks; turn computers and lights off at the end



of the day; instituted paperless meeting note-taking and tele-meetings; carpool to meetings and conferences; maintain plants for indoor air quality; select



smaller margins, default duplex printing and black and white printing; use single sided paper for scratch paper; initiated a pilot surplus exchange program for Building A; and printed the 8-page annual Kane County Recycles Green Guide (2012) on 100% post-consumer recycled content paper.

- The **Health Department** uses water filtration machines which dispense hot and cold water. These machines are located on each floor and in the large conference room used for meetings with outside partners. It eliminates the need for bottled water and delivery of the large containers used in dispensers. Bottled water and heating water is not necessary since people bring their own bottles to fill up and use the hot water for coffee, tea and hot chocolate. The department also participates in the Cintas document destruction program, with designated bins around the office where paper is shredded and recycled. There are copy machines that allow employees to scan and e-mail documents directly to recipients, cutting down on the amount of paper used. The department has smart boards that can capture notes taken during meetings, which are then downloaded to a jump drive and e-mailed out. This helps reduce the amount of paper needed for taking notes.
- The **Finance Department** staff reduced their paper usage.
- Staff in **GIS-Technologies** save paper by scanning instead of copying; turn computers and printers off at night; print on both sides to save paper; recycle shredded documents; and submit the GIS Monthly newsletter digitally.
- **Juvenile Justice Center** residents use reusable trays, spoons and cups; staff have converted many paper forms to electronic forms; purchased large washing machines able to wash several loads of laundry at once; and residents in the Challenge program grow vegetables for salads and salsa.
- Staff in the **Purchasing Department** use duplex printing; surplus supply redistribution; and reuse blank back pages of all printed paper in the fax machine.
- In the last two years (2010 & 2011), staff in the **State's Attorney's Office** disposed of over 45,000 pounds of old files by pulping and recycling the paper at [RockTenn](#); set copiers on the energy saving mode when not in use; sent subpoenas to all police officers via email; scanned voluminous discovery to disc for defense attorneys instead of copying those documents; initiated an internal surplus program to reuse office supplies and equipment; and utilized an office intranet site for various contact lists, the employee handbook, schedules and instructions for use of office equipment such as phones, scanners and computers to reduce paper use.
- **Supervisor of Assessments** staff use less paper by scanning documents and selecting duplex printing instead of single copies where feasible; purchased energy saving copiers; receive and send faxes electronically when possible; are transitioning to electronic Board of Review packets; and shut off all non-essential electronics at night.



STRATEGIES & ACTION ITEMS

ENERGY CONSERVATION

For the purpose of the Sustainability Plan, **energy conservation** is defined as the efforts by Kane County staff to reduce the amount of energy consumed through our day-to-day activities, habits and decision-making. **Energy efficiency** is the result of efforts to reduce energy consumption through improvements to the buildings and infrastructure operated by Kane County and is addressed in the Facilities chapter.

Strategy WH1: Develop Energy Conservation Education Program

A program will be designed to educate Kane County employees about energy consumption of office/workplace equipment and the advantages of conserving energy. Outreach and education will emphasize opportunities and offer usable strategies for employees to operate computers, copiers and other office equipment in a manner that conserves energy.

Action Items:

1. Research Employee Education Programs

Investigate successful examples to include in Kane County's program.

2. Develop Employee Energy Conservation Education Program

Compile resources using various media to educate Kane County employees and provide accessible tools that encourage energy conservation.

3. Implement Employee Energy Conservation Education Program

Offer educational resources and tools to each department in Kane County, selecting the most appropriate medium.

4. Track progress of Employee Energy Conservation Education Program

Schedule regular follow-ups with each department to determine progress and need for additional assistance.

WASTE MINIMIZATION

While the County Facilities Department is responsible for the management of waste and the coordinated efforts of the recycling program, the employees are responsible for how they use and preserve their office supplies and materials. By addressing office habits, there are many opportunities to reduce, reuse, recycle and minimize waste, reducing costs and improving efficiency.

Effective education and outreach is the key component in affecting positive behavior change and attention to conservation in the work place. In conjunction with improved infrastructure and signage, a regular outreach effort will educate staff, support understanding, and encourage participation in the County Buildings Recycling Program.

Strategy WH2: Develop Recycling Education & Outreach Program

Through a number of efforts, Kane County employees will be encouraged to conserve, reuse and recycle in order to reduce waste to a minimum. Quarterly newsletters on the Recycling Program will continue to offer tips, instructions, and opportunities for rewards. The Recycling Coordinator will form a Green Advocates Team, including interested staff from each building/ department/ office, and work with them to promote conservation, recycling and waste minimization. Developing a method for employees to track data on office

supply usage will enable ongoing measurement and analysis of the County’s sustainability efforts. This could be incentivized through friendly office competitions planned and monitored by the Green Advocates Team.

Action Items:

1. Research Employee Education Programs and Review Kane County Recycling and Waste Reduction Policies

Coordinate Kane County’s recycling and waste reduction policies with examples of successful educational programs to develop a recycling and waste reduction program adaptable to each department/building.

