



2014

DANE COUNTY REGIONAL AIRPORT

Sustainability Plan Highlights

Dane County Regional Airport recognizes the importance of sustainability – and is committed to actively engaging in organizational EcoMentality® – economically, environmentally and socially.





DANE COUNTY
REGIONAL AIRPORT

Dane County
Regional Airport

Letter from the Airport Director



Dane County views environmental stewardship and social responsibility as an integral part of the operation of Dane County Regional Airport (DCRA). We coined the term “EcoMentality”[®] to reflect our commitment to environmental stewardship. We are proud of the many achievements we have made to-date and continually explore opportunities to improve the Airport’s performance. Some of our recent accomplishments include:

- Recent opening of the energy efficient 58,800-square-foot Airfield Maintenance Building, with a rooftop solar array that can generate up to 135,000 kilowatt-hours per year;
- The re-establishment of the Cherokee Marsh through the realignment of the Canadian Pacific railroad, which developed natural erosion control features and protected key water runoffs, thus restoring the marsh to a natural and self-sustaining wetland; and,
- Implementation of an advanced glycol recovery system (used for aircraft deicing) that collects storm water runoff and samples, tests, stores, and discharges only clean storm water into the nearby watershed. Water that does not meet minimum sanitary requirements is diverted to treatment facilities before the water is discharged into the watershed.

In 2012, we launched a plan to take its commitment to sustainability to another level by developing a mission statement, goals, and initiatives to enhance the sustainability of DCRA. This Report highlights the actions taken to-date and outlines future plans to enhance the Airport’s long-term economic viability; natural resource conservation; and the well-being of DCRA’s surrounding communities, employees, and passengers.

The Airport values our role in the community, including the stewardship of our natural resources. This plan advances our commitment to sustainability and provides us with a process to enhance the Airport and community for years to come. We hope you join us by taking advantage of the Airport’s efforts and following the principles of sustainability in your own actions.

Respectfully,

Bradley Livingston, AAE
Airport Director
Dane County Regional Airport



What is Sustainability?

Sustainability has redefined the values and criteria for measuring organizational success by using a “triple bottom line” approach that considers economic, environmental and social well-being. Applying this approach to decision-making is a practical way to optimize economic, environmental and social capital. DCRA is taking a broad view of sustainability that builds on the concept of the triple bottom line and considers airport-specific context. Consistent with the Airports Council International - North America’s (ACI-NA) definition of Airport Sustainability,¹ DCRA is focused on a holistic approach to managing its airport to ensure Economic viability, Operational efficiency, natural resource conservation, and Social responsibility (EONS).

A key principle of sustainability is recognizing that addressing one concern does not necessarily come at the expense of another. Optimally, evaluating a project or activity based on environmental and social concerns will spur innovation that ultimately reduces costs over the life of the project.

EcoMentality® is a term coined by DCRA that reflects the County's commitment to environmental stewardship at the Airport, which in turn supports Dane County's sustainability efforts.

Airport sustainability as part of a business strategy has both immediate and long-term benefits that can be measured, and when persistently managed, presents rewards. Some benefits of sustainability initiatives that have been demonstrated at airports across the world include:

- Improved passenger experience
- Better use of assets
- Reduced development and/or operations and maintenance costs
- Reduced environmental footprints
- Facilitation of environmental approvals/permitting
- Improved relationships within the community
- Contribution to regional economy
- Creation of an engaged and enriched place to work
- Creation of new technologies through increased demand and investment in technologies that facilitate sustainable solutions

The Airport is committed to enhancing air and water quality within its control, reducing the impact of noise, and preserving natural resources while maximizing its economic benefits to the community.

DCRA has joined other leading airports by ascribing to the EONS definition of sustainability that considers not only the “triple bottom line” but also operational efficiency – an integral element to airports’ viability



¹ Airport Sustainability: A Holistic Approach to Effective Airport Management; accessed July 17, 2013: <http://www.aci-na.org/static/entransit/Sustainability%20White%20Paper.pdf>

Airport Context

DCRA is committed to provide efficient access to air transportation in south-central Wisconsin for residents, businesses, government and educational institutions. To accommodate the region's dynamic population, the Airport's passenger terminal was expanded in 2006, with a design inspired by Frank Lloyd Wright prairie architecture style. Both the Wisconsin Army National Guard and Wisconsin Air National Guard operate military aviation facilities at DCRA.

Airport Service Area

The Airport primarily serves residents and businesses located within the Madison Metropolitan Statistical Area (MSA), which includes Dane, Iowa, and Columbia Counties and has a combined population of approximately 570,000.² The Madison MSA was the fastest growing in the state between 2000 and 2010. As the capital of Wisconsin, Madison is home to state government and the University of Wisconsin (UW). Some of the major businesses in the area that utilize DCRA include UW-Health, American Family Insurance Company and Epic Systems Corporation.



*Madison Municipal Airport
Terminal circa 1960*



Timeline History of DCRA

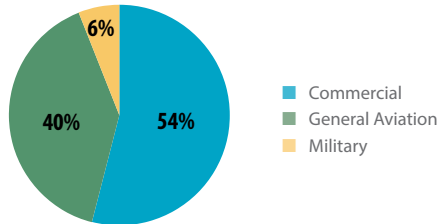
- 1920s** The City of Madison purchases land that will become the home of DCRA.
- 1930s** City of Madison opens its first passenger airport, Madison Municipal Airport.
- 1940s** Operation of the Airport was transferred to the U.S. Army Air Corps and renamed Truax Field. It was later returned to the City of Madison.
- 1950s** Commercial airlines began serving Madison.
- 1960s** A new terminal and taxiway system was designed and built.
- 1970s** The Madison Municipal Airport was transferred to the County and became Dane County Regional Airport
- 1980s** The Airport expanded its terminal from 32,000 to 90,000 square feet.
- 1990s** A commuter gate was added to the terminal and a multi-level parking structure was built.
- 2000s** A terminal expansion project more than doubled the terminal size to 274,000 square feet and Wisconsin Aviation completed its general aviation terminal reconstruction.

² Metropolitan Statistical Areas of Wisconsin, Wisconsin Department of Revenue, July 2012.

