



# Ozaukee County Green Initiatives: A Summary of County Government Projects and Practices

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# Introduction

At its October 1, 2013 meeting, the Natural Resources Committee of the Ozaukee County Board of Supervisors expressed an interest in exploring long-range green initiative strategies.

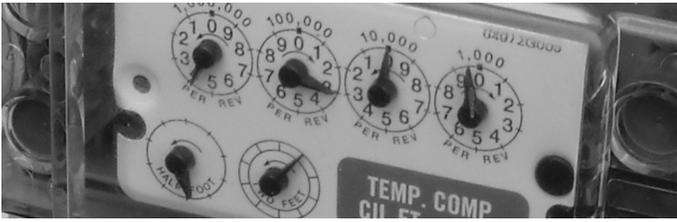
This document serves to provide a brief overview of current and recent green initiative projects and practices throughout Ozaukee County government facilities and operations. It is not meant to be a comprehensive account of all projects and activities, but instead acts a reference and starting point for future discussions and actions.

County green initiatives have been grouped into the following categories:

- Energy Efficiency
- Water Conservation
- Waste Management
- Sustainable Design

Many individuals and County Departments were instrumental in providing information for this report. They include, but are not limited to, Finance, Highway, Land and Water Management, Lasata Senior Living Campus, Maintenance, Planning and Parks, Technology Resources, Transit and County Administration.

# Energy Efficiency



## Overview

Energy efficiency can be one of the most effective ways to reduce energy costs. Heating, ventilation, and air conditioning (HVAC) systems and lighting account for a significant portion of total energy consumption in US commercial buildings.

Over the last few years, several county facilities have undergone building retrofits and lighting upgrades to improve energy efficiency. Many of these retrofits were funded, in part, through a Wisconsin Energy Efficiency and Conservation Block Grant award and/or Focus on Energy incentives.



## Heating, Ventilation & Air Conditioning

Significant retrofits to the HVAC systems at both the Justice Center and Administration Building have occurred within the last five years.

At the Justice Center, boiler system upgrades, HVAC control upgrades, the replacement of A/C chillers, and the addition of a heat recovery unit are some of the major energy efficiency upgrades that have been performed in recent years.

At the Administration Building, the facility's chiller, air handling units, steam boiler, and chilled water and cooling tower pumps have been replaced with more efficient equipment. In addition, variable frequency drives have been installed to further reduce energy consumption.

Improvements have been made on the Lasata Senior Living Campus as well. At Lasata Heights, two hot water heaters have been replaced with more efficient units and two energy saving boilers have been installed.

In addition to large scale HVAC system improvements, other measures have been taken to reduce energy use associated with heating, ventilation, and air conditioning. For example, at Lasata Heights ceiling fans have been installed in the main dining room and hallway air conditioning units have been equipped with timers to reduce air conditioning usage. Also, at the Hawthorne Hills and Mee-Kwon golf courses, programmable thermostats have been installed in the shops.



## Lighting

Lighting upgrades have occurred at many county facilities in recent years. The following are the most common lighting changes:

- Incandescent light bulbs have been replaced with compact fluorescent lamps (CFLs).
- T12 fluorescent lighting and ballasts have been replaced with T8 fluorescent lighting. Reflectors have been installed where applicable for improved energy efficiency.
- LED exit lights are widely used at county facilities and traffic signal lights have been replaced with LED displays.
- Occupancy sensors and timers are used at some county facilities to reduce lighting costs.

In addition to transitioning to more energy efficient light bulbs and displays, the Lasata Senior Living Campus utilizes Solatubes in the lobby of Lasata Heights to maximize daylight as a lighting source.



## Building Envelope

A building's windows, doors, walls, roof, and foundation, collectively referred to as the building envelope, can also play a significant role in energy use.

Energy efficient thermal windows have been installed at several county facilities including the Administration Building and Lasata Care Center.

At the Lasata Senior Living Campus, several measures have been taken to reduce heat flow through the building envelope.

At Lasata Heights, insulation and flashing around the building foundation was recently replaced. The building siding was also replaced with cement board and Tyvek sheathing. At Lasata Care Center, 30% of the roof was replaced with energy efficient insulation and material.

The Administration Building also has a white roof which reduces building heat gain in warmer months.

# Water Conservation



## Stormwater Management

### *Rain Garden*

Ozaukee County has a rain garden demonstration site located on the west side of the Administration Building. The rain garden is designed to control stormwater runoff with native plants that tolerate wet conditions.

