2018 Environmental Sustainability Report

Gerald R. Ford International Airport Authority

GERALD R. FORD INTERNATIONAL AIRPORT

Prepared by:

Anna R. Keller
Gerald R. Ford International Airport Authority
Engineering Intern

Roy D. Hawkins
Airport Planning Engineer
Gerald R. Ford International Airport Authority

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INTRODUCTION

The Gerald R. Ford International Airport (GFIA) is located approximately seven miles southeast of the central business district of Grand Rapids, Michigan. GFIA is owned by Kent County and is operated by the Gerald R. Ford International Airport Authority (GFIAA) through the Gerald R. Ford International Airport Board. GFIA occupies land totaling approximately 3,358 acres of which 236 of those acres are a wetland mitigation site in Lowell Township, Kent County, Michigan. The airport is classified as a small hub primary 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 sound and environmentally sensitive manner.

PURPOSE

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

Gerald R. Ford International Airport Authority's Mission Statement

These efforts are built around the Gerald R. Ford International Airport Authority's mission statement:

> The Gerald R. Ford International Airport Authority's mission is "to create an exceptional travel experience for our passengers, and growth and prosperity for all of West Michigan."

Gerald R. Ford International Airport Authority Values

Supporting the Authority's Mission Statement are the Authority's Values which include: Safety, Our Customers, Accountability, Respect, Integrity, New Ideas, and Growth.

The Authority 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 Gerald R. Ford International 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 November 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, GFIAA 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 voluntary 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 project and the Concourse B apron expansion including Concourse B (Gates B7 and B8) and these projects also received FAA Categorical Exclusion approval.

2012/13 Stormwater/Deicing Management Program Environmental Assessment:
In 2011 GFIA was granted a National Pollution Discharge Elimination System (NPDES) Permit which required that GFIA eliminate its contribution to nuisance biofilms in a tributary to the Thornapple River. The tributary is the outfall thru which the majority of the airport's storm water flows. The selected means to eliminate the nuisance biofilm from the tributary was to redirect the outfall east bypassing the tributary. The existing airfield storm water would be directed east to a new detention basin and from there thru a Natural Treatment System (NTS) and on to the river. Because the project will be paid for with federal funds, the Airport is required to complete and Environmental Assessment. The assessment analyzed the impact of the proposed project upon the environment. Multiple environmental impact categories were evaluated. The categories included Air Quality; Architectural, Archeological and Cultural Resources; Biotic

Resources; Coastal Resources; Compatible Land Use; Farmlands; Fish, Wildlife, and Plants; Floodplains; Hazardous Materials; Light Emissions and Visual Impacts; Natural Resources and Energy Supply; Noise; Secondary Induced Impacts; Socioeconomic Impacts, Environmental Justice and Children's Health and Safety Risks; and Wild and Scenic Rivers 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.

2018 Gerald R. Ford International Airport Master Plan Update:

After completion of the majority of proposed development outlined in the 2004 Master Plan Update, the Airport began updating its Master Plan in 2017. 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 and noise analysis were performed for the Terminal (Concourse A) and Apron Expansion projects.

Authority Organization and Environmental Management Systems (EMS)

Each of the Authority's divisions have a role in the environmental sustainability efforts of GFIA. 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 goal 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 goal, the Facilities Division is split into several subdivisions which include Engineering and Planning.

Engineering and Planning:
The Engineering and Planning staff are GFIAA'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 GFIA's National Pollution Discharge Elimination System permit, MS4 Permit and other permits necessary for construction projects. They work with all selected consultants to design and construct efficient and environmentally sensitive facilities which meet Michigan Department of Environment, Great Lakes, and Energy (MDEGLE) and FAA standards. They submit all required environmental review documents to appropriate agencies for review and approval. They coordinate all GFIAA master

plan and environmental study efforts with required Federal, State, and local planning officials and the general public as required by law.