Airport Activity Levels

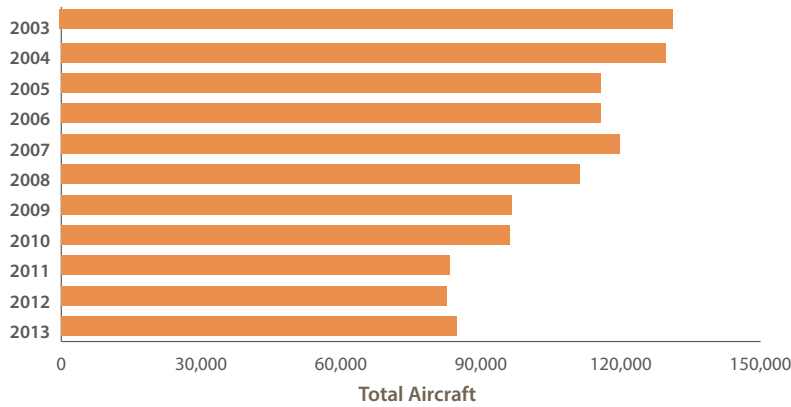
DCRA accommodates commercial aviation, general aviation (GA), as well as military operations (Wisconsin Air National Guard and the Wisconsin Army National Guard). The number of passengers using the airport has been steadily increasing since 2008.

DCRA Operations by Type [2013]



Of the 84,860 operations at DCRA in 2013, 40% were by commercial aircraft. Four commercial airlines currently service the Airport: American Eagle, Delta Airlines, Frontier Airlines, and United Airlines

Total Aircraft Operations [2003-2013]

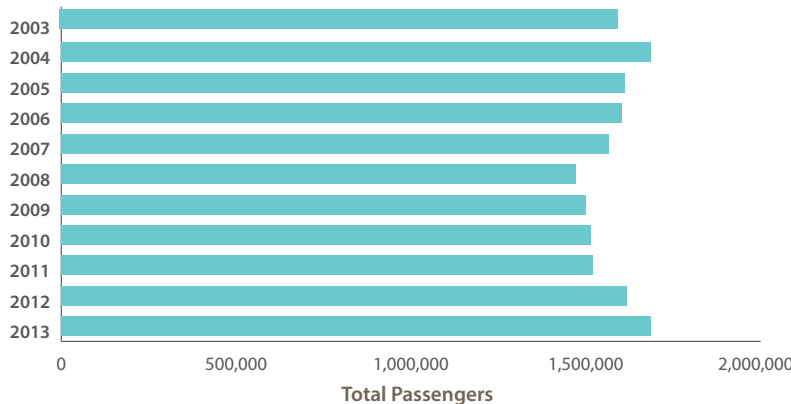


Aircraft Operations

DCRA is host to commercial, general aviation, and military aircraft operations. Four passenger service airlines currently serve the Airport: American Airlines, Delta, Frontier Airlines, and United Express. In 2013, commercial aircraft operations (passenger airlines and FedEx cargo operations) accounted for 40% of all operations at DCRA. General Aviation (GA) aircraft operations represented more than half (54%) of all operations, while military aircraft operations accounted for 6% of all operations.

Aircraft operations at DCRA have been on the decline since 2003, which is consistent with a nationwide trend: of commercial airlines accommodating more passengers on fewer, larger aircraft, and the number of general aviation flights reducing due to the economic recession.

Total Passengers [2003-2013]



Passengers

Airport passenger levels have been steadily on the incline since 2008, reaching a record level of 1,685,919 in 2013. The strong local economy, enhanced air service options, and larger aircraft, are the primary reasons for the increase in passenger traffic since 2008.

Markets Served

The four passenger service airlines at DCRA offer direct flights to 12 cities in the United States. Salt Lake City (newest market served in 2013) and Orlando (seasonal service) are the farthest destinations from Madison. Chicago and Denver are served by two airlines, and the remainder of the markets have one airline serving each city. Chicago, Detroit, and Minneapolis are the markets with the most frequent daily flights.

Cities Served by DCRA



Terminal Facilities

DCRA's most recent terminal expansion was completed in 2006 and now totals 274,000 square feet. The terminal was designed to replicate the Frank Lloyd Wright-inspired, prairie style architecture, with accents of cherry wood, polished granite and spun aluminum. In addition, the terminal has a number of sustainable features incorporated into its design:

- Automated systems that control and optimize the energy performance of building functions including heating and cooling, electricity, lighting, and other operational systems.
- An ice storage system to cool airport facilities rather than relying solely on traditional chiller systems. During cooler evening hours and off-peak electrical load times, ice is built and stored for daytime cooling, reducing the need for conventional HVAC systems.
- All restrooms have low-flow fixtures to reduce water consumption.
- Cleaning products are organic, citrus based, and contain less toxic solvents
- High-efficiency, demand-based boiler system
- Electronic equipment (e.g., computers) is set to switch to standby power modes after inactivity.

- Terminal roof is white, which reduces heat island effect.
- New sorting stations located in the terminal and provided to tenants to encourage recycling.
- A Greeters Lounge
- Family and nursing mother's lounges

DCRA also provides services and facilities for community use. Some of the facilities include a business center, the Robert B. Skuldt Conference room, and additional conference / training rooms which are all available for public use.



The Wisconsin Air National Guard's recently constructed state-of-the-art Aircraft Rescue and Firefighting building will result in enhanced public safety and wellbeing for emergency responders.

Wisconsin Air National Guard Aircraft Rescue and Fire Fighting (ARFF) Facility

A renovation to the ARFF facility in 2010 increased the station from 9,300 to 23,500 square feet. The renovation provides space for state-of-the-art vehicles and equipment and for better training and quality-of-life facilities for emergency responders.

- The Wisconsin Air National Guard facility provides FAA-approved ARFF services for DCRA.
- The facility operates with 31 full-time personnel working on three shifts (10 personnel per shift, including 4 hazardous materials technicians per shift).
- The Wisconsin Air National Guard ARFF facility has a mutual aid agreement with the County and City (Madison) for emergency response.
- The facility houses a training classroom that is also used by the County for classes such as CPR and fire extinguisher training.
- The ARFF facility houses one of five Emergency Management Disaster Support Trailers in the County.
- The majority of responses by the facility are medical-related and ARFF personnel are responsible for checking all defibrillator equipment in DCRA's passenger terminal.