2. Form a Green Advocates Team

Invite interested representatives from each department or building to participate in the Green Advocates Team.

3. Educate and Train Green Advocates Team

Prepare members of the Green Advocates Team to implement the recycling and waste reduction program.

4. Track progress of the Green Advocates Team

Schedule regular meetings with the Green Advocates Team to determine progress and need for additional assistance.

The Kane County Recycling Education & Outreach Program will address the following categories and elements in order to minimize resource use, encourage reuse and recycling and to reduce costs:

Reduce

The best way to cut costs - financial, social, and environmental – is to conserve. Employ paper-use reduction strategies, such as defaulting all printers to duplex (2-sided) printing, reducing margin widths, and encouraging paperless practices like scanning instead of printing. These reductions in use may offset any costs associated with purchasing recycled-content paper. The use of digital organizers instead of paper calendars can provide further paper reduction. The use of eco-font or gray font shading may reduce toner usage. Use of water coolers with reusable bottles, and pitchers with glasses for meetings will help to avoid bottled water and the associated waste.



Reuse

Waste can be greatly reduced by using ceramic, washable mugs, instead of single-use foam cups for coffee. Reusing office supplies, furniture, and materials saves resources and money. Environmental Resources staff will work with the Purchasing Department to promote the Surplus Exchange program.



Recycle

Items accepted in the single-stream recycling bins include all paper products from office printing paper, envelopes and notebooks to magazines, newspapers and cardboard boxes are recyclable, as well as glass, plastic, tin, and aluminum containers. Single-stream recycling is a term that refers to the mixing of the previously separated categories of paper and containers. Recyclables are then taken to a recycling facility that sorts the materials, bales them, and sends them to remanufacturing markets. These materials are valuable resources that can be remanufactured again and again. Education will help to inform all employees of this value. Used toner cartridges can also be

recycled through easy-to-use take back programs through manufacturers or suppliers. Electronics are recycled through the IT department.

Strategy WH3: Model a culture of Zero Waste events and meetings

Successful zero waste events and meetings require planning ahead of the scheduled event. Waste reduction becomes a priority when creating meeting documents. Reusable and/or compostable food service items need to be secured ahead of time either by the host or the caterer. As commercial compost processing facilities become more common and accessible, the development of a Kane County food-scrap composting program may be feasible.

Action Items:

1. Develop Guidelines for Hosting Zero Waste Events and Meetings

Investigate successful examples of other zero waste programs and feasibility timeline for a food-scrap composting program to include in guidelines for Kane County.

2. Provide Zero Waste Guidelines to Appropriate Departments

Determine departments that host meetings or events and make guidelines and assistance available.

3. Implement Food Scrap Composting Program Timeline

Meet with appropriate County staff and compost processing facilities representatives to develop and implement a Kane County Food-Scrap Composting Program.

4. Install Dishwashers

Investigate priority locations for dishwasher installations that provide access for departments that regularly host meetings or that employ a large number of staff. Secure funding, purchase and install dishwashers.

5. Track Progress of Zero Waste Initiative

Schedule regular follow-ups with each department to determine progress and need for additional assistance.



FOR MORE INFORMATION...

http://www.energystar.gov/ia/business/challenge/bygtw/Green_team_checklist_FINAL_4.pdf?4704-7257
Energy Star Green Team Checklist

http://www.energystar.gov/index.cfm?c=bygtw.view_showOffice
Bring Your Green to Work

www.epa.gov/osw/conserve/materials/organics/food
EPA Food Waste Pages

www.compostingcouncil.org
U.S. Composting Council

www.zwia.org
Zero Waste International Alliance



Chapter 8 Employee Wellness

INTRODUCTION

There are many factors, or determinants, that affect health and have a tremendous influence on our well-being. The physical environment, social and economic factors, and clinical care all play a part in an individual's health. Kane County is focusing on all determinants of health as part of the Employee Wellness program. The County strives to promote wellness in all its employees, knowing that it will allow them to lead healthier, more productive lives with less time away from the office due to illness.

Employee Wellness Screening

Kane County Health Department coordinates this program which gives all employees currently enrolled in the county's health plan an opportunity to have a free health evaluation. Evaluations are currently performed by Interactive Health Solutions (IHS), an outside company which coordinates employee wellness programs for employers. All results are confidential and only aggregated data from the evaluations are reported to the County. Appointments for the evaluations are necessary and are available at county buildings during various times once a year as well as lab facilities in the area. The screening is also available to spouses/partners covered under the health plan. Participation is voluntary, but employees receive a \$50/month discount on health insurance by participating. An additional \$50/month discount is available for employee spouses/partners who participate. For 2011, the program had a 98% participation rate for eligible employees.



The following data and charts were provided by IHS as part of the 2011 Report.