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

Facilities staff along with administrative staff coordinate and train all airport and tenant staff in the use of all airport Underground Storage Tank (UST) fueling systems in accordance with new Environmental Protection Agency (EPA) and MDEGLE UST rules. The goal of this training is to instruct all tenant users of GFIAAGFIA UST fuel systems with regard to the operation of these systems and appropriate responses to spills, leaks and overfills.

Airport Finance and Administration Division:
The Finance and Administration Division's goal is to provide financial accounting, general administration, parking and ground transportation, property management, and clerical support to the Authority. In an effort to enhance and streamline responses to GFIA staff, and tenants. To accomplish this goal, 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 permits, environmental reviews, consultants, construction projects and that funding for GFIA's sustainability efforts is budgeted.

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

Property Management/Development:
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:
Information Technology staff are responsible for the maintenance of the airport's UST fuel system monitoring equipment which conducts analysis that will determine if the system leaks.

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, various studies, including environmental assessment, and master plan update

projects. As noted, Administration staff plays a key role in the training of airport and tenant staff as operators of the Airports UST fuel systems.

Airport Public Safety and Operations Division:
The Public Safety and Operations Division's goal 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 five subdivisions; Airport Law Enforcement, Aircraft Rescue and Fire Fighting (ARFF), Airport Operations, Building Maintenance, and Field Maintenance. Each plays a part in the Airport's environmental and sustainability efforts.

Airport Law Enforcement:
The Airport Law Enforcement staff are responsible for the investigation of potential violations to and enforcement of GFIA's 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 various tenant equipment and facilities.

Airport Operations:
The Airport Operations staff is responsible for ensuring the operational safety of GFIA in accordance with Federal Requirements. This task includes airfield inspection, and reporting of hazardous material leaks, spills, and overfills. 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.

Building Maintenance:
Building Maintenance staff ensures that all building electrical, heating, ventilation, and air conditioning systems and equipment are operating efficiently. Building Maintenance staff also take the lead in looking for energy efficiencies in the building, lighting, and HVAC systems. They also maintain all airfield lighting and signage and are responsible for reuse of existing lighting and signage from new project construction. They also coordinate the maintenance of the Airport Sanitary Sewer Lift Stations to ensure there are no illicit discharges. Staff works to coordinate rebates for lighting and HVAC upgrades.

Field Maintenance:
Field Maintenance staff ensure that all Authority 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 grounds to FAA standards as well as monitoring the use of chemicals used in snow & ice control operations.

Airport Marketing and Communications:

The Airport Marketing and Communications group's goal 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, specialty publications, and social media platforms. They are also responsible for conducting news media relations that relate to the Airport's environmental issues.

Sustainability Achievements and Opportunities

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

Development and Sustainability Achievements:
The following summarizes the Authority'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 necessitate the use of paved surfaces to accommodate aircraft, trucks, maintenance, and personal vehicles. In the construction and maintenance of these surfaces, a majority 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 airport projects. When reconstruction occurs, paved materials are removed for recycle. Concrete pavement is removed and is crushed for reuse, and asphalt pavements are 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. Even the re-steel in concrete pavement is shipped off site by the contractors for recycling.

When feasible, GFIAA requires that excess excavated material from projects be used as controlled fill materials on adjacent areas reserved for future airport 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 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. Contractors remodeling various buildings are recycling significant quantities of removed materials, including electrical conduit, electrical wires, plumbing piping, wood trim, wood and metal studs, HVAC duct work, insulation, and glass. Minimal amounts of materials being removed enter the waste stream.

Additionally, GFIAA 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 and other materials from entering the pavement sub-base materials extending pavement life.

Reductions in Plastic Water Bottles:
In 2012 GFIAA installed several drinking fountain water bottle filling stations for employee and passenger use. These stations will reduce the number of plastic drinking water bottles. Based on review of the fill stations, approximately 200,000 less water bottles have been used.

