

2010 Environmental Sustainability Report

KENT COUNTY DEPARTMENT OF AERONAUTICS

**GERALD R. FORD INTERNATIONAL
AIRPORT**

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INTRODUCTION

The Gerald R. Ford International Airport (GRR) is located approximately seven miles southeast of the central business district of Grand Rapids, Michigan. GRR is owned by Kent County and is operated by the Kent County Department of Aeronautics (KCDA) through the Kent County Aeronautics Board. GRR occupies land totaling approximately 3,400 acres. The airport is classified as a small hub commercial service airport, and provides air service to Metro Grand Rapids and surrounding West Michigan counties.

The Gerald R. Ford International Airport contributes to the state and national air transportation systems and provides considerable economic benefit to the West Michigan region. It is important that the Airport facilities are developed and maintained in a fiscally and environmentally sensitive manner.

PURPOSE

The purpose of this report is to provide the Department of Aeronautics, and the general public with the history, inventory, and current status of the Kent County Department of Aeronautics' efforts in the area of Environmental Sustainability.

Department of Aeronautics Mission Statement

These efforts are built around the Kent County Department of Aeronautics' mission statement:

It is the mission of the Kent County Department of Aeronautics to provide safe, efficient, *environmentally sensitive* and economically self-sustaining air transportation facilities responsive to regional needs.

Department of Aeronautics Values

Supporting the Department's Mission Statement are the Department of Aeronautics Values which include being: **safe, secure, customer friendly, with continuous improvement.**

The Kent County Department of Aeronautics views its environmental sustainability efforts as an integral part of its mission and is committed to reducing the Airport's impact on the natural environment. Environmental sustainability has been demonstrated as a core component of the Airport's mission since before the Airport opened at its current site in 1963.

Airport Master Plan and Environmental Study History

The following is an inventory of the Airport's master planning and environmental sustainability efforts accomplished in the development of the Gerald R. Ford International Airport. Included in the list is a brief outline of the environmental topics reviewed in each study.

1958-59 A Program for The Development of the Cascade Township Site as The Kent County Airport:

In 1958, after studying various sites for the development of a new Airport facility whose purpose was to serve the West Michigan community, the Kent County Airport Board of Control recognized the importance of addressing incompatible land use adjacent to any proposed airport site. The result of the study culminated with the selection of the Cascade Township site for a

new airport. In the late 1950s and early 1960s property was purchased, plans and specifications were developed and construction began. The initial construction phases were completed and the Kent County Airport opened in 1963.

1977 Kent County Airport, Environmental Impact Assessment Report:

This report's purpose was to review the environmental impact of the proposed extension of Runway 8R/26L. The report reviewed aircraft noise, air quality, water quality, social and economic impacts, wildlife impacts, historical and archeological sites, and other impacts as required under the National Environmental Policy Act (NEPA) of 1969.

1983 Kent County International Airport Master Plan Update:

As with all airport master plan updates, the study reviewed future airport demand and the necessary development to accommodate that demand. The update included an environmental analysis which reviewed noise, air quality, water quality, and vegetation and wildlife for various airport development scenarios.

1992 Kent County International Airport Master Plan Update:

This update identified and reviewed future airport needs. Included in the proposed development were the reconstruction and extension of Runway 8L/26R, reconstruction and realignment of Runway 18/36 to 17/35, and the reconstruction of the Airport's primary Air Carrier Runway 8R/26L. Other projects identified, included the expansion of the air carrier apron, development and expansion of the Airport's Air Cargo and Trade Center, and multiple parking improvements. The environmental review and approval for the majority of these projects was accomplished through the 1992 Environmental Assessment. In January of 1993 in the Environmental Assessment Record of Decision, the U.S. Department of Transportation, Federal Aviation Administration issued a Finding of No Significant Impact (FONSI), on the Master Plan Development/Airport Layout Plan for the Kent County International Airport.

1992 Kent County International Airport Federal Aviation Regulation (FAR) Part 150 Noise Study:

In conjunction with the 1992 Airport Master Plan Update project, KCDA also conducted a Federal Aviation Regulation (FAR) Part 150 Noise Study. This study evaluated aircraft noise impacts in areas surrounding the Airport. The study produced a Federal Aviation Administration (FAA) approved Noise Compatibility Program (NCP), and FAA accepted Noise Exposure Maps (NEMs) for the Airport.

The Airport's Noise Compatibility Program included the establishment of a Noise Abatement Advisory Committee; creation of a Noise Complaint Program; the continuation of noise abatement departure procedures; seeking a greater percentage of Stage 3 Aircraft; Comprehensive Land Use planning and zoning; development of a Noise/Height/Safety Overlay Zoning District; development of a Disclosure Ordinance; an Acoustical Treatment and Avigation Easement Program; a Purchase Assurance Program; and an option to Purchase Portable Noise Monitoring Equipment;

The FAA issued a "Record of Approval" (ROA) for the Airport's FAR Part 150 Noise Compatibility Program in 1994.