1,571 people participated in the full evaluation, of which 533 were spouses of Kane County employees. The chart below shows a few facts from the 2011 screenings. As a comparison, the average Body Mass Index (BMI) for adults in Kane County is 27.6, 27.1 for women and 28.3 for men, and the percentage of smokers is 12% (2011 Kane County Community Health Assessment). Kane County employees have higher BMIs than the average for Kane County residents and the smoking rate among those screened is 30% higher than the rate for Kane County residents.

Interesting Insights About Your Company	
Lab tests on file	61,888
Average BMI (Female/Male)	28.4/29.7
Percentage of smokers	18.2%
Percentage of members referred to a physician	51.9%
Members at risk of a heart attack over the next 10 years	306
Average number of days of exercise	3
Members actively taking steps to improve their health	559

The screenings also showed newly discovered conditions and those individuals were contacted by medical staff from IHS and encouraged to schedule a visit with their personal physician as soon as possible.

	Newly Discovered Conditions	Very Serious
Anemia	35	0
Blood Pressure	83	9
High Cholesterol	173	40
Diabetes	22	1
Kidney Disease	20	7
Liver Disease	94	8
Metabolic Syndrome	317	-

Studies have shown that employee wellness programs improve the health of participants and cut down on insurance costs for employers. According to a Harvard University study, for every dollar spent on employee wellness programs, medical cost savings are \$3.27 and absenteeism costs are reduced by approximately \$2.73/dollar spent.¹ The programs save employers money, help participants meet health goals, and are sustainable because cost savings in health insurance are used to fund additional wellness programs. Healthy employees are more productive which benefits employers and cuts down on employee stress.

PROGRESS TO DATE

Kane County offers various wellness programs for employees that address both physical and social/emotional health:



- On the Move Newsletter:** Provides all employees with health and wellness information, recipes, tips, and tricks to help them lead a healthier lifestyle. During the Weight Loss Challenge and Physical Activity Challenge, the newsletter provides updates on employee progress and prize winners.

¹ Katherine Baicker, David Cutler, and Zirui Song, “Workplace Wellness Programs can Generate Savings.” *Health Affairs* 29, no. 2 (February 2010): 304-311.

- Weight Loss Challenge:** For a set number of weeks, employees weigh-in weekly with status updates provided through the “On The Move” newsletter. Employees may participate individually or as part of a team, and prizes are awarded for different classes (men, women, teams) based on BMI (Body Mass Index) changes and total weight loss at the end of the challenge.
- Physical Activity Challenge:** All employees are encouraged to be physically active. During the Weight Loss Challenge timeframe, an activity log is available on the County Intranet for employees to fill out the type and total minutes of physical activity performed for each day. Prizes are distributed weekly as an incentive to participate.
- Making Kane County Fit For Kids Gardens:** Employees, in addition to all residents, have access to low-cost garden plots sponsored by the Fit for Kids initiative. The gardens are located in Aurora on Highland Avenue, with plans for future expansion.
- Employee Assistance Program:** This employee benefit provides counseling to employees and any family members. The service is staffed with trained professionals who are equipped to handle a variety of counseling needs related to work or personal issues. The EAP can be reached 24 hours a day, 7 days a week.



STRATEGIES & ACTION ITEMS

Strategy W1. Offer Kane County employees opportunities to improve physical health and wellness

Kane County employees currently enjoy many benefits of the Kane County employee wellness program. Expanding on that wellness program and encouraging healthy activities and alternatives in the workplace will result in a healthier staff, less missed work, and reduced insurance costs. Healthy options can include opportunities for increasing daily exercise, nutritional counseling, or nutritional information or alternatives.

Action items – Healthy Eating:

1. Investigate Community Supported Agriculture – Kane County drop-off points for staff use and farmer’s markets within walking distance of County campuses.
2. Investigate “healthy” vending machines/ healthy options in vending machines
3. Post nutritional information on Kane County vending machines
4. Create community garden plots for employees on Kane County grounds or within walking distance of facilities

5. Investigate having an on-site Weight Watchers or similar weight loss support groups

Action items – Active Living:

- 1. Create Kane County staff walking groups**
- 2. Create point of decision signs encouraging stairway use**
- 3. Investigate discounted gym memberships for employees**
- 4. Investigate making Kane County campuses smoke free (already in place at Health Department)**
- 5. Encourage participation in smoking cessation programs**

Strategy W2. Offer Kane County employees opportunities to improve social/emotional wellness

A healthy Kane County workforce must take into account employees' social and emotional wellness. Staff who are able to cope with stress and who feel included and valued in their workplace will be more productive and cost the County less in missed work time. Activities to improve employee social/emotional wellness can include options for learning about or practicing stress management and healthy living techniques. Staff input groups in the workplace can give employees a chance to provide valuable input into decisions which affect them, as well as a vehicle for generating new ideas and building staff cohesiveness.

Action items:

- 1. Work with KC wellness group to promote staff healthy/ active events & promotions**
- 2. Utilize staff input groups for facility, Human Resources & programmatic changes**
- 3. Investigate holding time and stress management classes/workshops**

FOR MORE INFORMATION...