The DCRA terminal is a work of art, inspired by the late Frank Lloyd Wright, who was born and raised in Madison



DCRA Sustainability Planning Process

DCRA undertook a rigorous planning process to develop an actionable plan, which included consultations with airport stakeholders (such as airlines and tenants) and County leaders at key points in the process.

The planning process for this sustainability plan consisted of two phases:

- Phase 1 focused on establishing the baseline and opportunities for improvement, as well as setting an overall framework for the sustainability plan
- Phase 2 focused on implementation and establishing a system to ensure continual improvement through monitoring and reporting. The reporting process is structured to revisit goals and objectives at each reporting interval, and re-evaluating performance through ongoing tracking.

DCRA Sustainability Study Planning Process



Coordination with Dane County

Dane County has an established sustainability program and continues to enhance its efforts to be a more sustainable government organization. In 2007, the County adopted Resolution 210, *Dane County Researches Sustainable Practices in its Operations, Management and Policymaking* and in 2008 prepared the *Dane County Sustainable Practices Staff Team Sustainability Training & Inventory*.³

The project team for the DCRA Sustainability Plan met with the County's Sustainability Coordinator during the initial stages of the project to gather information about the County's efforts and to inform the County of the Airport's planning approach. Two additional meetings were held with the County's Cross-departmental Sustainability Working Group. As part of this sustainability planning process, the Airport developed sustainability goals and objectives that support Dane County's Sustainability Policies, from Resolution 103, 12-13, which include:

- 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.

³ Dane County Sustainable Practices Staff Team Sustainability Training & Inventory, August 11, 2008, retrieved December 30, 2013 from http://danedocs.countyofdane.com/webdocs/pdf/coboard/Training_Inventory_Report.pdf



Sustainability at DCRA

At the onset of the sustainability planning process, DCRA established a sustainability mission to guide the Airport's approach to sustainability. This Sustainability Mission Statement compliments the Airport's overall mission statement as well as Dane County's sustainability principles.

Dane County Regional Airport recognizes the importance of sustainability – and is committed to actively engaging in organizational EcoMentality® – economically, environmentally and socially. We will use resources in a responsible manner, establish achievable environmental goals, and focus on sustainability through ongoing improvements.

To focus DCRA's sustainability efforts, the Airport Sustainability Committee selected five areas around which the sustainability plan is focused:

- Energy
- Natural Resources
- Waste Management
- Economic Vitality
- Community

For each of these focus areas, an assessment of baseline conditions was conducted to understand how DCRA is currently performing. As detailed in the following sections, DCRA has already proactively implemented initiatives to enhance its performance and stewardship in each of these areas.

Airport Sustainability Committee

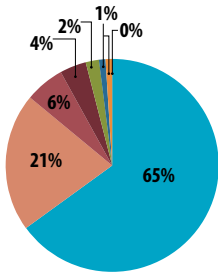
DCRA established a Sustainability Committee to help guide the development of this plan and to implement it. The Sustainability Committee consists of eight senior staff members, representing each major division within DCRA. The Committee met at regular intervals throughout the project and provided key insight to develop the sustainability mission statement, the goals and objectives, and identify sustainability initiatives for implementation.

DCRA Sustainability Goals & Objectives

The following sustainability goals and objectives were developed as part of the sustainability planning process. They serve to guide the identification and selection of sustainability initiatives for implementation, which are outlined at the end of this report. On an ongoing basis, DCRA will use these goals and objectives to prioritize new initiatives for implementation at the Airport.

	Goal	Objectives
Energy	DCRA will continue to leverage the latest technologies to maximize the Airport's energy efficiency.	<ul style="list-style-type: none"> ■ Manage energy use through increased building automation. ■ Enhance energy efficiency of terminal and facilities. ■ Focus on incorporating renewable energy when and where feasible.
Economic Vitality	Enhance the economic vitality of DCRA to ensure long-term financial stability and independence.	<ul style="list-style-type: none"> ■ Reduce cost of ownership and maximize revenue generated from passenger terminal and landside assets. ■ Position vacant aeronautical and non-aeronautical properties for appropriate development.
Social Responsibility	Promote a positive relationship between DCRA and the surrounding community.	<ul style="list-style-type: none"> ■ Review the EcoMentality report periodically ■ Educate the community about airport operations and its sustainability. ■ Track and address noise complaints and educate pilot community about surrounding noise sensitive areas.
Waste Management	DCRA will actively manage its materials use and solid waste generation.	<ul style="list-style-type: none"> ■ Reduce quantity of waste generated by the Airport and enhance recycling efforts. ■ Minimize hazardous materials use and hazardous waste generation wherever practicable. ■ Identify and implement best practices to reduce resource consumption and waste production at DCRA. ■ Increase rates of per passenger recycling in a quantifiable format to facilitate the educational process.
Natural Resources	DCRA will minimize preserve natural areas and continue to be an environmental steward.	<ul style="list-style-type: none"> ■ Continue storm water-related water quality enhancement practices and enhance wetland mitigation opportunities. ■ Maximize water conservation and minimize water use. ■ Reduce greenhouse gas (GHG) emissions within DCRA's scope and control. ■ Encourage upgrading the fleet mix with the use of alternative fuels, low emission vehicles, equipment, and supplies.

Annual Utility Cost by End Use



- Terminal
- Parking/Lights
- Maintenance
- Runway
- Industrial
- Miscellaneous
- Tenants (unoccupied)
- Landfill
- Gates

Source: 2012 Energy Audit, Sustainable Engineering Group.

Energy Performance

DCRA primarily uses electricity and natural gas to power its facilities. Major energy end uses at the time of an energy audit in 2012 included the passenger terminal (~247,000 square feet), the maintenance storage building⁴ (~35,384 square feet), and other uses such as street lighting, conditioned parking structures/ booths, areas of parking ramps, and airfield lighting. DCRA purchases its electricity and natural gas from Madison Gas & Electric (MGE). The electricity mix provided by MGE is 10 percent renewable power (a mix of wind and solar), as part of the Green Power Tomorrow program, resulting in over 949 tons offset carbon dioxide emissions each year.

The average annual cost breakdown by end use for DCRA equates to the energy consumed by each end use. The most substantial energy users are the terminal facility, parking/street lighting, and the maintenance building, which are responsible for 92% of airport energy costs. As a result, DCRA is focusing its energy efficiency improvements on these uses.