1992 Kent County International Airport Environmental Assessment:

This assessment analyzed the impact of the 1992 Master Plan Update's "Proposed Action" (Proposed Development Program) upon the environment. The analysis reviewed various development alternatives and their specific impact categories. The categories included noise, land use, social impacts, induced socioeconomic impacts; air quality; water quality; US Department of Transportation – Section 4 (f) impacts (Natural Beauty/Parklands); historical, architectural, archeological and cultural resources; biotic communities; endangered or threatened species of fauna or flora; wetlands; floodplains; coastal zone management program/coastal barriers; wild and scenic rivers; prime and unique farmland; energy supply and natural resources; light emissions; solid waste/hazardous waste; construction impacts; and hazardous waste sites as required under the National Environmental Policy Act (NEPA). The result of the assessment was the issuance of the Finding Of No Significant Impact (FONSI) by the FAA.

2000 Gerald R. Ford International Airport Noise Exposure Map Update:

In response to changing airport operations and community requests GFIA updated its NEMs in 1999/2000. The updated NEMs were accepted by the FAA in December of 2000. The update study revealed that Airport noise impacts to the community had reduced. Affected residential acreage reduced from 430 acres in the 1995 NEM to 19 acres in the 2005 NEM.

2004 Gerald R. Ford International Airport Master Plan Update:

After completion of the majority of proposed development outlined in the 1992 Master Plan Update, the Airport again updated its Master Plan in 2004. The Master Plan Update also included an environmental review for all proposed projects. This review analyzed environmental impact categories. The categories included air quality; coastal zone management program/coastal barriers; compatible land use; construction impacts; US Department of Transportation – Section 4 (f) impacts (Natural Beauty/Parklands); energy supply and natural resources; farmlands; biotic communities (including flora and fauna); floodplains; historical, architectural, archeological and cultural resources; light emissions; noise; induced socioeconomic impacts; social impacts; solid waste impacts; water quality; wetlands; and wild and scenic rivers as required under the National Environmental Policy Act (NEPA).

The review revealed that many of the proposed development improvements would be categorically excluded by the FAA. To date, all of the projects planned and built have received FAA Categorical Exclusion approval. Additional air quality analysis was performed for the recently completed parking structure and road improvements and this project also received FAA Categorical Exclusion approval.

Department Organization and Environmental Management Systems (EMS)

Each of the Department's divisions has a role in environmental sustainability efforts of GRR. The following will summarize each of the divisions and their responsibilities in the Airport's environmental sustainability efforts:

Airport Facilities Division:

The Facilities Division's mission is to "provide aeronautical facilities and infrastructure which are properly designed, well maintained, environmentally compliant, and customer-friendly through comprehensive engineering, construction and maintenance programs". To accomplish this mission, the Facilities Division is split into several subdivisions which include Engineering and Planning, Building Maintenance, and Field Maintenance staff.

Engineering and Planning:

The Engineering and Planning staff are GRR's front line of environmental compliance specialists. They recommend selection of architects, engineers, planners, and environmental consultants and work with the consultants to submit appropriate environmental documentation for GRR's National Pollution Discharge Elimination System permits. They work with all selected consultants to design and construct efficient and environmentally sensitive facilities which meet FAA standards. They submit all required environmental review documents to appropriate agencies for review and approval. They coordinate all GRR master plan and environmental study efforts with required Federal, State, and local planning officials and the general public as required by law.

These staff also administers GRR's landscape maintenance contract which requires operating procedures that prevent introduction of fertilizers and grass clippings into the storm water system.

Building Maintenance:

Building Maintenance staff ensures that all building electrical, heating, ventilation, and air conditioning systems and equipment are operating efficiently. They also maintain all airfield lighting and signage and are responsible for reuse of existing lighting and signage from new project construction.

Field Maintenance:

Field Maintenance staff ensure that all Department equipment and vehicles are maintained cost effectively to provide reliable, capable and environmentally friendly service to meet facility demands. Field Maintenance staff play a major role in the collection of used aircraft deicing fluids. Field Maintenance staff maintain all airfield pavements and grounds to FAA standards as well as monitoring the use of chemicals used in snow & ice control operations.

Airport Finance and Administration Division:

The Finance and Administration Division's mission is to "provide financial accounting, general administration, parking and ground transportation, property management, clerical and information technology support to the Department". To accomplish this mission, the division is split into several subdivisions, each playing a part in the Airport's environmental and sustainability efforts.

Financial Accounting:

The Financial Accounting staff processes invoices for appropriate fees for environmental reviews, and consultants, and that funding for GRR's sustainability efforts is budgeted.

Parking and Ground Transportation:

The Parking and Ground Transportation staff employs parking technologies to reduce waiting times and the time in which it takes a patron to find a parking space. These staff also utilize a License Plate Inventory (LPI) system to assist patrons in finding lost cars without driving throughout the entire parking lot system.

Property Management:

This staff member ensures that appropriate language requiring environmental compliance is included in all tenant contracts, permits, ground leases, and other agreements. They also coordinate tenant submittals of appropriate planning and construction review documents for tenant improvements including additions, remodeling, and removal of outdated facilities and construction of new facilities.

Information Technology and Administrative Support:

These staff members are responsible for the ordering of supplies for the office as well as coordinating the use of available meeting rooms and to ensure that lights are turned off after use. They also document and file all meeting minutes and correspondence and assist in public involvement efforts in construction projects, studies, and master plan update projects.