<http://www.bcbsil.com/health/index.html>

Blue Cross Blue Shield Illinois Health and Wellness Website

<http://web.kane/hrm/eapBrochure.pdf>

Metropolitan Family Services – Employee Assistance Program provider:
Phone: 1-800-905-0994

<https://www.interactivehs.com>

Interactive Health Solutions: Provider of employee wellness screenings for Kane County. The website has information on a variety of topics and ways to live healthier lives.

<http://www.choosemyplate.gov/>

My Plate Information for adults and children on healthy eating and active living. Includes sample menus and recipes, food trackers, physical activity trackers, and nutritional information for over 8,000 foods.

<http://www.bountyofkane.org/>

Bounty of Kane: A listing of farmer's markets, farmstands, and other specialty producers in Kane County, including a map of available resources.



Kane County Operational Sustainability Plan





Implementation Matrix

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources				
		2013	2014	2015							
Fleet & Driving											
Strategy FL1 Increase the energy efficiency of Kane County fleet vehicles											
1 Conduct annual analysis of fuel efficient/alternative fuel vehicles	# analyses provided	Pilot set of 4	4	4	Purchasing	staff time	✓				✓
2 Consider alternative fuel vehicles when purchasing new vehicles	# instances	as needed	as needed	as needed	Purchasing	staff time	✓				✓
3 Maximize use of alternative fuels including biodiesel	% fuel as alternatives	Track Use	Develop Goals	Implement	Auditor Sheriff KDOT	staff time	✓				✓
4 Recycle vehicle maintenance materials (motor oil, tires, auto batteries)	Program	Research, Set Baseline	Develop Program	Implement	Environmental Resources Sheriff KDOT			✓			
5 Enroll in green fleet recognition program	Enrollment	Research	Apply	Maintain	Environmental Resources Sheriff KDOT		✓				✓
Strategy FL2 Track fleet data using fleet management tool											
1 Develop fleet management tool	Tool	Research	Compile Data	Track	Auditor KDOT Sheriff	staff time	✓	✓			✓
2 Track fleet data, report annually	Reports		1	1	Auditor KDOT Sheriff	staff time	✓	✓			✓

Implementation Matrix

Goals

Impacted Resources

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources			
		2013	2014	2015						
Strategy D1 Reduce energy and fuel used for Kane County travel and commuting										
1 Create vehicle idle policy	Policy	Research	Develop	Endorse	KDOT Sheriff	staff time	✓		✓	✓
2 Increase carpooling for County functions/meetings	# trips	Develop Tracking Tool	Report	Report	Auditor	staff time	✓		✓	
3 Increase use of video communications/virtual meetings	# meetings	Develop Tracking Tool	Report	Report	ITD	staff time	✓		✓	✓
4 Develop "commuting alternatives" educational and incentive program	Program	Research	Develop	Implement	Environmental Resources Human Resources	staff time	✓		✓	✓
Strategy D2 Support alternative fuel vehicle use and multimodal travel on Kane										
1 Install alternative fuel infrastructure, as appropriate	# stations	as needed	As Needed	As Needed	Facilities KDOT					
2 Identify locations to retrofit existing facilities with pedestrian and bicycle amenities	# retrofits	Research	Develop Plan	Pilot	Facilities		✓		✓	✓
3 Specify pedestrian and bicycle amenities in new County facilities	# specifications	Write Specification	As Needed	As Needed	Facilities KDOT	Incremental costs to be included in bids	✓		✓	✓
4 Promote pedestrian, bike and transit ridership activities ("Bike to Work Week")	# Activities	Research	Pilot	Implement	Green Advocates Team Health	staff time	✓		✓	✓