DCRA has implemented a number of energy efficiency and renewable energy projects that have resulted in significant energy savings and reduced dependency on fossil fuels. The following section showcases some of these initiatives.



Solar panels atop the Car Rental Canopy provide a source of renewable energy for the airport.



[TOP] Energy efficiency improvements the Wisconsin National Guard have made to their facilities at DCRA have resulted in significant energy savings. In addition, the Wisconsin National Guard uses 100% renewable energy to power its facilities.

[BOTTOM] DCRA has implemented a number of improvements to its terminal, which have resulted in significant reductions in energy use.

⁴ The energy audit was conducted using 2012 data, when this facility was still operational. This building has since been replaced with the Airport Maintenance Facility, which has many energy-efficient features and is a candidate for LEED certification.

INITIATIVE	DESCRIPTION	SUSTAINABILITY BENEFITS
Sourcing Renewable Electricity	DCRA purchases 10% green power through Madison Gas & Electric's Green Power Tomorrow program. The power purchased is approximately 71,000 kilowatt hours per month.	Supports the Green Power program and offsets nearly 3,500 metrics tons of GHG emissions annually.
Solar Electric (Photovoltaic) Systems	<p>The Airport has installed two photovoltaic (PV) systems at the airport: a 10 kilowatt (kW) solar electric (photovoltaic) system on the roof of the car rental canopy and a 100kW on the roof of the recently developed Airport Maintenance Facility. Together, these PV systems generate 147,000 kilowatt hours of electricity annually.</p> <p>DCRA will be seeking Leadership in Energy and Environmental Design (LEED®) certification for the Airport Maintenance Facility with the U.S. Green Building Council® in recognition of the Facility's sustainable design elements.</p>	Reduces the Airport's use of and reliance on non-renewable sources of electricity. Reduces approximately 101 metrics tons of Carbon Dioxide Equivalents from electricity use, which corresponds to the annual greenhouse gas (GHG) emissions savings of taking 21 passenger vehicles off the road.*
Airfield Improvements	<p>DCRA has implemented several airfield improvements to decrease energy usage:</p> <ul style="list-style-type: none"> • When the Air Traffic Control Tower at the Airport is closed, the airfield lighting is activated only on demand by pilots. • Ongoing installation of Light Emitting Diode (LED) airfield lighting fixtures. • Replaced the airport beacon and ramp lighting with high efficiency fixtures. 	Reduces the overall amount of purchased electricity used, which also reduces GHG emissions.
Terminal Improvements	DCRA has implemented many innovative terminal improvements to decrease energy usage, including building automation, HVAC cooling demand reduction, high efficiency climate control, and more. In addition, the terminal roof is an Energy Star rated white roof which reduces heat island effect.	Reduces the overall amount of purchased electricity used, which also reduces GHG emissions.
Military Facilities	<p>The Wisconsin Air National Guard has also implemented energy-saving initiatives:</p> <ul style="list-style-type: none"> • 100% renewable energy: 99% of the electricity used on base is purchased from wind power sources. The remaining 1% is generated by solar energy. • Occupancy sensors were installed in approximately 90 percent of offices, meeting areas, break rooms, and bathrooms. • Select outdoor street and building lights are shut down during low-use or night-time periods. 	100 % use of renewable energy minimizes the National Guard's reliance on non-renewable sources, and reduces GHG emissions by approximately 4,900 metric tons per year and coal use by approximately 3.3 million pounds.

* Based on the following U.S. statistics: a weighted average of combined fuel economy of 21.4 miles per gallon in 2011, and an average vehicle miles traveled of 11,318 miles per year. <http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>

Natural Resource Management

Natural resources are necessarily affected by an airport's operation – whether it be potable water use in washrooms, or greenhouse gas emissions resulting from DCRA vehicles. DCRA has taken important steps to manage its natural resources responsibly and reduce any impacts, as described below.

Water Conservation

DCRA actively seeks to conserve water by minimizing potable water consumption. DCRA has installed water efficient fixtures in the terminal and employs landscaping best practices that minimize use of potable water. Airport landscaping includes native, drought tolerant prairie species that require less watering and maintenance.

Water Quality and Wetlands

The West Branch of Starkweather Creek flows through Airport property ultimately discharging into Lake Monona. DCRA tests water quality of the Creek at three locations on airport property: upstream, downstream, and at a gauge station to ensure that current protection initiatives are effective. Cherokee Marsh and other wetlands are located on and around the Airport. DCRA takes many precautionary measures to ensure the risk of adverse impacts to these resources is minimized through sustainability measures such as, a glycol management system, and non-toxic runway deicing chemicals. DCRA and its tenants ensure compliance with spill prevention procedures, pollutant discharges, and storm water management.

Balancing the Operational Efficiency and Natural Resources Aspects of Sustainability at DCRA

DCRA needed to improve the Runway 14/32 Safety Area to meet FAA standards but was challenged due to site constraints, including Cherokee Marsh, a 2,000-acre high-quality wetland complex that contains a State Natural Area. In 2005-06, the Airport constructed improvements to the RSA and enhanced water resources in the vicinity of DCRA.

A comprehensive on-site mitigation plan was developed in coordination with ten federal, state, and local agencies to mitigate 53 acres of wetlands resulting from project impacts. The mitigation plan included many enhancement and restoration measures to correct adverse historical impacts to water resources in the vicinity of the Airport, including restoration of over 90 acres of Cherokee Marsh to a natural and self-sustaining wetland. The results were a net overall gain to local water resources, because of the large wetland functional gains and reversal of significant ongoing impacts to high-quality wetlands, including a fen. The restoration of annual floodplain wetlands to Starkweather Creek increased floodplain area substantially in this mostly urban watershed.

DCRA received the ACI-NA Environmental Achievement Award for Wetland Mitigation and the FAA Great Lakes Region Outstanding Achievement Award for Environmental Stewardship for the Runway 14/32 Safety Area project, completed in 2006.



Swamp Thistle is an example of native plants you'll see at DCRA. It is prominent in wetlands and is low maintenance



In 2005-2006, DCRA relocated over a mile of Starkweather Creek north of the passenger terminal facility area with a wide floodplain and low flow channel to improve water quality, and provide flood storage.

The following describes initiatives DCRA has implemented to conserve and restore wetlands and local water quality.