Recycling Program:
In 2018, working with Kent County Department of Public Works, GFIAA initiated a recycling program for passengers and staff by placing recycle bins for paper and plastics throughout the terminal building. In fact, the bins are being recycled from the Detroit Metro Airport and the bins themselves are made from recycled products. The Authority has seen an increase in recycling by passengers.

Recycled Content (Green) Product Use:
Currently GFIAA and most tenants utilize recycled/green products. Many office products, such as copy paper, are available in recycled/green form.

Cardboard/Paper Recycling:
Currently GFIAA 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 and less paper documents for preferred members. Rental car agencies are using more cloth towels and less paper towels. Administratively, they also use less paper through efficient technology use.

Retail magazine and newspapers which are not purchased are returned and recycled through the magazine supplier. Currently, airlines are recycling their unused magazines and catalogs when replaced with new.

Surplus Equipment Sales:
For many years GFIAA 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. Kent County also has established an intranet (Jonslist_surplus) for exchange of goods or services between departments. GFIAA uses this listing service.

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 and Building Maintenance have 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 returned for core charge. 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. 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 GFIA 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. GFIAA, 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, has a recycling program for Starbucks coffee grounds.

Air Quality

Landside Vehicle Emissions

Multi-modal Access to GFIA:
Currently GFIA is served by The Rapid, the region's transit provider. The Rapid makes several trips to and from the downtown Grand Rapids business district. A transportation corridor from the Grand Rapids Business district to the Airport has been identified for possible future development.

In 2006 and 2007 GFIAA 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.

GFIAA continues to work with MDOT to enhance road signage providing for more efficient access to the airport.

Emissions:

In 2012 and 2013, GFIAA in cooperation with the Kent County Road Commission (KCRC) reviewed and approved the construction of the relocated South Complex Drive. The relocation of this road to align with 40th Street on the west side of Patterson Avenue, created an opportunity to install a traffic signal that results in much safer access for vehicles traveling east on 40th Street and west on Tim Dougherty Drive. Additionally, the intersection will reduce emissions due to the reduced waiting time for the KCRC road plow equipment and allow that equipment quick access to do their job of clearing the roads of snow in the winter season.

In 2013, GFIAA installed a bike rack in the lower level of the parking deck for employees and airport users.

Maintenance of Vehicles and Equipment:
As noted, GFIAA 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 GFIA offer either E85 (flex fuel) or Hybrid vehicles to patrons. Each of these agencies plans to continue to expand their green fleets. Currently, several agencies are reviewing electric vehicle operations. 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. This facility now has two credit card exit lanes. 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 was expanded to accommodate a total of 30 cars.

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.

In 2012 Metro Cab completed the installation of their L.P. filling station for Grand Rapids operations. The majority of their vehicles have been converted for L.P. use.

Airside Emissions
Equipment Trip-Reduction:
Airport Field Maintenance staff has a program to reduce emissions through efficient transportation of equipment operators to and from work areas 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 or truck 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, GFIAA and several tenants (Alticor, Landmark Aviation, American Eagle) 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, GFIAA has worked with the local gas company to determine if adequate infrastructure is in place for a possible future Compressed Natural Gas (CNG) service stations. It has been determined that high pressure is available in the area.

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

Gate Power and Pre-Conditioned Air Emissions Reductions:
The Airport's program to add new and replace all existing Passenger Loading Bridges (PLBs) has been completed. As part of this project, the Airport provided both 400 Hertz Ground Power Units (GPU) and Pre-Conditioned Air Units (PCA) at each bridge location. Both of these pieces of equipment will provide significant emissions reductions. GFIAA has submitted for and received Voluntary Airport Low Emissions (VALE) Program funding for eleven PLB power and preconditioned air units from the FAA. All fifteen aircraft gate positions currently have new PLBs and associated GPUs and PCA units.

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. In 2018, the Airport began reconstruction of its main air carrier apron. The project included replacement of existing apron lighting fixtures with new LED lighting fixtures.