Implementation Matrix

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources			
		2013	2014	2015						
Grounds and Roads										
Strategy G1 Reduce energy used through improved landscape plantings										
1 Identify locations to retrofit landscaping with native plantings in existing facilities	# sites retrofitted	Research	Identify Locations	Pilot Retrofit	Environmental Resources Facilities		✓	✓	✓	✓
2 Specify native plantings and trees for shade and wellness in landscaping plans for new facility developments	# specifications written	Develop Specs	As Needed	As Needed	Environmental Resources Facilities	Incremental costs to be included in bids	✓	✓	✓	✓
3 Plant trees where they do not interfere with facility maintenance or traffic safety	# trees planted	Identify Locations	10	10	Green Advocates Environmental Resources		✓		✓	✓
Strategy G2 Improve site water conservation and stormwater management										
1 Identify opportunities for water reuse for landscaping irrigation purposes	Program	Research	Pilot	Monitor	Facilities Environmental Resources			✓	✓	
2 Specify infiltration techniques such as permeable pavers and bioswales when parking lots are constructed or replaced	# specifications	Prepare Specs	As Needed	As Needed	Environmental Resources Facilities	Incremental costs to be included in bids		✓		
3 Identify landscape locations to retrofit with green infrastructure including rain gardens, bioswales and native plants	# locations	Identify Locations	Pilot	Monitor	Environmental Resources Facilities			✓		
4 Specify new construction to utilize green infrastructure to minimize stormwater runoff	# specifications	Prepare Specs	As Needed	As Needed	Environmental Resources Facilities	Incremental costs to be included in bids		✓	✓	
Strategy G3 Reduce waste & improve human & ecological health through										
1 Develop specifications for 'Green' Landscape Care for Kane County's facilities	Specifications	Research	Write Specs		Environmental Resources	staff time				
2 Include green landscape specifications in future annual landscaping bid packages	# specifications	As Needed	As Needed	As Needed	Environmental Resources	Incremental costs to be included in bids	✓	✓		✓
3 On Kane County grounds, plant or specify plants, trees, and shrubs beneficial to local wildlife	# plantings	Identify Locations	As Needed/ Able	As Needed/ Able	Environmental Resources Green Advocates Team					✓
Strategy R1 Reduce energy consumed by roadway operations and maintenance										
1 Retrofit existing street lighting with more efficient technologies	# fixtures retrofit	Develop Cost Comparison	Retrofit Fixtures	Retrofit Fixtures	KDOT Facilities		✓	✓		✓
2 Consider alternative intersection designs for new or redesigned intersections	# intersections	Research	Develop Specs	As Needed	KDOT		✓			✓
3 Optimize use of real-time traffic management technologies	Program	Complete Construction	Operate AOC	Operate AOC	KDOT		✓			
Strategy R2 Reduce materials consumed in roadway construction and										
1 Reduce Salt Use	Amount of salt used	Report	Report	Report	KDOT			✓		
2 Increase Use of Recycled Asphalt & Concrete in Road Construction	Percent recycled content	Report	Report	Report	KDOT			✓		✓

Implementation Matrix

		Goals			Impacted Resources						
Action Item	Metric	2013	2014	2015	Department(s)	Cost					
Purchasing											
Strategy P1 Develop a Kane County Green Purchasing Program											
1 Assemble Green Purchasing Program Examples	# Examples	Research	Produce List		Environmental Resources Purchasing	staff time					
2 Develop Kane County Green Purchasing Program	Program	Draft	Final	Implement, Track	Environmental Resources Purchasing Facilities	staff time	✓	✓	✓	✓	✓
3 Include Requirements & Recommendations in Service Contracts	# Contracts	List of Contracts	Implement	Track	Environmental Resources Purchasing Facilities	Incremental costs to be included in bids	✓	✓	✓	✓	✓
4 Conduct Education and Outreach	# Educational Pieces	Develop Materials	Distribute	Track	Environmental Resources Green Advocates Team	staff time	✓	✓	✓	✓	✓
Strategy P2 Create a Kane County Surplus Exchange Program											
1 Develop Kane County Surplus Exchange Program	# Exchanges, \$ Saved	Guidelines	Network	Implement, Track	Environmental Resources Purchasing Information Technologies	staff time		✓		✓	✓

Implementation Matrix

Goals

Impacted Resources

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources				
		2013	2014	2015							
Facilities											
Strategy F1 Improve energy efficiency – Existing Buildings											
1 Conduct second-round energy audits, retrocommissioning & thermal imaging of Kane County Facilities	# Facilities Audited	8	4	4	Environmental Resources Facilities	Depends on facility size	✓				✓
2 Maintain Energy Star Portfolio Manager for Kane County Facilities	# Months	12	12	12	Facilities	staff time	✓				✓
3 Prepare quarterly Energy Star Portfolio Manager reports	# Reports	4	4	4	Facilities	staff time	✓				✓
4 Seek Energy Star building certification for buildings which meet EPA criteria	# Buildings	1	1	1	Environmental Resources Facilities	staff time	✓				✓ ✓
5 Identify building(s) to retrofit in pursuit of Energy Star certification	# Buildings	1	1	1	Environmental Resources Facilities	staff time	✓				✓ ✓
6 Train staff to perform annual building commissioning	# Staff Trained	2	2	2	Facilities	cost of training program, staff time	✓				✓ ✓
7 Perform annual building commissioning	# Buildings	consultant	8	8	Facilities	staff time	✓		✓		✓
8 Develop building-specific energy reduction goals	# Buildings	8	4	4	Environmental Resources Facilities	staff time	✓				✓
9 Develop monthly brown bag lunch series on energy efficient and green building systems for County staff	# sessions	8	8	8	Environmental Resources	staff time	✓	✓	✓	✓	✓
10 Specify Energy Star rated appliances and fixtures for all facilities upgrades and retrofits	# Specifications Written	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost to be included in bid	✓				✓
11 Continue interior and exterior lighting retrofits including occupancy and daylight sensors	# Buildings	0	4	4	Facilities		✓				✓
12 Retrofit exterior lighting with Dark Skies compliant fixtures	# Buildings	As needed	As needed	As needed	Facilities	no extra when replacing fixture					✓
13 Investigate using custodial to power down copiers, fax machines and other office equipment at close of business to reduce “phantom” electrical load	Program	Examples, Costs	Implement	Track	Environmental Resources Facilities	To be determined	✓				✓
14 As determined by energy audit and cost savings, add insulation, weatherize building envelope, and replace windows	# Buildings	As found; audit	As found; audit	As found; audit	Environmental Resources Facilities	To be determined	✓				✓
15 When replacing or resurfacing roofs, consider cool or green roof applications	# Buildings	As needed	As needed	As needed	Facilities	Incremental cost to be included in bid	✓		✓		✓ ✓
16 Eliminate unused or underused buildings from county inventory	# Buildings	As needed	As needed	As needed	Facilities		✓				✓