Airport Public Safety and Operations Division:

The Public Safety and Operations Division's mission is to "ensure that the Gerald R. Ford International Airport is operated in accordance with Federal and State Regulations in order to provide a safe secure facility for the Airport's tenants and users". To accomplish this mission the division is split into three subdivisions; Airport Law Enforcement, Aircraft Rescue and Fire Fighting (ARFF), and Airport Operations. Each plays a part in the Airport's environmental and sustainability efforts.

Airport Law Enforcement:

The Airport Law Enforcement staff are responsible for the enforcement of Airport Environmental Rules and Regulations.

Aircraft Rescue and Fire Fighting:

The Aircraft Rescue and Fire Fighting staff is responsible for hazardous materials safety training and are the Airport's front line in hazardous materials incidents. These staff also conduct inspections of tenant facilities.

Airport Operations:

The Airport Operations staff is responsible for ensuring the operational safety of GRR in accordance with Federal Requirements. This task includes airfield inspection, and reporting of hazardous materials spills. They also inspect tenant areas for environmental compliance with Airport rules and regulations. They also may issue citations for violations of airport environmental rules. Airport Operations staff also investigate noise complaints and encourage voluntary noise abatement procedures.

Airport Marketing and Communications:

The Airport Marketing and Communications group's mission includes "developing communications tools that inform stakeholders of the Airport services and activities".

The Airport Marketing and Communications staff is responsible for the production of all public environmental communications through newsletters, the Airport's Web site, the annual Profile, informational brochures, videos, and specialty publications. They are also responsible for conducting news media relations that relate to the Airport's environmental issues.

Sustainability Achievements and Opportunities

The Department of Aeronautics has met many milestones in environmental achievements and in resource conservation over the years. While we take pride in these achievements, under our continuous improvement value, we remain engaged in examining all facets of our Airport operation for additional environmental sustainability opportunities.

Development and Sustainability Achievements:

The following summarizes the Department's environmental development and sustainability achievements:

Solid Waste - Recycling

Construction Recycling:

As with any large airport, construction is nearly continuous. The very nature of airports necessitates the use of paved surfaces to accommodate aircraft, trucks, maintenance, and personal vehicles. In the construction and maintenance of these surfaces, volumes of materials are reused and/or recycled. In all GFIA construction projects engineers endeavor to balance earthwork quantities. The remaining excess earth is often used as controlled fill for future on and off-airport projects. When reconstruction occurs paved materials are removed and contractors are encouraged to recycle. Concrete pavement is removed and is often crushed for reuse, and asphalt pavements are in most cases milled and returned to the local asphalt plant for reuse or used as aggregate base materials for other on and off-site pavement projects. Contractors may choose to recycle all materials from pavement reconstruction projects in which case none of the material would go to waste. In one form or another, the vast majority of these materials are either reused or recycled.

When feasible, KCDA requested that excess excavated material from projects be used as controlled fill materials on adjacent areas reserved for future development. This action alone has the result of reducing future costs and reducing existing and future emissions.

Additionally, when removing utilities the contractor is encouraged to reuse or recycle these materials. Concrete pipe is often crushed and both the re-steel and concrete are recycled. In some cases, removed materials are in good enough condition for stockpile and reuse at another time. The Airport Building and Field Maintenance staff has stockpiled various materials (e.g., concrete and steel drain pipe, bollards, guard rails, street signs, castings, etc.) for recycling or future airport maintenance and development needs.

The Airport, when practical, takes every opportunity to reuse and recycle materials on airport construction projects. It must be noted that Airport Facilities staff, in the review and design of all airport projects, pays careful attention to the efficient use of materials.

Additionally, GRR Engineering/Planning and Field Maintenance staff maintains all airfield pavements in order to extend the pavement's life span. In their maintenance of pavements, joints and cracks are sealed to prevent storm water infiltration. This sealing prevents aircraft deicing fluids from entering the groundwater and also aids efficiency to collect deicing fluids for recycling.

Recycled Content (Green) Product Use:

Currently KCDA and most tenants utilize recycled/green products. Many office products, such as copy paper, are available in recycled/green form.

Cardboard/Paper Recycling:

Currently GRR and tenants have cardboard and paper recycling programs. This recycling effort is effective because these tenants have total control over materials they produce and where they are disposed. Some rental car companies are using smaller paper documents for preferred members.

Retail magazine and newspapers which are not purchased are returned and recycled through the magazine supplier.

Surplus Equipment Sales:

For many years KCDA has worked in conjunction with Kent County Purchasing to facilitate the sale of used airport equipment. In many cases, this specialized equipment (e.g., snow blowers, fire trucks, police and administrative vehicles) is purchased and reused by smaller airports and others throughout the region. Additionally, other older office equipment and furniture is sold through County Purchasing for recycle or reuse.

Recycling of Airfield Lighting and Signs from Construction Projects:

As part of their maintenance duties, Airport Building Maintenance staff recycles and reuses airfield lighting and signage which are turned back from construction projects. As part of the construction specifications, contractors may be required to turn over taxiway lighting and airfield signage to Airport Building Maintenance staff for re-use. These parts are inventoried and stockpiled for reuse.

Scrap Metals Recycling Program:

As noted above, recycling metals is a common practice at the airport. For many years Airfield Maintenance has arranged to have a metals recycling dumpster at their location to collect scrap metals. These metals come from damaged or worn equipment, replacement of old fence and other equipment and/or materials that must be replaced. Building Maintenance staff has also begun recycling scrap metals from obsolete equipment. Several tenants also recycle scrap metal products.