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. In 2012 GFIAA placed motion detectors on lights in the Aircraft Rescue and Fire Fighting (ARFF) truck bays.

Heating, Ventilation, and Air Conditioning Units (HVAC):
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. In 2013, the Department improved computerized controls for the HVAC systems at the Field Maintenance building. GFIAA continues to expand the HVAC system and make modifications to increase efficiency.

Computer/Electronic Equipment:
Information Technology staff has completed the replacement of all, 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.

WATER QUALITY

On November 26, 2008, the Gerald R. Ford International Airport 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. GFIA 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 contracted with Limno Tech to conduct a "Long-term Storm Water/Deicing Runoff Management Program Study". The study was completed and submitted to MDEQ by the September 2011 deadline. The study evaluated alternatives and determined the most appropriate alternative to eliminate GFIAs contribution to the biofilm in the unnamed tributary to Thornapple River. The alternative selected was to reroute stormwater through a new Natural Treatment System (NTS) (treating the water) and then route the water directly to the Thornapple River.

In 2012 GFIAA contracted with Prein & Newhof to design a new outfall redirecting storm water from the airport to the Thornapple River which would bypass the previous outfall to a tributary that leads to the Thornapple River. Also included in the design will be sediment control, trash filtering, and a storm water treatment system, all prior to entering the Thornapple River. Also, in 2012, GFIAA contracted with CH2M Hill to conduct an Environmental Assessment (EA) for the storm water outfall project. On October 1, 2013 the FAA issued its environmental decision a Finding of No Significant Impact (FONSI) for the project. Construction on the storm water project began on the evening of October 2, 2013 and should be complete by October 1, 2015.

In 2013, GFIAA working with MDEQ completed an updated NPDES permit to allow storm water from the airport to flow directly to the Thornapple River via the new outfall through the sediment control, trash filtering and storm water treatment system components of the project. The modified NPDES Permit was issued on August 1, 2013.

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 GFIAs contributions to the nuisance biofilm in the unnamed tributary to the Thornapple River. Currently, GFIAA has prepared an NPDES – Municipal Separate Storm Sewer System (MS4) application and submitted the application to MDEGLE.

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. Since 2009, GFIA staff has been in contact with citizens concerned about Airport Deicing impacts on the environment. One major effort to involve the public was the creation of a Stakeholders Advisory Committee (SAC) as part of GFIA's alternatives evaluation process to eliminate nuisance biofilm in the unnamed tributary to the Thornapple River. The SAC was formed to provide members of the airport community, regulatory agencies and other community organizations the opportunity to advise GFIA and its consultants on their issues regarding development of the airport's long-term storm water and deicing runoff management program. It should be noted that the creation of this advisory committee was not a specific requirement of the NPDES permit. GFIA choose to create the committee for the sole purpose of obtaining public input for the study process. GFIA has extended the

committees involvement through project construction. For these efforts, the Gerald R. Ford International Airport received the 2014 ACI-NA (Airports Council International-North America) Environmental Award for "Outreach, Education, and Community Involvement". GFIA continues to offer presentations to community groups and meet with residents to discuss the airport deicing impacts. This environmental project is the most recognized project in airport history.

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. The Airport has no known illicit discharge connections to the 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 that would disturb one acre or more. This objective is accomplished through tracking the number of site plan reviews performed by GFIA 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 increases the potential for tank contents to impact storm water. In 2012, USEPA and MDEQ established new rules for owners and operators of UST systems for regulated hazardous substances (gasoline, diesel and aircraft fuels). GFIA staff completed required necessary training and certification as the owner and operator of several UST systems. As required under these new rules, GFIA's Certified Class A/B operator established a training program for all users of the GFIA UST fueling systems. GFIA and tenant staff have been trained in the use and operation of these facilities. The training stressed the importance of stopping, containing and reporting of leaks, spills, and overfills of these materials. Training also gave an overview of the operation of the fueling systems and the various functions of each fueling system component. GFIA continues to train new staff and tenant employees on the use of UST systems.

