



**DANE COUNTY SUSTAINABILITY SUCCESSES**

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DANE COUNTY LEAGUE OF WOMEN VOTERS  
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**SUSTAINABILITY & EQUITY**

**"Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs."**  
(Brundtland Commission, 1987)

**"Enough, for all, forever"**  
(African delegate to Johannesburg Rio + 10 Summit, 2002)

**"The possibility that human and other forms of life on earth will flourish forever."**  
(John Ehrenfeld, Professor Emeritus, MIT)

**"Living securely and justly within the limits of one single, vulnerable Earth."**  
(Donald Worster, author, *The Wealth of Nature*)



**"A sustainable society is one that can persist over generations, one that is far-seeing enough, flexible enough and wise enough not to undermine either its physical or its social systems of support."**

- Donella Meadows, *Beyond the Limits*, 1992.

**DANE COUNTY'S GOAL**

*Become more environmentally, socially, and economically sustainable in our county government's operations, management, and policymaking.*

**DANE COUNTY'S SUSTAINABILITY PRINCIPLES**

- Reduce and eventually eliminate Dane County government's contribution to fossil fuel dependence and to wasteful use of scarce metals and minerals;
- Reduce and eventually eliminate Dane County government's contribution to dependence upon persistent chemicals and wasteful use of synthetic substances;
- Reduce and eventually eliminate Dane County government's contribution to encroachment upon nature and harm to life-sustaining ecosystems (e.g., land, water, wildlife, forest, soil, ecosystems); and
- Reduce and eventually eliminate Dane County government's contribution to conditions that undermine people's ability to meet their basic human needs.

Adopted by the County Board in October 2012, Dane County Resolution 109 2012-2013

**WHAT WE'VE DONE**

**Hired Sustainability and Program Evaluation Coordinator**

- In 2012 the County Board of Supervisors created a position in the Office of the County Board and hired a Sustainability and Program Evaluation Coordinator to lead and manage various efforts to **improve the sustainability of the county's operations, management, and policymaking.**
- The Sustainability Coordinator serves as a **resource** to all County Board supervisors on sustainability-related policy development, program review, and budgetary analysis with a sustainability lens. She also works extensively with all county departments and offices to **advance and facilitate initiatives and projects that improve the sustainability of county operations and management.**
- Program Evaluation Role: Diverse topics but often also **directly connected** to implementing our sustainability principles (e.g., Racial Equity Analysis, Land and Water Resources Department Assessment, Contracting Equity, etc.)

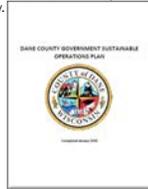
## DANE COUNTY'S SUSTAINABLE OPERATIONS PLAN

### Sustainable Operations Plan for Dane County Government Operations

First ever such plan for Dane County government.

Addresses eight key county operational categories. Each category represents an operational aspect of county government that spans all departments and divisions, and for which numerous staff share some level of responsibility.

1. Climate Change Mitigation & Adaptation
2. Transportation / Vehicle Fleet
3. Water
4. Waste
5. County Buildings & Facilities
6. Purchasing
7. Education and Outreach
8. Employee Experience

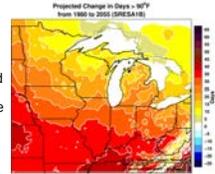


## DANE COUNTY'S SUSTAINABLE OPERATIONS PLAN

### FOCUS: CLIMATE CHANGE MITIGATION AND ADAPTATION

#### GOAL:

Dane County is committed to reducing greenhouse gas emissions generated by all county operations and facilities, and to planning for and implementing climate adaptation measures to build resilience in the face of current and future impacts of global change on government operations and our community.



#### Objective:

- 1) Dane County will work toward avoiding and reducing greenhouse gas emissions in its operations and facilities.
- 2) Dane County will work toward achieving climate neutrality in its operations and facilities by offsetting emissions that remain after emission reduction efforts have been maximized.
- 3) Dane County will plan for and implement climate adaptation measures across county operations and facilities to become more resilient to the impacts of climate change.

## DANE COUNTY'S SUSTAINABLE OPERATIONS PLAN

### FOCUS: CLIMATE CHANGE MITIGATION AND ADAPTATION (continued)

**Strategy:** Update the county's 2007 baseline GHG emissions inventory for county operations in order to set emission reduction targets and measure outcomes.