INITIATIVE	DESCRIPTION	SUSTAINABILITY BENEFITS
Herbicide Selection	DCRA utilizes herbicides that are environmentally friendly to keep perimeter fence lines clear of brush and weeds. Best management practices are followed when applying these chemicals, which are used minimally.	Preserves water quality and protects Starkweather Creek.
Spill Prevention Plan	To reduce the risk and impact of spills, DCRA and the Wisconsin Air National Guard, Army National Guard and Wisconsin Aviation maintain inventories of spill containment and cleanup supplies throughout the airport. In addition, all tenant refueling personnel on the Airport are trained on standard fueling procedures.	Preserves water quality through spill prevention.
Minimized use of deicing chemicals	DCRA minimizes runway/taxiway deicer usage by utilizing sand whenever possible to provide safe breaking actions for aircraft during winter weather conditions. In addition, DCRA uses sodium acetate, an environmentally-friendly product, instead of salt for deicing of parking ramps. In areas where road salt is required, the Airport minimizes salt usage whenever possible.	Preserves water quality and reduces stormwater discharge impacts.
Glycol Management System	DCRA's glycol management system collects storm water runoff that may contain glycol. This system samples, tests, stores, and discharges only water that meets water quality standards into the nearby watershed. Storm water that does not meet water quality standards is diverted to treatment facilities.	Preserves water quality and reduces stormwater discharge impacts.
Runway Deicer Biodegradable Chemicals	DCRA converted to potassium acetate as a runway deicer in 1995. Unlike glycol and urea, potassium acetate is environmentally safe, biodegradable, and is compatible with the requirements of DCRA's Wisconsin Pollutant Discharge Elimination System permit.	Preserves water quality and protects Starkweather Creek.

INITIATIVE	DESCRIPTION	SUSTAINABILITY BENEFITS
Greenspace Development	The Greenspace Development program includes vegetation that detracts from animal habitat development which reduces the need for other methods of wildlife management.	Increases safety of aircraft operations, reduces need for other wildlife control measures.
Wetlands Enhancements	DCRA created and manages a 48 acre wetland bank in northern Dane County which can be used by other Dane County departments and municipalities. The Airport has also enhanced existing wetlands and created an additional 5 acres of wetlands located on airport property.	Preserves natural resources.
Security Fencing Improvements	DCRA installed a barrier membrane under the new fence to prevent vegetation growth and to improve mowing along the fence line. The use of this barrier lessens the use of herbicides in these areas and reduces wildlife attractants.	Preserves water quality and reduces environmental impacts and the need for other wildlife control measures.
Habitat Modification	DCRA installed a system of hanging chains at the entrance to culverts located on the airfield to deter birds from nesting inside the culverts; nesting/feeding birds pose a threat to aircraft safety.	Increases safety of aircraft operations, reduces need for other wildlife control measures.
Grassland Buffer	DCRA maintains a grassland buffer along the Runway 21 approach to reduce erosion from agricultural lands.	Preserves natural resources.

An aircraft being deiced in the winter at DCRA. DCRA has an extensive glycol management system to ensure affluent does not adversely impact local water resources.

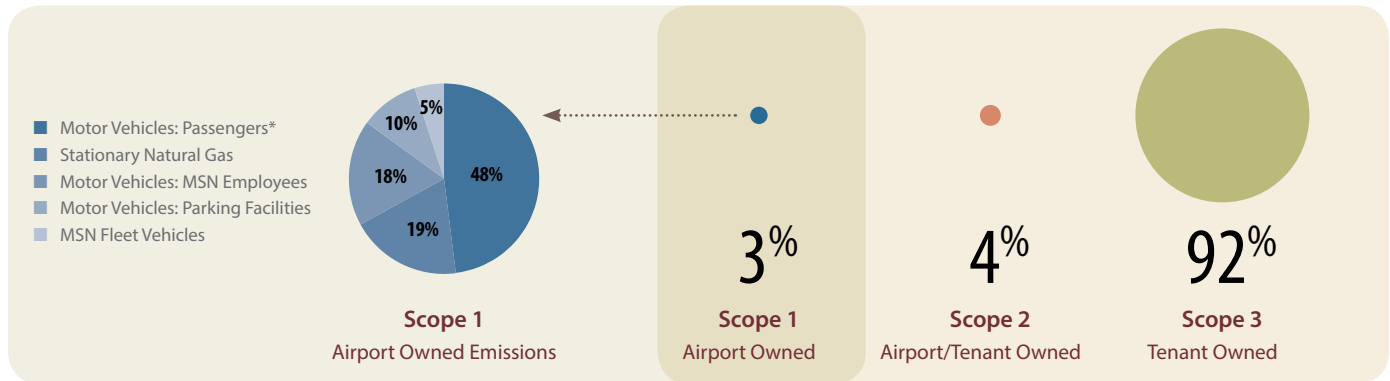


Air Quality and Greenhouse Gas (GHG) Emissions

Emissions of air pollutants (criteria air pollutants) and GHGs at airports could have potentially adverse consequences to local air quality, and to the global climate. In 2012, Dane County published a GHG baseline inventory for 2007. Although this inventory incorporated some of DCRA's electricity and natural gas use, it did not incorporate motor vehicle or tenant source emissions. As a result, DCRA proactively developed a comprehensive GHG emissions inventory to better understand all of the emissions associated with DCRA and tenant operations. The main objective of the GHG emissions inventory is to assist DCRA staff with identifying, quantifying, and managing the Airport's contribution of GHGs.

The GHG emissions inventories were categorized in terms of emissions by the following "ownership boundaries" (i.e., those emissions under the jurisdiction and control of DCRA versus those produced by airport tenants and passengers):

Greenhouse Gas Emissions Inventory



* GHG emissions from motor vehicles consist of passenger vehicles traveling on-airport roadways.

Source:
KB Environmental Sciences, 2014.

- **Scope 1 / Direct** – GHG emissions from sources that are owned and controlled by DCRA. These include Airport owned and controlled stationary sources (e.g., boilers, emergency generators, etc.) and vehicles using on-Airport roadways and associated areas.
- **Scope 2 / Indirect** – GHG emissions associated with the generation of electricity consumed by the reporting entity (DCRA) and its tenants.
- **Scope 3 / Indirect & Optional** – GHG emissions that are attributed to activities at the Airport, but are associated with sources that are neither owned nor controlled by DCRA. These include aircraft-related emissions and emissions from other airport tenant activities.