Battery Recycling Program:

The Airport for years has recycled batteries utilizing the Kent County Department of Public Works battery recycle program. Examples of these batteries include batteries for maintenance equipment, radios, telephones, parking equipment, electric back-up systems, computers, flashlights, etc. One of the many functions of Airport Field Maintenance staff is to maintain all equipment and vehicles. As such, battery replacement is necessary and these batteries are also recycled. Additionally, many tenants have established battery recycling programs.

Used Oil and Antifreeze Recycling Program:

Field Maintenance and many tenants have established programs for forwarding used equipment vehicle oil to recycling facilities. Filters are also drained and properly disposed. Used antifreeze drained from equipment and vehicles during maintenance is also forwarded for recycling.

Computer Component Reuse and Sale Program:

Airport IT staff also works with the Kent County Purchasing division to sell computer components and printers. If not sold for reuse, staff works with the Kent County Information Technology to recycle the remaining equipment. Nearly all Airport tenants have corporate programs for recycling of used computer equipment. The tenants also return used toner and ink cartridges to the suppliers for recycling.

Landscape Composting:

Both Field Maintenance and the Airport's contract landscape maintenance firm take existing landscape materials and compost for reuse. Field Maintenance uses bark mulch, root balls and other vegetation for soil stabilization.

Tire Recycling/Retread Program:

Airport Field Maintenance also forwards used tires for recycling. When possible used tires are retreaded for additional life. Nearly half of the Airport tenants recycle tires through their suppliers.

Recycling Light Bulbs:

Many lights are required at GRR to provide safe light levels both inside and outside. Opportunities for recycling light bulbs/tubes of all types are available. Currently, building maintenance staff recycles fluorescent light bulbs. KCDA, in cooperation with Kent County Purchasing and Kent County Department of Public Works, have established a program for the appropriate disposal/recycling of light bulbs. Several airport tenants also have established light bulb recycling programs.

Coffee Grounds:

HMS Host, the airport's food & beverage concessionaire, recycles all Starbucks coffee grounds.

AIR QUALITY

Landside Vehicle Emissions

Multi-modal Access to GRR:

Currently GRR is served by The Rapid, the region's transit provider. The Rapid makes several trips to and from the downtown Grand Rapids business district. The Rapid has formed the Public Transportation for Tomorrow (PTT) Task Force and Advisory Committee to investigate various transit options for the Grand Rapids metropolitan area. As part of their investigation, a transportation corridor from the Grand Rapids Business district to the Airport has been identified for possible future development.

In 2006 and 2007 KCDA worked with the Michigan Department of Transportation (MDOT) to improve freeway signage to minimize traffic congestion/idling at freeway interchange locations providing access to the Airport Terminal Area and Parking Improvement Program (TAPIP) transit station. The Rapid currently uses new hybrid-electric buses, some of which service the Gerald R. Ford International Airport. These buses feature a battery powered electric motor that provides most of the power at slower speeds and a smaller clean diesel engine that takes over at higher speeds.

Maintenance of Vehicles and Equipment:

As noted, KCDA Field Maintenance staff have been tasked with maintaining all Department vehicles and equipment. Properly maintained vehicles and equipment are more efficient and have cleaner emissions. Department vehicles and equipment are maintained in top working condition and a replacement schedule is followed to minimize the use of older, less efficient vehicles.

Clean/Green Rental Cars:

Currently all five of the rental car agencies at GRR offer either E85 (flex fuel) or Hybrid vehicles to patrons. Each of these agencies plans to continue to expand their green fleets. Additionally, each agency offers some sort of GPS or map location software equipment for their vehicles. This equipment has the potential to significantly reduce vehicle emissions.

Helping Motorists to Find Available Parking:

The Airport has numerous signs that provide directions and additional way-finding information through the Airport web site, radio broadcasts, and postings. A major component of designing all Airport facilities has always been to provide a high level of service to the users and aid both pedestrian and vehicle traffic circulation.

Reduced Vehicle Idling:

Because the Airport facilities were designed for ease of circulation, the parking exit plaza has been designed to accommodate high volumes through increased checkout and credit lanes. These design and operational features help in emissions reductions by providing for less vehicle idling and the subsequent reduction of emissions. The Airport's new parking structure has been designed with multiple entrance and exit lanes to reduce waiting and emissions. Additionally, signage and circulation technologies are employed to indicate if parking levels are full or not. The Airport has also developed a cell phone lot to reduce idling emissions. The cell phone parking lot will be expanded to accommodate additional vehicles in 2011.

Taxi Efficiency:

Another area of emissions savings is accomplished through the use of communications to waiting taxicabs in the taxi queuing lane. Instead of waiting with engines running in the queuing lane, drivers are contacted by the taxi company's dispatcher stationed at the terminal building front curb.

Airside Emissions

Equipment Trip-Reduction:

Airport Field Maintenance staff has a program to reduce emissions through efficient transportation of equipment operators to and from equipment during break periods. For example, if several of the heavy tractor mowers are mowing on the far side of the airfield in the same location throughout the day, a shuttle van will take them to and from their equipment during break periods. This effort helps in the areas of emission reductions, fuel efficiency, and wear and tear on the equipment and staff time/efficiency.