- a. **Timeline:** **Year 1:** Identify parties and funding to perform inventory, **Year 2:** and ongoing: Perform inventory
- b. **Parties Responsible for Implementation:** Primary: Department of Administration; Public Works; Sustainability Coordinator
- c. **Priority:** High.



#### Related Departmental Sustainable Operations Action Plans (Appendix A)

- County Board Office: Create Guidelines for Office Use of Printer Devices
- DOA: Paperless Recruiting
- Planning and Development: Promote Alternative Modes of Employee Commuting

## WHAT WE'VE DONE

### SMART Fund

- In 2012 the County Board of Supervisors created the SMART Fund (Sustainable Management and Renewable Technologies) to assist departments with capital projects that improve efficiency and cut costs.
- The SMART Fund started with a \$100,000 cap but now invests **up to \$2 million annually** in qualifying departmental capital projects that improve the county's sustainability.
- **Benefits of this fund:**
  - Alignment of departments and staff toward a **common understanding of sustainability**
  - **Clarity and consistency** in assessing and organizing actions and programs for sustainable government operations
  - **Enhanced policies and programs** incorporating a sustainability perspective
  - Enhanced reputation as a proactive contributor to a **more sustainable community**
  - **Reduced operating costs**

## WHAT WE'VE DONE

### SMART Fund

- **Examples of projects funded:**
  - Lighting upgrades – all types of systems changed to LED systems
  - Replacement of laundry machines in juvenile detention facilities
  - Solar PV pathway lighting at the Henry Vilas Zoo
  - Office desktop scanners for the Veterans Services Office
  - Renovation of facilities to be code compliant for CNG vehicle storage
  - Insulation of highway maintenance facility
  - Energy and water conservation upgrades at county park facilities



## WHAT WE'VE DONE

### SMART Fund

2012 through 2016 Round 3

- **Total Projects Funded : 54**
- **Total Funding Awarded to projects: Over \$3.1 million**
- **Smallest award: \$644** (refrigerator replacement)
- **Largest award: \$460,000** (AEC parking lot LED lighting)
- **Estimated operational cost savings from 2012- 2016 projects\*\*:** approx. **\$637,900 annually** \*\* Note: not all projects estimated cost savings
- Operational savings costs are based on energy and other resource reductions, as well as maintenance cost reductions, calculated for some projects. This is a minimum operational cost savings estimate as not all projects provided initial cost savings estimates up front.



**WHAT WE'VE DONE**



**SMART Fund**

- Greenhouse Gas emissions reductions: **2,850 metric tons of CO2 equivalent annually**
  - Estimated emissions avoided by implementation of just a portion of the 2012-2016 projects.
- This is the equivalent of:*
- Taking 602 passenger vehicles off the road annually
  - Reducing passenger vehicles miles driven by 6.8 million miles annually
  - Not burning 320,693 gallons of gasoline annually
  - Not burning 3 million pounds of coal annually
  - The average annual energy use of 300 homes

(Source: the EPA emissions calculator <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>.)

**WISCONSIN FOCUS ON ENERGY REBATES\$\$\$**

Between 2012 and 2015

- 25 FOE rebate-eligible projects
- Includes 13 SMART Fund projects
- 1,850,246 kWh electricity saved
- 296,138 therms of natural gas saved



- Total rebates to Dane County (of 21 completed projects): **\$166,655** (Additional estimated **\$88,168** of rebates slated)

**WHAT WE'VE DONE**

**Building Commissioning / Retrocommissioning**

- **Commissioning:** When a building is initially commissioned it undergoes an intensive systematic quality assurance process that begins during design and continues through construction, occupancy, and operations. Commissioning ensures that the new building operates initially as the owner intended and that building staff are prepared to operate and maintain its systems and equipment.
- **Retrocommissioning** is the application of the commissioning process to existing buildings. Using a whole-building systems approach, retrocommissioning seeks to identify operational improvements that will increase occupant comfort and save energy.

**WHAT WE'VE DONE**

**Building Commissioning / Retrocommissioning**

- 2010**
  - Estimated **savings of \$193,000 annually** (or a 10.8% reduction in utility costs) by implementing all low-cost and priority capital projects identified by the commissioning agent
  - Approx. Cost to implement: **\$500,000**
  - Estimated **Payback: 2.6 years**
- 2014**
  - All building projects over **\$1 million** (new or remodel) now require retrocommissioning, or commissioning to reduce county operating costs through energy conservation and efficiency, and optimization of building system performance.
  - **5-year contract** with a commissioning agent
  - Working on: New Medical Examiner's facility, Veterans' Memorial Coliseum, and Alliant Energy Center upgrades
  - Will realize **significant operational savings** from energy and mechanicals design and retrofits



**2016 New Medical Examiner Facility**

**LANDFILL GAS TO ELECTRICITY**

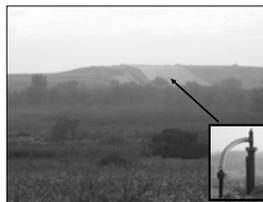
Converted county landfill gas to electricity, generating \$3.5 million in electricity annually, enough to meet the electricity needs of 4,000 homes in the county.