As a result of the Airline Deregulation Act of 1978, airports do not have control over airline’s aircraft operations. Because the majority of GHG emissions at an airport results from aircraft operations (“Tenant Owned”), DCRA has limited control over reducing these emissions. DCRA will continue to encourage tenants and airlines to participate in the sustainability program, where applicable, but has no authority to require emission reductions. Therefore, DCRA has focused its GHG reductions on Scope 1 (Airport Owned) and Scope 2 (Airport/Tenant Owned) GHG emissions. Together, scope 1 and scope 2 emissions represent 7% of GHG emissions resulting from airport activities.

The following describes some exemplary initiatives DCRA has implemented to reduce GHG emissions and maintain local air quality.

INITIATIVE	DESCRIPTION	SUSTAINABILITY BENEFITS
Air Quality Monitoring	The Airport constantly monitors nitrogen dioxide (NO ₂) and carbon monoxide (CO) to maintain air quality within the inbound and outbound baggage tunnels.	Ensures air quality and employee health through reduced exposure to potentially harmful levels of NO ₂ and CO.
Fleet Vehicles	The Airport conducts a vehicle preventive maintenance program to maximize the efficiency of the vehicles. Additionally, compressed natural gas (CNG) and ultra-low sulfur diesel fuel is used to reduce emissions.	Reduces greenhouse gas emissions.
400 HZ Power	The Airport retrofitted eleven aircraft boarding bridges to 400 HZ power to allow aircraft parked at the gate to operate their electrical systems without running their engines or auxiliary power units, or engine-driven ground support equipment (GSE).	Reduces greenhouse gas emissions and aircraft noise, as well as increases fuel savings for the airlines.
Locally Sourced Products	Materials used in the 2006 terminal expansion project included sand, gravel, block, brick, and glass that were acquired through regional resources.	Local materials decrease the GHG emissions associated with transporting the materials.

Solid Waste Management

DCRA manages waste centrally for the terminal and airport tenants, including airlines. The airport tenants are required to collect and transport their respective waste to the collection room for disposal and recycling. A clean and well-organized waste collection room is provided for the sorting and removal of waste. The Airport has a robust program for municipal solid waste (MSW) recycling and disposal of materials such as cardboard, commingled recyclables (aluminum, plastic, glass), electronic waste, and more. DCRA's estimated recycling rate has remained consistent over the last four years, ranging from 12-14%.

Waste Audit

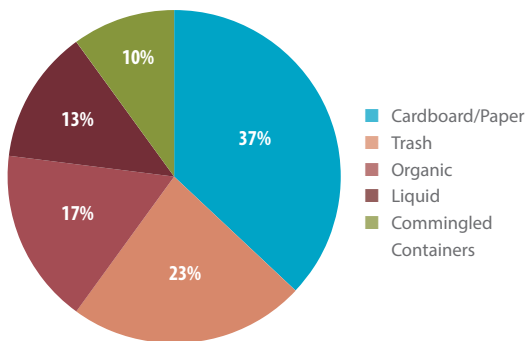
Working in collaboration with the Airport and in support of the Sustainability Plan, the project team conducted a waste audit to better understand current waste management operations in addition to assessing sources and composition of the waste generated at DCRA. The results from the waste audit provided a base for determining where improvements can be made.

Key results from the waste audit:

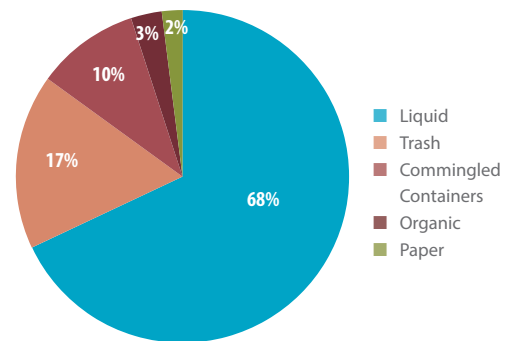
- **Overall Airport MSW:** Approximately 47% of waste generated at the Airport could be recycled (cardboard/paper and commingled containers), 17% of the waste was composed of organic materials, 13% liquid, and 23% was “trash” to be disposed in landfills.
- **TSA Screening Checkpoint:** The bins located in the TSA checkpoint were composed primarily of liquid (68%) indicating opportunities to reduce waste generation through capture of this fluid.
- **Deplaned Waste:** Waste generated in flight and disposed of at DCRA waste is composed of 51% recyclable materials, (paper and containers), 28% trash, and 21% liquid and organics.

DCRA has implemented several successful initiatives that reduce materials use and solid waste, as described below.

DCRA Waste Composition



TSA Screening Checkpoint Waste Composition



Source: Madison Environmental Group, 2013.

INITIATIVE	DESCRIPTION	SUSTAINABILITY BENEFITS
Reduced Chemical Use	DCRA only uses environmentally-friendly (biodegradable, less toxic) solvents, cleaners, and other chemicals for custodial services and all areas of maintenance. The terminal maintenance staff converted to using organic, citrus based, less toxic solvents for most cleaning purposes. The Airport uses water-based paints on all airfield surfaces. Water is used for cleanup instead of toxic solvents.	Preserves air quality and employee health through reduced exposure to toxic chemicals.
Terminal Expansion Waste Management	<p>DCRA incorporated the following features during the terminal expansion:</p> <ul style="list-style-type: none"> • Loading dock facilities were relocated to increase the size and ability to use the recycling compactors and dumpsters. • Detachable, recyclable building assembly systems. • Acoustic ceiling tiles used throughout the terminal are manufactured from recycled soda bottles. • Longer lasting and lower maintenance granite, tile, and stainless steel were utilized. • Structural steel was domestically fabricated with recycled content. 	Purchasing and materials reuse reduces waste disposed in landfills.
Airport Administration Waste Management	<p>DCRA has implemented several initiatives to reduce waste and use environmentally-preferable products:</p> <ul style="list-style-type: none"> • Surplus products are sent to University of Wisconsin's Surplus with a Purpose (SWAP) to be reused, recycled, or sold. • Paperless office procedures encourage the use of e-mail, web, and other non-paper reporting systems. • Coordination with service and product vendors to utilize high percentage post-consumer recycled paper for airport stationery, envelopes, business cards, reports, manuals, brochures, and printers. 	Reduces waste disposed in landfills.
Construction Waste	<p>DCRA has implemented the following initiatives during construction:</p> <ul style="list-style-type: none"> • Includes recycling requirements in all construction contracts. • Stockpiles topsoil for other on Airport projects. • Additionally, DCRA was able to recycle 100% of the runway material during reconstruction of Runway 18/36. Concrete pavement was crushed and processed on-site and the remaining particulates were used as either as substructure for new layers of concrete or in roadway drain tiles and as erosion control materials. • Asphalt pavement was restored using "cold central-plant recycling." In this technique, stockpiled milled asphalt from the road is processed in a nearby plant for reuse under a new hot-mix asphalt overlay. 	Cost savings when recycled materials are used for DCRA projects. For each ton of cement and asphalt recycled at MSN, more than 2,000 gallons of water are saved and the emission of nearly 4,000 pounds of CO ₂ gas is eliminated.