Implementation Matrix

Goals

Impacted Resources

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources				
		2013	2014	2015							
Strategy F2 Minimize energy use – new construction											
1 Ensure new facility design team includes personnel with Certified Energy Manager and LEED AP, Green Globes, or other green building certifications	# Specifications Written to include green certification design team	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	staff time	✓	✓	✓	✓	
2 Utilize Integrated Design Process to make energy efficiency and green construction techniques integral to the planning process	# facilities designed with IDP	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	none; no extra cost to structure design process using IDP	✓	✓	✓	✓	✓
3 Where possible, locate new Kane County facilities on infill sites and close to existing motorized and nonmotorized transportation networks	# facilities sited on infill	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost to be determined at time of siting	✓			✓	✓
4 Include Energy Star Certification as a specification for design and construction of new Kane County facilities	# facilities designed to Energy Star	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost to be determined in bid	✓			✓	
5 Specify utilization of a Green Building rating system for design of new facilities such as LEED or Green Globes	# facilities designed to Green Rating System	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost to be determined in bid	✓	✓	✓		
6 Design new Kane County facilities with a site orientation to maximize natural light and passive solar gain	# facilities designed with optimal solar orientation	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost vs savings to be determined at time of siting	✓			✓	✓
7 Utilize daylighting whenever possible to minimize need for artificial lighting	# facilities constructed or retrofitted with daylighting techniques	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost vs savings to be determined at time of siting	✓	✓		✓	✓
8 Maximize natural ventilation and consider geothermal, solar thermal, and other passive HVAC technologies	# facilities using passive HVAC	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost to be determined in bid	✓			✓	✓
Strategy F3 Consider purchase or installation of Renewable Energy for County Facility Energy Use											
1 Research feasibility of renewable energy project on County property	report(s) on renewable feasibility	research methods	conduct study	produce report	Environmental Resources Purchasing	staff time	✓				✓
2 Conduct pilot renewable energy project on County property	renewable installation				Environmental Resources Facilities Purchasing	costs to be determined based on feasibility study	✓				✓

Implementation Matrix

Goals

Impacted Resources

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources					
		2013	2014	2015								
Strategy F4 Improve water efficiency												
1 Include water use in Phase II facility audits	# facilities audited	8	4	4	Environmental Resources Facilities	Depends on facility size					✓	✓
2 Maintain water data in Energy Star Portfolio Manager	# Months	12	12	12	Facilities	staff time					✓	✓
3 Prepare quarterly Energy Star Portfolio Manager reports including water use	# Reports	4	4	4	Facilities	staff time					✓	✓
4 Use energy audit to identify building(s) to pursue water efficiency improvements	# Buildings	As found; audit	As found; audit	As found; audit	Environmental Resources Facilities	To be determined					✓	✓
5 Develop building-specific water efficiency goals	# Buildings	8	4	4	Environmental Resources Facilities	staff time					✓	✓
6 Update plumbing fixtures, including faucets, toilets, and showerheads with WaterSense labeled products or better	# Specifications Written	As needed	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost to be included in bid					✓	✓
7 Investigate water filtration systems to replace bottled/ delivered water service	# bottled water coolers removed	research costs/ products	Pilot installation	Installations	Environmental Resources Facilities Purchasing	\$150-250/unit	✓	✓	✓	✓	✓	✓
8 Check for leaks in water fixtures and plumbing systems and make necessary repairs	# buildings checked	research methods	4	4	Facilities	staff time					✓	✓
9 Design new facilities with water efficient systems and fixtures	# facilities designed	develop specs	As needed	As needed	Environmental Resources Facilities Purchasing	Incremental cost to be included in bid					✓	✓