**Rodefeld - History/Timeline**

- Active Landfill opened in 1985
- April 1996 - installed 31 gas wells
- Additional 16 wells installed 2000-2012

**Decomposing waste produces landfill gas**

- Landfill Gas Components
  - ✓ Methane - 50-55%
  - ✓ Carbon Dioxide - 40-45%
  - ✓ Nitrogen - 5%
  - ✓ Oxygen - 0.5%
  - ✓ Trace Organics - 0.5%



**WHAT WE'VE DONE**

**Fleet Conversion to Compressed Natural Gas (CNG)**



- The renewable CNG the county generates from decaying garbage at its Rodefeld landfill costs the county the gasoline equivalent of \$1.25 a gallon.
- Continuing investments in compressed natural gas (CNG) fleet vehicles, offsetting the use of approximately 20,000 gallons of fossil-fuel gasoline and saving county taxpayers roughly \$40,000 in 2013- the first year of implementation;
- Using the first-in-Wisconsin CNG snowplow
  - The average county plow consumes 2,400 gallons of diesel fuel per year. With diesel prices topping off at nearly \$4 a gallon locally, that amounts to over \$6,000 in fuel savings per CNG plow per year.



**Dane County Launches New and Improved Waste Reduction and Recycling Program in County Facilities**

**WASTE REDUCTION AND RECYCLING PROGRAM**

In accordance with the Dane County Sustainable Operations Plan, a Baseline Waste Assessment was Conducted in July 2015.

**General Observations:**

- Trash and recycling configurations vary between facilities and within facilities
- Little to no signage on bins indicating how materials should be sorted
- Expansion of allowable materials and mixing of recyclable materials since recycling in county facilities was established
- Potential for cost-saving opportunities and increasing workplace efficiency
- WE CAN DO BETTER
  - Source: County Facility Recycling Improvements for 2016 Budget Memorandum (Rupiper and MacKinnon, July 2015)

**A comprehensive approach to improved waste reduction and recycling opportunities throughout Dane County's facilities**

**WASTE REDUCTION AND RECYCLING PROGRAM BENEFITS**

- **Protect our Resources:**
  - According to the U.S. EPA, about 65% of the total waste stream from a typical office building is recyclable
- **Reduce our Carbon Footprint:**
  - According to the EPA's Waste Reduction Model, increasing recycling at county facilities serviced by Facilities Management by 10% would result in an annual greenhouse gas emissions reduction of 153 metric tons of CO<sub>2</sub> equivalent
- **Reduce our Costs:**
  - Increased recycling can reduce our facility waste disposal fees and also help to increase the useful life of the Dane County Landfill
- **Improve our Customer Service:**
  - Offering more convenient and clearly-defined opportunities for recycling demonstrates Dane County's commitment to environmental protection, sustainability, and fiscal responsibility

**FACILITY-WIDE CONSISTENCY & COMMUNICATION**  
**GREEN = MIXED RECYCLING**  
**BLACK = LANDFILL**



2-Bin Office Recycling Stations

Public Lobby Stations

Outdoor Entry Stations

**COMMITMENT TO SUSTAINABILITY**

Dane County Facilities Management maintains a commitment to environmental protection through the purchase of sustainable products:

- All new recycling stations will be lined with guaranteed 100% post-consumer and post-industrial recycled can liners consisting of used silage wrap and irrigation line material





**WHAT WE'RE DOING – ONGOING WORK**

- Ongoing retrocommissioning /commissioning of new building projects and remodels
- Ongoing implementation of Sustainable Operations Plan strategies
- Ongoing SMART Fund projects
- Ongoing renewable energy and energy conservation upgrades at county facilities
- Development of a Dane County Air Emissions Inventory
- Ongoing development of racial equity and social justice strategies and actions across Dane County government
- Ongoing work by County Executive of Office of Energy and Climate Change and Climate Change Council

**QUESTIONS?**

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