Economic Vitality

DCRA is a significant economic resource to Dane County and the region. The Airport receives no local tax revenue and instead is self-funded through fees paid by its primary tenants – passenger airlines – and parking revenues, terminal building rentals (car rental agencies, the restaurant and lounge, gift shop, etc.), and a host of other airport tenants. As a result of its self-sufficiency and its primary role as a transportation node that connects the Dane County with the world, DCRA is a major economic engine to the community.

Non-Aeronautical Land Development

Funds generated from non-airline sources diversify an airport's revenue stream (making them less vulnerable to fluctuations in air service) and ultimately lower costs for airlines to operate at an airport, measured by airlines in "cost per enplanement". Foreign Trade Zone (FTZ) sites and Truax Air Park are located on Airport property and serve as important supplemental sources of revenue for DCRA.

Truax Air Park is a 300-acre office park located on Airport property that is not suitable for aviation use. The Air Park parcels are leased (or available for lease) for the development of office and business facilities. As of 2012, there were 25 acres of leasable property remaining. The FAA requires the Airport to collect "fair market" rent on the parcels and restricts the use of the revenues to the Airport. The park is home to "high-tech" research and manufacturing companies. Growth and development of these types of companies is sustained by the area's strong business base as well as its proximity to the University of Wisconsin. Examples of current development on the land include a junior college, several office buildings, and a brewery/restaurant.

An FTZ is a specific area in or adjacent to a port of entry in the U.S., where commercial merchandise can be imported without going through formal customs entry procedures, and are exempt from paying customs duties and other taxes. Companies that locate in an FTZ are not charged taxes or tariffs on their product until it is sold. The benefit of this is significant cost savings for a company, as well as improved cash flow, which help to retain and create jobs. DCRA was granted the authority to establish an FTZ in 2005 and two FTZ sites which total 123 acres are located on Airport property. Fourteen additional sites, off Airport property, are available for use as FTZ sites.



Offices at Truax Air Park, which help sustain DCRA's economic performance



Ale Asylum is one of DCRA's non-aeronautical tenants. This brewery and restaurant is a popular destination for both locals and tourists alike.

Regional Economic Impact

Annually, DCRA generates approximately \$500 million to the regional economy and directly and indirectly supports 10,000 jobs. Nearly 6,500 workers are employed in Dane County as a direct result of airport operations and facilities use, ranking the airport as the third largest full-time employer in the county. This generates over \$140 million in wages to airport-related workers in Dane County, with over \$82 million in secondary wages paid to workers throughout the county.

Employment within the Airport Department has steadily risen over the past ten years from 62 full-time positions to 73 in 2012.⁵

How does DCRA help in regional economic development efforts?

"The direct flights...help us recruit the best and brightest talent and venture capital from around the country." – Mark Bugher, Director, University Research Park, University of Wisconsin-Madison (Retired)

"Greater Madison is a place of tremendous opportunity for talent, investment, and travel. The airport is a critical direct link that opens that opportunity to the world." – Zach Brandon, Chamber President, Greater Madison Chamber of Commerce

DCRA promotes sound economic practices through diversifying revenue and marketing. Below are some examples of activities undertaken by the Airport to ensure its own economic viability.

INITIATIVE	SUSTAINABILITY BENEFITS
Truax Air Park provides opportunities for non-aeronautical development.	Non-airline revenue generation opportunity to diversify and lower costs for airlines to operate at DCRA.
Foreign Trade Zone (FTZ) sites enable local companies to import goods without formal customs entry procedures and delay payment of taxes or tariffs until their products are sold.	Promote foreign trade around the Airport to enhance business development and air cargo demand
Airline marketing to enhance service offerings to passengers.	Continuous marketing to airlines (existing and new to market) results in greater transportation service and new non-stop markets served from DCRA.

⁵ Comprehensive Annual Financial Report for the Year Ended December 31, 2012, County of Dane, Wisconsin

Community

DCRA supports a variety of community activities such as greenspace, an art court, and sponsorship of Madison Mallards semi-professional summer-league baseball team. DCRA is committed to providing a positive passenger experience, as well as being a good neighbor.

Passenger Experience

DCRA is very focused on providing a positive passenger experience. Services and amenities at the Airport include:

- In-seat power station for power cords and USB cables, as well as a charging bar with both standard outlets and USB ports
- An art court, which is open to the public and displays local, regional, and national exhibits
- A variety of lounges
 - Greeters lounge
 - Family lounge
 - Mother's lounge
- Many restaurants and shops
- A convention and tourist information booth



DCRA concessions help improve passenger experience. At the newly renovated Ancora coffee shop, passengers can comfortably wait for their flight



DCRA celebrated Frontier Airline's inaugural flight to Orlando, Florida with a ribbon cutting and gift bags for passengers

Being a Good Neighbor

DCRA strives to be a positive role model in the community, and a good neighbor to residential areas in the vicinity of the Airport. DCRA achieves this through initiatives such as charitable giving and noise abatement programs.

Aircraft noise is typically the primary concern the public has with an airport. Through working with the community, these concerns can be reduced. DCRA provides the public an opportunity to submit aircraft noise complaints through the Airport's 24-hour noise hotline (608-246-5841) or a form on their website.⁶

6 DCRA. Noise Report Form. http://www.msnairport.com/about/ecomentality/noise_report_form.aspx



DCRA constructed Bridges Golf Course, a public facility located on Airport property just south of the airfield. The golf course is a greenspace area that enhances the community's quality of life.