The rain garden requires no fertilizing, watering, or spraying and only minimal mulching and weeding and helps to decrease erosion, filter out pollutants, and recharge groundwater.

### *Highway Construction Projects*

The Highway Department incorporates best management practices for erosion control and stormwater management on its construction projects.

## Water Conservation

### *Lasata Senior Living Campus*

The Lasata Senior Living Campus has taken several steps to conserve water at its facilities. For example, public urinals at Lasata Care Center and Lasata Crossings have been converted to automatic flush units to save water.

In addition, at Lasata Heights, water faucets in the lobby bathrooms have been replaced with automatic units and washing machines have been replaced with Energy Star models.

### *Justice Center*

The installation of new HVAC equipment in the Radio and Telephone rooms of the Justice Center has significantly reduced water consumption at the facility. The improvements resulted in a reduction of hundreds of thousands of gallons of water and thousands of dollars of cost savings for each two-month water billing cycle.

## Pollution Prevention

Unused medication from the Lasata Care Center that is not returned to the manufacturer is crushed and sent to a landfill to minimize the impact of trace levels of drug residues in surface water.

# Waste Management



## Waste Reduction

The Lasata Senior Living Campus has implemented multiple strategies to reduce waste at its facilities.

### *Food Waste*

Tenants at Lasata Heights bring their own “take home” containers to the dining room to take home leftovers, reducing the quantity of food waste at the facility.

### *Mercury-Containing Products*

Mercury thermometers and mercury-containing blood pressure cuffs are no longer in use at the Lasata Care Center which reduces the risks and waste disposal requirements associated with mercury-containing products.

## Reuse of Waste Materials

The Highway Department incorporates the reuse of a variety of materials in its operations, including the reuse of used oil, asphalt pavement millings, and slag.

### *Used Oil*

The Highway Department uses drain oil and a waste oil burner to heat the vehicle garage at its Waubeka shop. In addition, the department provides drain oil tanks for the public to use at its Port Washington and Waubeka shops.

### *Asphalt & Slag*

The Highway Department blends asphalt pavement millings with gravel to reuse as road gravel.

The department also uses boiler slag from Charter Steel and the Manitowoc Power Plant to mix with gravel to use as shoulder gravel. Slag is also used in seal coating of road pavements to extend pavement life. Large slag is used for sub base stabilization in construction projects.

### *Landscaping Materials*

All landscape materials including flowers, shrubs, and other materials at the Lasata Senior Living Campus are composted or chipped and used as mulch.

## Recycling

Paper, cardboard, glass, plastic, and aluminum are recycled at county facilities including the Administration Center, Justice Center, and Lasata Senior Living Campus. Some light bulbs are recycled as well.

### *E-waste*

Printer cartridges and electronic waste such as computers and printers are recycled through the County’s Technology Resource Department.

### *Scrap Metal*

The Highway Department collects scrap metals, such as old culverts, I-Beams, and Flex Beams for recycling.



# Sustainable Design



## Transit Services Building

The Ozaukee County Transit Services Building, constructed in 2012, includes a variety of energy efficiency and stormwater management components that were incorporated into the facility's design.

For example, the building's highly reflective white roof reduces building heat gain in warmer months. Native and non-invasive landscaping surrounding the building requires little to no irrigation or maintenance. In addition, the property has a bio-retention area for stormwater management.

## Former Building Demolition

During the demolition of the former Modern Equipment building, an effort was made to reuse and recycle building materials from the former structure. Overall, 285 tons of steel were recycled, 8,100 tons of concrete were crushed and used on site, and only six percent of building materials from the former facility were sent to a landfill for disposal.



## Transit Administration Offices

The Transit Administration Offices feature solar tubular day-lighting in the ceiling and large windows to maximize natural light. Automatic light dimmers and occupancy sensors reduce energy usage.

Energy efficient gas furnace, air conditioning, and ventilation equipment reduce heating and cooling expenses, while low flow faucets in the facility's bathrooms reduce water consumption.

## Taxi Storage Area & Vehicle Wash Bay

The 15,500 sq. ft. structure includes clerestory windows to utilize natural light and energy efficient T5 lighting operates on motion sensors. Overhead infrared gas heaters heat objects, not air, and use 90% of their fuel for heat. In addition, variable exhaust and make-up air system senses carbon monoxide and runs at high speed to ventilate.



## Interurban Trail Pocket Park

The pocket park utilizes permeable brick pavers to allow for stormwater drainage and also includes the adaptive reuse of the former building's crane structure.