Implementation Matrix

Goals

Impacted Resources

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources			
		2013	2014	2015						
Strategy F5 Improve opportunities for recycling and waste minimization										
1 Increase number of bins in county offices, to create a unified program throughout	# Recycling Bins Added	100	Remaining Needed		Environmental Resources Facilities	\$5,000 - \$10,000	✓		✓	✓
2 Install recycling guideline posters above common areas recycling bins	# Posters Installed	100	100	100	Environmental Resources Facilities	1000	✓		✓	✓
3 Create staff waste reduction and reuse education program	Program	Develop Outreach Materials	Trainings, Outreach	Trainings, Outreach	Environmental Resources	staff time	✓		✓	
4 Require waste haulers (waste/recycling; landscaping) to provide collection data in bi-annual reports	# Audits Completed	2 Audits	4 Audits	4 Audits	Environmental Resources Facilities	staff time	✓		✓	
5 Develop county office equipment and supplies surplus program	Program	Develop Program	Implement	Track	Environmental Resources Purchasing	staff time	✓		✓	✓
6 Conduct a feasibility study for closed loop recycling of food waste at the Adult and Juvenile Justice Centers and the Animal Control facility	Study		Conduct Study		Environmental Resources	staff time	✓	✓	✓	✓
7 Create statute book recycling and confidential file management recycling program	Program	Develop Program	Implement	Track	Environmental Resources	staff time	✓			
8 Create and promote procedures to improve employee understanding of and participation in computer and electronics recycling	Program	Develop Outreach Materials	Implement	Track	Environmental Resources	staff time	✓			✓
9 Join the State Electronics Challenge to track green purchasing and e-cycling successes of the Kane County Information Technology Department	Joined	Join SEC	Track	Track	Information Technology	staff time	✓			✓
10 Create and promote procedures to improve employee understanding of and participation in proper disposal of hazardous materials	Program	Develop Outreach Materials	Implement	Track	Environmental Resources	staff time	✓			✓

Implementation Matrix

Goals

Impacted Resources

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources				
		2013	2014	2015							
Workplace Habits											
Strategy WH1 Develop Energy Conservation Education Program											
1 Research Employee Education Programs	# examples	3			Environmental Resources	staff time					
2 Develop Employee Energy Conservation Education Program	Program	Draft	Final		Environmental Resources	staff time					✓
3 Implement Employee Energy Conservation Education Program	Program			Implement	Environmental Resources	staff time	✓		✓		✓
4 Track progress of Employee Energy Conservation Education Program	Reports	1	1	1	Environmental Resources	staff time					✓
Strategy WH2 Develop Recycling Education & Outreach Program											
1 Research Employee Education Programs and Review Kane County Recycling and Waste Reduction Policies	# examples	3			Environmental Resources	staff time					
2 Form a Green Advocates Team	Team		Form Team		Environmental Resources	staff time					✓
3 Educate and Train Green Advocates Team	# meetings		4	4	Environmental Resources	staff time	✓	✓	✓	✓	✓
4 Track progress of Green Advocates Team	Reports		1	1	Environmental Resources	staff time					✓
Strategy WH3 Model a culture of Zero Waste events and meetings											
1 Develop Guidelines for Hosting Zero Waste Events and Meetings	Guidelines	Develop	Publish		Green Advocates Team	staff time					
2 Provide Zero Waste Guidelines to Appropriate Departments	# contacts		20	20	Green Advocates Team	staff time	✓	✓	✓	✓	✓
3 Implement Food Scrap Composting Program Timeline	Program	Research	Develop	Implement	Environmental Resources	staff time		✓			✓
4 Install Dishwashers	# dishwashers				Facilities		✓	✓			✓
5 Track Progress of Zero Waste Initiative	Reports	1	1	1	Green Advocates Team	staff time					✓

Implementation Matrix

Goals

Impacted Resources

Action Item	Metric	Goals			Department(s)	Cost	Impacted Resources		
		2013	2014	2015					
Employee Wellness									
Strategy W1 Offer Kane County employees opportunities to improve physical health and wellness									
1 Investigate Community Supported Agriculture – Kane County drop-off points for staff use	Program	Research	Develop	Implement	Health Planning	staff time	✓	✓	✓
2 Investigate “healthy” vending machines/ healthy options in vending machines	Program	Research	Pilot	Report	Health Green Advocates Team	staff time		✓	✓
3 Post nutritional information on Kane County vending machines	# Machines	Contact Vendors	Pilot	Implement	Health Green Advocates Team	staff time		✓	✓
4 Create community garden plots for employees on Kane County grounds or within walking distance of facilities	# plots	Research	Pilot	Report	Health Planning	staff time		✓	✓
5 Investigate having an on-site weight watchers group	Program	Research	Develop	Implement	Health	staff time, participant cost		✓	✓
6 Create Kane County staff walking groups	# groups	Develop	Pilot	Implement	Health Green Advocates Team	staff time		✓	✓
7 Create point of decision signs encouraging stairway use	# signs	Develop	Pilot	Implement	Health Green Advocates Team	staff time	✓	✓	✓
8 Investigate discounted gym memberships for employees	Program	Research	Develop	Pilot	Health Green Advocates Team			✓	✓
9 Investigate making Kane County campuses smoke free (already in place at Health Department)	# campuses	Pilot	Implement	Report	Health Green Advocates Team	staff time		✓	✓
Strategy W2 Offer Kane County employees opportunities to improve social/emotional wellness									
1 Work with KC wellness group to promote staff healthy/ active events & promotions	# events	Research	Implement	Report	Green Advocates Team Health	staff time		✓	✓
2 Utilize staff input groups for facility, Human Resources & programmatic changes	# groups utilized	Pilot	as-needed	as-needed	Human Resources	staff time			✓
3 Investigate holding time and stress management classes/workshops	# classes	Research	Pilot	Report	Health Human Resources			✓	✓