Ground Service Equipment:

Electrical Ground Service Equipment:

Currently, the Kent County Department of Aeronautics and several tenants (Alticor, Northern Air, American Eagle, Rapid Air) use electrically charged ground service equipment.

Natural Gas Ground Service Equipment:

Several Airport tenants currently operate Liquid Propane (LP) or Natural Gas (NG) type equipment.

Plan for Future Compressed Natural Gas Service Stations:

In its planning of the Airport, KCDA has worked with the local gas company to ensure that adequate high pressure infrastructure is in place for future Compressed Natural Gas (CNG) service stations.

Single Engine Taxi:

Several of the air carriers voluntarily utilize single engine taxiing to runways and aprons for fuel efficiency and emissions savings.

Planned Gate Power and Pre-Conditioned Air Emissions Reductions:

The Airport's program to add new and replace all existing Passenger Loading Bridges (PLBs) is underway. As part of this project, the Airport will provide both 400 Hertz Ground Power Units and Pre-Conditioned Air Units at each bridge location. Both of these pieces of equipment will provide significant emissions reductions. To date, eight new PLBs have been installed and five additional PLBs will be installed in the spring of 2011. KCDA has submitted for and received Voluntary Airport Low Emissions (VALE) Program funding for six PLB power and preconditioned air units from the FAA. KCDA also anticipates VALE grant funding for power and preconditioned air units on the remaining five PLB's in 2011.

Airfield Design Efficiency:

As noted above, during the design phases of every project, whether it be for airfield or landside development, Department staff and consultants review the designs for aircraft taxiway times and vehicle circulation times. The reduction of these times over the years can amount to significant fuel savings and emissions reductions.

Building Efficiency

In 1999 during design of the Terminal 2000 remodeling project the architect reviewed the project and determined it would qualify for LEED (Leadership in Energy and Environmental Design) certification. In 2005 during the design of the Terminal Area and Parking Improvement Program (TAPIP) the architect was instructed to consider LEED and sustainability options within the design.

Airport Energy Use

Lighting:

As part of the Terminal 2000 remodeling project and the 2008-2009 Terminal Area Parking Improvement Program (TAPIP) projects high efficiency windows were used to

introduce natural light and reduce energy requirements. Glass has also been used on the Terminal Drive canopy to allow light and reduce energy requirements. The canopy also allows for roadway protection from weather, reducing the use of salt and the need for snow plowing which also reduces emissions.

Lights Turned Off When Not Needed:

As a matter of practice lights are turned off when rooms are not in use. In that the top level of the parking structure is not currently being used in the winter, the lighting at this level has been turned off.

Photocells and Motion Detector Controls:

Photocells are used for exterior lighting. Concourse hold rooms also utilize motion detectors to eliminate unnecessary energy use.

Heating, Ventilation, and Air Conditioning Units:

In the Terminal, the Airport operates a computerized building management program to maximize efficiency of the heating, ventilation and air-conditioning systems. This system utilizes variable speed fans, pumps, thermostat adjustment, boiler, chiller, and other controls to optimize efficiency.

Computer/Electronic Equipment:

KCDA Information Technology staff continues to replace older, less efficient Cathode Ray Tube (CRT) monitors with higher efficiency Liquid Crystal Display (LCD) monitors. IT staff is also in the process of replacing all Flight Information Display System (FIDS) screens with newer, higher efficiency LCD monitors. Very few CRT monitors are being used by KCDA and Airport tenants.

WATER QUALITY

On November 26, 2008, the Kent County Aeronautics Board approved a contract with Limno Tech for Environmental Services. These Scope of Services include administration of the National Pollution Discharge Elimination System permit. The main task of the contract is to assist the Department with Michigan Department of Environmental Quality (MDEQ) permit negotiation. The NPDES permit application was submitted to MDEQ on April 1, 2009. KCDA received a new NPDES permit on January 1, 2011. The new NPDES permit requires that GFIA eliminate its contribution to the nuisance biofilm in the unnamed tributary to Thornapple River by October 1, 2015. To accomplish this goal, GFIA has contracted with Limno Tech to conduct a “Long-term Storm Water/Deicing Runoff Management Program Study”. The study is anticipated to be complete by September 2011. The study will evaluate alternatives and determine the most appropriate alternative to eliminate GFIA’s contribution to the biofilm in the unnamed tributary to Thornapple River. Following the study, consulting teams will be selected to design and engineer the necessary facilities to accomplish this goal.

Also: In accordance with the requirements of the Michigan National Pollution Discharge Elimination System (NPDES), the Gerald R. Ford International Airport’s current Storm Water Permit issued by the Michigan Department of Environmental Quality (MDEQ). As required by the permit, the Department of Aeronautics has an approved Storm Water Management Program (SWMP). The permit contains requirements necessary for the Department to comply with state and federal storm water pollution control laws. The program includes best management practices the Airport uses to address six measures for minimizing and preventing storm water

pollution, including: 1) Public Education Program; 2) Public Involvement and Participation; 3) Illicit Discharge Elimination Program; 4) Post-Construction Storm Water Management; 5) Construction Storm Water Control; and 6) Pollution Prevention/Good Housekeeping. In addition to the requirements, the permit also requires the elimination of GFIA contributions to the nuisance biofilm in the unnamed tributary to the Thornapple River.