DCRA investigates all noise complaints to determine if the operation did not follow the Airport's noise abatement procedures, and why. DCRA then follows up with airlines and air traffic control to ensure the airlines are aware of the Airport's noise abatement procedures, as applicable.

DCRA recognizes that its success is dependent on its employees and the traveling public that it serves. The Airport has implemented initiatives and programs to improve passenger experience and its neighboring community and employee wellbeing. The following highlights some of these initiatives.

INITIATIVE	DESCRIPTION	SUSTAINABILITY BENEFITS
Passenger Experience Initiatives	<ul style="list-style-type: none"> • DCRA's Art Court is located in the main terminal, across from the airline ticket counters, and is open to the public. The Art Court provides passengers the opportunity to experience the local culture, as well as regional and national exhibits. • Holiday singers are present at the Airport during the holiday travel season. • DCRA seeks to offer food concession options that are comfortable, convenient, and cater to the needs of the traveling public. 	Enhances the passenger experience; Supports local artists
Community Events	<p>Honor Flights: DCRA assists with Honor Flights, a program that enables local World War II and Korean War veterans to travel to the Washington D.C. memorials.</p> <p>Hangar Dances: Wisconsin Aviation hosts hangar dances at DCRA during the Oshkosh Air Show. WWII vintage aircraft are located at the Airport and offer historic aircraft rides. The dances have a live band and period attire is encouraged.</p>	Provides community enjoyment; Supports military veteran troops; Provides positive exposure for the Airport in the community.
Greenspace Development	DCRA redeveloped the International Lane median from Packers Avenue up to the terminal area. Redevelopment included significant landscaping improvements to create a positive "first impression" to passengers at the Airport. This project received the "Orchid Award" from the Capitol Community Citizens group in 1994.	Provides community enjoyment; Provides positive exposure for the Airport in the community.
Bicycle Path	DCRA provided land to permit construction of a bike path linking the East Washington corridor to the Madison College.	Provides community enjoyment; Results in environmental benefits from biking; develops community support for the Airport.
Community Engagement (Noise)	<p>DCRA conducts numerous outreach activities to engage stakeholders on noise issues:</p> <ul style="list-style-type: none"> • Semi-annual noise meetings are held in April and October with the Noise Abatement Subcommittee (NAS), which includes the community and other stakeholders. • DCRA provides educational materials at the Wisconsin Aviation. These materials educate GA pilots on the noise abatement and wildlife management programs. • The Runway Safety Action Team (RSAT) includes tenants and local pilots, Wisconsin Air National Guard, Wisconsin Army National Guard, the FAA and FBOs. The RSAT meets regularly to review overall airport operations, noise abatement, wildlife hazard management, NextGen (FAA's airspace redesign), and other relevant topics. RSAT members are also encouraged to attend the NAS meetings. 	Enhances awareness of noise issues. Provides the opportunity for DCRA to directly address community noise concerns.

How will DCRA meet its Sustainability Goals & Objectives?

With an understanding of its existing performance and opportunities for improvement, DCRA identified sustainability initiatives to assist in advancing the Airport's sustainability performance and meeting its sustainability goals and objectives. Sustainability initiatives range from high-level process changes within the organization (e.g., integrating sustainability considerations into the capital improvement projects) to stand-alone strategies directed at a certain area or facility of the airport (e.g., specific energy efficiency measures identified as a result of the terminal facility energy evaluation). Initiatives also include recommendations for enhanced monitoring and measuring of systems relating to DCRA's sustainability goals and objectives.

The following table provides the recommended short-term sustainability initiatives that were selected by DCRA for implementation within the next three years. These sustainability initiatives are aimed primarily at areas within the Airport's control, but also include some strategies for engaging employees, tenants, and passengers and supporting tenant efforts.

Short-Term Sustainability Initiatives

Energy

- Assess Renewable Energy Options when Initiating New Projects*
- Conduct Continuous Energy Metering*
- Decrease Temperature in the Baggage Handling Area
- Continue Installation of LED Airfield Lighting*
- Retrofit Lights in Parking Ramp to LED*

Economic Vitality

- Evaluate Business Practices for Opportunities to Incorporate Sustainability Considerations*
- Designate Project-Specific LEED Credits for New Developments to Meet
- Encourage Non-Aeronautical Development Projects in Industrial Park to Follow Sustainability / LEED Design Principles*

Waste

- Document Solid Waste Management Policy & Procedures
- Continue to Install Water Bottle Filling Stations*
- Set Up Liquid Collection Stations at Security Checkpoints
- Implement a Recycling Awareness Campaign for Passengers and the Public
- Assist Airlines in Improving Handling of Deplaned Waste*
- Assist Tenants in Improving Waste Handling*
- Improve Visibility, Number, and Placement of Recycling Receptacles in the Terminal
- Implement Recycling Outreach and Education Program for Employees*
- Include Recycling Requirement in Tenant Procedures or Lease Agreements

- Install New Labeling in the Waste Sorting Room
- Improve Recycling Signage in Terminal
- Institute Sustainable Office Procedures, Consistent with County Policy

Natural Resources

- Incorporate Native/Low Maintenance Vegetation in Landscaping Plans for Future Projects*
- Consider Leasing Land for an Apiary
- Replace or Install Restroom Manual Flush Valves Instead of Auto Sensor Valves*
- Facilitate Electric Charging Station Infrastructure for Electric Ground Support Equipment (GSE) at Terminal Gates*
- Evaluate Innovative Best Management Practices when Initiating New Projects*
- Consider Water Reuse (Gray Water) and Cisterns in Future Facility Design

Community

- Install Within the Terminal a Multimedia Display About Sustainability at DCRA
- Develop a Communication Plan to Report on Sustainability Successes*
- Issue a Press Release Whenever an Airport Sustainability Project is Planned and/or Implemented
- Provide Parking Availability Information on DCRA Website for All Lots

Tenant & Public

- Engage Vendors in DCRA's Sustainability Program
- Encourage Single-Engine Taxi Procedures
- Continue to Encourage the Use of Local Vendors/Suppliers

**Ongoing initiative*