Kane County Sustainability Audit

Performance Metrics

Baseline	Directional Indicator	2013	2014	2015	2016	2017
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Fleet & Driving

County Fleet Characteristics

Number of fleet vehicles, total	273	data coll./analysis				
% Sedans	49%	data coll./analysis				
% Light Duty	21%	data coll./analysis				
% Heavy Duty	29%	data coll./analysis				
% Hybrid; Electric	0%	data coll./analysis				
% RVs	1%	data coll./analysis				
Average age of car	6 years	data coll./analysis				
Average fuel economy (performance)						
Average vehicle mpg, County fleet	11 mpg	↑				
Average vehicle mpg, Sheriff fleet	13 mpg	↑				

Employee Travel

County Business Travel

No Travel	40%	data coll./analysis				
Personal Vehicle	26%	data coll./analysis				
Both County and Personal Vehicle	21%	data coll./analysis				
County Vehicle	11%	data coll./analysis				
Non-Vehicle	2%	data coll./analysis				

Employee Commute

1) Mode of Commute

Drive alone, %	91%	↓				
Multiple modes, %	4%	↑				
Carpool, %	3%	↑				
Transit, %	1%	↑				
Bicycle, %	1%	↑				

2) Weekly Commute distance (% of employees)

10 miles or less	11%	data coll./analysis				
11-25 miles	14%	data coll./analysis				
26-50 miles	15%	data coll./analysis				
51-100 miles	25%	data coll./analysis				
101-200 miles	24%	data coll./analysis				
201-300 miles	9%	data coll./analysis				
301+ miles	2%	data coll./analysis				

3) Average telecommute days per month

Never	85%	↓				
1 day	7%	↑				
2 days	3%	↑				
3 or more days	5%	↑				



Grounds and Roads

Snow Removal

Enhanced pre-treated salt (tons)	11,000	data coll./analysis				
Potassium acetate (gallons)	300	data coll./analysis				
Liquid salt brine (gallons)	27,000	data coll./analysis				

Road Lighting

1) Traffic lights

Cost	\$20,700	data coll./analysis				
kWh	not available	data coll./analysis				

2) Street lights

Cost	\$57,840	data coll./analysis				
kWh	983,280 (est)	data coll./analysis				

Pesticides/Herbicides

Pesticides/herbicides on San Francisco Reduced Risk List	4					
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Kane County Sustainability Audit

Performance Metrics

Baseline	Directional Indicator	2013	2014	2015	2016	2017
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Facilities

Energy Consumption

Total kBtu	97,890,805	<small>data coll/analysis</small>				
Total energy costs	\$934,153	<small>data coll/analysis</small>				
Average energy use intensity	97.5	↓				

Water Consumption

Total kGal	23,822.52	<small>data coll/analysis</small>				
Total water costs	\$138,483	<small>data coll/analysis</small>				

Waste

Total volume solid waste (yards)	91.5 (incomplete)	<small>data coll/analysis</small>				
Total volume recycled (yards)	55 (incomplete)	↑				
Total percent recycling	60.1%	↑				

E-Waste

Total pounds sold	4171.42	↑				
Total pounds recycled	1278.84	↑				
Total diverted pounds	5450.26	↑				



Purchasing

Recycled and FSC/SFI content

Recycled content, % of office paper	5.28%	↑				
FSC/SFI-certified content, % of office paper	2.35%	↑				

Paper Expenditures

Total office paper, cost	\$73,175	<small>data coll/analysis</small>				
Office paper with recycled content, reams	not available	↑				
Office paper with recycled content, cost	\$3,864	↑				
Certified office paper, reams	not available	↑				
Certified office paper, cost	\$1,716	↑				
Janitorial Paper, volume	not available	<small>data coll/analysis</small>				
Janitorial Paper, cost	\$79,227	<small>data coll/analysis</small>				

Landscaping Chemicals and Waste

Cleaning and Maintenance

Total number of chemicals purchased	not available	<small>data coll/analysis</small>				
Total number of "certified" cleaning products used	5	↑				
Percent of "certified" cleaning products used	not available	↑				

Paint

1) All Paints

Total variety of paints used	44	<small>data coll/analysis</small>				
Total quantity of paints used (gallons)	not available	<small>data coll/analysis</small>				

2) Low/No VOC Paints

Number of low/no VOC paints used, variety selected	7	↑				
Percent of low/no VOC paints used, variety selected	15.9%	↑				
Total quantity of low/no VOC paints used (gallons)	not available	↑				
Percent of low/no VOC paints used, quantity	not available	↑				



Office Habits

Work From Home Policy

1 = none/no progress 2= in progress 3= adopted	1	↑				
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Green Purchasing Policy

1 = none/no progress 2= in progress 3= adopted	1	↑				
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Data Collection

1) Purchasing agreements

1 = none/no progress 2= in progress 3= adopted	1	↑				
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2) Identified staff to track all datasets

1 = none/no progress 2= in progress 3= adopted	2	↑				
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Green Team

1 = none/no progress 2= in progress 3= adopted	1	↑				
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