Public Education Program:

The objective of this program is to educate the general and Airport job-related public of hazards associated with illicit discharges and improper disposal of waste at the Airport. An important part of this education is to encourage reporting of the presence of illicit discharges or improper disposal of materials into the Airport drainage system, and to educate the general and Airport job-related public about their responsibilities and stewardship to the watershed. These objectives are accomplished through regular training sessions in the areas of deicing, the Airport's Storm Water Pollution Prevention Program (SWPPP), Health and Safety (H&S) training; publications in the Airport newsletter; Illicit discharge reporting through Airport Operations staff; utilizing the Airport's website in promoting storm water awareness; and updating Airport Rules and Regulations.

Public Involvement and Participation:

The purpose of the public involvement and participation element of the SWMP is to encourage public input and participation in the GFIA storm water management program. This objective is accomplished through advertisement of the availability of the Airport's SWMP; and to pursue cooperation with local stream or watershed protection organizations through information sharing. These advertisements are placed in the Airport's newsletter and on the Airport's web site. In 2009, KCDA staff has been in contact with citizens concerned about Airport Deicing impacts on the environment. Information has been provided through email and, in one case, an airfield tour was provided.

Illicit Discharge Elimination Program:

The purpose of this element is to develop, implement, and enforce a program to prohibit and effectively eliminate illicit discharges, including discharges of sanitary wastewater, into the Airport's storm water drainage system. This objective is accomplished through the mapping of storm water outfalls; the dry-weather screening of all storm water outfalls through outfall inspections, monitoring results, and follow-up investigations as appropriate; the documentation of seepage of sanitary sewers or sewage disposal systems into the storm drainage system; the reporting of illicit discharges to MDEQ as appropriate; and to eliminate any verified illicit discharge connections from the Airport's storm drainage system.

Post-Construction Storm Water Management:

This objective is to develop a program to address storm water discharges into the drainage system from development and redevelopment projects that disturb greater than or equal to one acre. This objective is accomplished through design of development and redevelopment projects in a manner that does not result in an increased impact to receiving waters over current conditions; document storm water changes to policies and procedures; to track the number of proposed construction plans reviewed annually, and track the development of forms to document the review process.

Construction Storm Water Control:

This objective is to control storm water discharges from construction activity that results in land disturbances of greater than or equal to one acre, or disturb less than one acre but are part of a larger common plan of development or sale that would disturb one acre or more. This objective is accomplished through tracking the number of site plan reviews performed by GRR on an annual basis, including the number that require Soil Erosion and Sedimentation Control (SESC) permits; documenting inspections and follow-up actions.

Pollution Prevention/Good Housekeeping:

The objective of this goal is to operate a variety of Best Management Practices (BMPs) that will reduce and/or prevent pollutant runoff associated with Airport operations. This objective is accomplished through the documentation of SWPPP inspections, sewer maintenance, follow-up activities; documentation of storm system materials collected during maintenance activities; documentation of installation and proper labeling and new outfalls; and documentation of fertilizer applications.

The Airport's NPDES permit stipulates that where non-structural storm water control measures are not adequate to control contact between significant materials and storm water structural practices, BMPs shall be provided. BMPs implemented at GFIA include the following:

Roofed and Indoor Storage:

Indoor storage of significant materials eliminate contact with storm water. In general all landside pavement deicing materials, virgin and waste oil drums, sand and sodium formate used for airfield pavement deicing are all stored under roofing.

Underground Storage:

Underground Storage Tanks (USTs) are the primary mode for bulk storage of aircraft and vehicle/equipment fuels at GFIA. The nature of underground storage significantly reduces the potential for tank contents to impact storm water.

Secondary Containment:

All of the Airport's stationary Above Ground Storage Tanks (ASTs) containing fuel are equipped with secondary containment, consisting either of double-walled AST construction, or constructed diking. Additionally, drum storage of significant materials is required to be on a permanent or portable containment structure.

Catchbasin Inserts:

The KCDA Field Maintenance Division collects used Aircraft Deicing Fluids (ADF) from aircraft deicing areas. Catchbasin inserts prevent stormwater with spent ADF from entering directly into the Airport's stormwater drainage system. The inserts have a valve that is closed during aircraft deicing operations. Once operations have been completed, the materials are collected with vacuum collection unit trailers and stored for shipment and recycling.

Oil Water Separators:

There are several oil water separators on Airport grounds. They are located at the Northern Air fuel farm, KCDA Field Maintenance, KCDA ARFF station, each of the rental car service center sites adjacent to Patterson Avenue, and a new separator has been installed at the east fuel farm.

Contaminated Soil Cleanup:

In accordance with MDNRE requirements, the Gerald R. Ford International Airport disposes of contaminated soils discovered on airport property. In 2009, KCDA staff coordinated the removal of approximately 640 tons of contaminated soils found at an old corporate hangar site. Materials were stored on site, tested and finally removed to a certified landfill.

Wetland Mitigation:

Past construction projects at GFIA required both on and off-airport construction of wetland mitigation sites. Currently, GFIA has approximately 89 acres of mitigation wetlands with the majority (78 acres) being located in Lowell Township. These wetlands have been mitigated beyond baseline requirements.

Water Efficient Plumbing Fixtures:

As part of the Airport's Terminal 2000 remodeling, the design included incorporation of high efficiency plumbing fixtures in all public restrooms. Lavatory faucets have motion operated valves and urinals and closets have low volume water use for flushing.

Landscape Maintenance Practices:

As part of the Airport's landscape maintenance program, water requirements for landscape materials are monitored and the irrigation system is adjusted to optimize irrigation benefits to the landscape and eliminate unnecessary irrigation due to recent rainfall and other weather considerations. Department staff, in consultation with GRR's landscape contractor, has implemented an automated irrigation control system pilot program to reduce unnecessary irrigation.

Additionally, the landscape maintenance contractor is required by contract to mulch-in or collect and compost grass clippings while not allowing material into drainage ways including curb and gutters. The contract also prohibits fertilizers and weed control applications from being introduced into the storm drainage system by overspray/applications onto paved areas.

The Department has also reduced mowing and fertilizer applications in various locations for the 2011 thru 2013 landscape maintenance seasons.

AIRCRAFT NOISE

Noise Compatibility Program

In 1992 the Airport completed a FAR Part 150 noise study which produced the Airport's FAA approved Noise Compatibility Program (NCP) and FAA accepted Noise Exposure Maps (NEM). The NEMs were updated and accepted by FAA in 2000. The key components of the NCP are listed as follows:

Noise Abatement Advisory Committee:

A noise abatement advisory committee was established to review the implementation of the Airport's Noise Compatibility Program. The Committee was disbanded after completion of the NCP's home insulation program.

Noise Complaint Program:

In the 1990s, KCDA established a noise complaint program. This program includes recording and responding to all noise complaints. KCDA has received a few complaints each year over the past several years.

Continuation of Noise Abatement Departure Procedures:

Another component of the NCP is to encourage air carriers to continue to operate using voluntary noise abatement flight procedures. These procedures include noise abatement departure profiles, a voluntary departure route over the residential area to the Airport's northeast, and a voluntary departure route over the residential areas just east of the Airport adjacent to Thornapple River and south of 48th Street.

Seek a Greater Percentage of Stage 3 Aircraft:

In 1990, Congress passed the Airport Capacity and Noise Abatement Act. This act called for the elimination of commercial Stage 2 aircraft by January 1, 2000. Until that time, airports were required by their NCPs to encourage air carriers to use Stage 3 aircraft for their operations. This was done until all aircraft were compliant in January of 2000. Aircraft manufacturers continue to reduce aircraft noise through engine and aircraft fuselage design. Airlines continue to retire older, less efficient, noisy aircraft.

Comprehensive Land Use Planning and Zoning:

A key component of NCP is the encouragement of compatible land use. KCDA planning staff works closely with the Cascade Township and the City of Kentwood by participating in their Master Planning and Zoning study efforts. Staff also reviews all proposed development in Ada, Caledonia, Cascade, Gaines, and Grand Rapids Townships, and the cities of Grand Rapids, East Grand Rapids, and Kentwood. Every year Airport planning staff reviews hundreds of proposed developments for noise and height zoning compatibility.

Development of a Noise, Height, Safety Overlay Zoning District:

In 1995, the GFIA updated its Airport Zoning Ordinance to include land use guidelines to promote appropriate development to communities adjacent to the Airport. The resulting document was a noise, height and safety overlay zoning district. This document along with the Airport's current 2004 Master Plan was forwarded to local communities and provided to local libraries as required by Michigan statute.

Acoustical Treatment and Avigational Easement Program:

In 2002, KCDA completed the Residential Sound Insulation Program for the Airport. With the completion of this project, all homes within the Airport's 65 Day/Night Level (DNL) contour are now considered by the FAA to be compatible with airport operations. Additionally, in exchange for the home insulation GFIA was granted an avigational easement over the residential parcel.

Environmental Sustainability Opportunities

Scheduled Environmental Sustainability Efforts

2011	Waste Recycling Pilot Program - Implementation
2011	Long term Storm Water/Deicing Runoff Management Program Development Study

Solid Waste Recycling

Track and Report Recycling Efforts:

The development of a consistent waste tracking report would allow staff and management to track changes in recycling over time. Staff has begun tracking tenant recycling efforts and will further refine the tracking initiative. Also, the report would be used to evaluate the recycling program and assist in the publicizing of the Airport's sustainability efforts. The maintaining and tracking of data will also aid in evaluating long term trends and in producing environmental reports.

Expand Recycling Programs:

As demonstrated above, KCDA continues to pursue its mission of being environmentally sensitive through various recycling efforts. KCDA recognizes there are other waste streams which are at this point not included in the recycling program, most notably solid waste from the airlines. KCDA is currently investigating opportunities for airlines and other tenants to participate in a cardboard and paper recycling program.

Buy More Recycle/Green Content Goods:

As with any successful recycling programs, there must be a market for the recycled materials. As such, the Airport continues to investigate the opportunity for, and encourage the use of recycled products.

Encourage Recycling in Construction Projects:

As noted earlier, a vast majority of materials from airfield construction is reused and/or recycled. This is standard and efficient practice by the contractors who are involved in the construction projects. To further facilitate recycling on Airport construction projects, language can be included in contract documents encouraging material reuse and recycling. Much of the airfield lighting from construction projects is metal (mostly aluminum) and can be recycled for compensation with little effort. KCDA staff will discuss possibilities of changing specifications to include a recycling component to encourage expanded contractor participation.

Surplus Equipment Sales:

As part of the waste audit opportunity, surplus equipment sales will be investigated for program expansion.

Computer/Electronics Recycling:

As previously noted, currently, KCDA, in cooperation with Kent County Purchasing, recycles a portion of the obsolete computer equipment. Additionally, the Kent County Department of Public Works accepts used computer equipment at several locations. GRR has an opportunity to further evaluate additional computer equipment recycling opportunities. Many Airport tenants have corporate programs which recycle used or

outdated computer equipment. One tenant donates used phones to adult care centers to be used. Electronic lost and found items are also donated to assistance/service organizations for reuse.

Paper/Plastic/Metal Recycling:

In 2011 KCDA will begin comingled recycling in the Terminal Building and on the concourses. KCDA will evaluate the recycling efforts for efficiency and determine the necessary steps to implement a comprehensive program.

The air carrier tenants of GRR generate considerable paper waste as they cycle their catalogs and other magazine type documents through aircraft. Currently, air carriers discard these publications roughly every two weeks. KCDA will explore expanding recycling efforts to include magazines, the air carriers will be encouraged to recycle their publications through this program. (See Scheduled Environmental Sustainability Efforts)

In the early 1990s, GRR initiated a recycling program for papers and cardboard. The program was unsuccessful because metal and plastic wastes were being discarded into the paper and cardboard recycle bins. GRR, in cooperation with HOST is investigating an opportunity to establish a cardboard and paper recycling program that may include opportunity for air carriers to recycle airline magazines.

Air Quality

Emissions reductions opportunities:

Encourage Cleaner Construction Vehicles and Equipment:

Through service contracts and in construction specifications for Airport projects, contractors can be encouraged to utilize cleaner construction vehicles and equipment. An example would be utilizing newer or more recent diesel equipment. Also, contractors are utilizing new GIS leveling equipment, dozers, excavators and graders. This equipment is much more efficient and reduces emissions.

Encourage a Clean Taxi Cab Program:

Currently, MetroCab operates the Taxi service at GRR. MetroCab operates a Compressed liquid propane program in the Detroit Metropolitan Area and at Detroit Metro Airport. KCDA is actively encouraging MetroCab in their efforts to place a new L.P. filling station at their local service facility.

Encourage Clean/Green Rental Cars:

As noted, all of the rental car agencies at GRR offer patrons green vehicles (E85 or Hybrids). GRR continues to encourage these agencies to continue to expand their fleets with green vehicles.

Encourage Non-Idling in Taxi Cab Queuing Areas:

As part of its emissions reductions strategy, GRR will encourage non-idling in the taxi queuing lane. In the future, GRR may require that taxis wait with engines off except in cold weather.

Encourage Additional Mass Transit Use:

As previously noted, GRR has connections to many locations within the Grand Rapids metropolitan area through The Rapid. GRR seeks to encourage additional use of this system for both employees and Airport users.

Encourage Ride Sharing for Employees:

GRR can also promote and facilitate ride sharing among all airport employees. Several employees are currently reaping the benefits of ride sharing.

Educate Motorists:

GRR will continue to educate airport users concerning airport vehicle circulation and way-finding through signage and publications.

Airside Vehicle Emissions

Airport Vehicle and Maintenance Equipment:

GRR will continue to work in cooperation with Kent County Purchasing to evaluate appropriate equipment and review various energy saving equipment alternatives and make purchases accordingly.

Refine Employee Equipment Trip-Reduction Program:

As part of its standard operating procedure, KCDA will continue to coordinate efforts to reduce and eliminate unnecessary equipment trips.

Ground Service Equipment:

Encourage CNG, LP, and Electrical Ground Service Equipment:

GRR will encourage all tenants to evaluate efficiencies obtained through the use of CNG, LP, and electrical ground service equipment.

Construction of Compressed Natural Gas/Power dispensing stations:

GRR will investigate as part of the next Airport master plan update possible locations for CNG and Power service stations to be used by the Airport and its tenants.

Airside Aircraft Emissions

Encourage Single Engine Taxi:

GRR will continue to encourage air carriers to utilize single engine taxi operations to reduce fuel consumption and emissions.

Building and Grounds Efficiency

As mentioned previously, KCDA staff takes an active role in the planning and operation of all facilities on Airport grounds. GRR will continue to select and utilize efficient civil, architectural, electrical, structural, mechanical, and communications technologies in the planning, development and operation of existing and new facilities. The continued use of new technologies will provide more efficient lighting, heating, ventilation, and air conditioning systems.

Water Quality

GRR will continue to be sensitive to water quality impacts and utilize appropriate design to eliminate or reduce impacts.

Wetland Mitigation Off-Site:

Future development at GRR will require development of existing wetland areas. GRR will continue to construct and maintain off-site wetlands as required by the Michigan Natural Resources and Environmental Protection Act and permitted by Michigan's Department of Environmental Quality.

Storm Water Management:

GRR will continue to utilize best management practices as required in its National Pollution Discharge Elimination System storm water permit issued by the Michigan Department of Environmental Quality Surface Water Quality Division.

Noise

GRR has implemented all elements of its NCP. It should be understood that the greatest strides in aircraft noise reduction will come through research and design efforts by NASA, FAA, and aircraft and jet engine manufacturers. Manufacturers estimate that as many as a 14-decibel reduction in aircraft and engine noise is still achievable. This is a significant noise reduction.