In 2019, GFIA removed the only remaining abandoned UST with and MDEQ Clean Closure. This tank was the original fuel tank for the FAA's control tower generator. The soils around the tank were tested for contaminants and found to be negative. The tank was removed and disposed of in accordance with environmental rules and regulations. GFIA continues to investigate the use of Above Ground Storage Tanks (ASTs) for the replacement of existing USTs. Currently, there are two AST facilities at the West Fuel Farm with plans for a new fuel farm facility to be above ground.

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 GFIAA Field Maintenance Division collects used Aircraft Deicing Fluids (ADF) from aircraft deicing areas. Catch basin 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 deicing operations have been completed, the materials are tested. If acceptable, the materials are collected with vacuum collection unit trailers and stored for shipment and recycling.

Terminal Apron ADF Collection System:
In 2018, one of two automated ADF collection systems was installed to collect spent ADF from the terminal apron. The system automatically analyzes the

percent of ADF in the apron runoff and if the runoff is above the determined limits of concentration is stored in underground tanks and sent to Romulus, Michigan for recycling. If the concentration is below the predetermined limit it is sent to the NTS for treatment. The east side ADF collection system will be operational in 2019.

Oil Water Separators:
There are several oil water separators on Airport grounds. They are located at the Landmark Aviation fuel farm, GFIA Field Maintenance, GFIA Parking Structure, GFIA 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 site. Most of the corporate hangars and all of the FBO facilities utilize oil/water separators at their facilities.

Contaminated Soil Cleanup:
In accordance with MDEQ requirements, the Gerald R. Ford International Airport disposes of contaminated soils discovered on airport property. In 2009, GFIA staff coordinated the removal of contaminated soils found at an old corporate hangar site. Materials were stored on site, tested and finally removed to a certified landfill. In 2014, as part of the Stormwater Drainage Improvements and Treatment project, an old Farm UST was discovered and removed in accordance with applicable environmental laws. Contaminated soils at the site were also excavated and removed.

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. As part of the stormwater drainage improvement & treatment project, GFIA was required by FAA and MDEQ to mitigate wetland impacts by purchasing 2.15 acres of wetland mitigation credits from the Parma Michigan Wetland Bank which is located within the Grand River watershed.

Currently, GFIAA is working with Georgetown Township to create wetland and stream mitigation on township properties. As part of the Airport apron reconstruction project, the airport is planning to fill approximately 3.49 acres of wetlands and 1,071 linear feet of stream allowing for a future corporate development area. Airport consultants are studying the feasibility of these efforts. Should the study prove to be feasible, the necessary wetlands and stream enhancement will be constructed per MDEGLE requirements.

In 2016, GFIAA completed a wildlife hazard assessment which identified the need to remove wetlands on airport property and enclose stormwater drainage ditches. In 2018, GFIAA, in their master plan update process, identified three major wetlands to be mitigated. The intent of this mitigation is to remove wildlife habitat and provide additional development area. GFIAA, in their planning process for various airport projects, continues to investigate opportunities to remove wildlife habitat (wetlands and drainage ditches). For each project, the Authority will study the necessity for removing wetlands and stormwater drainage ditches.

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. The Authority continues to investigate the use of high efficiency fixtures in each remodeling or new construction project. 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.

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 2020 landscape maintenance seasons.

In 2019, the GFIAA installed new pump controllers for the airports irrigation system. The controllers allow GFIA staff to remotely monitor irrigation efforts. The new controllers are connected to the National Weather Service GRR station data and each controller has its own rain gage, meaning the areas are only watered when needed. For example, if a rain event has occurred no watering will take place. The new system is expected to reduce irrigation water usage by 50%.

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, GFIAA established a noise complaint program. This program includes recording and responding to all noise complaints. Each year, GFIAA receives a few noise complaints.

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 areas 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. GFIAA planning staff works closely with the Cascade Township and the City of Kentwood by participating in their Master Planning and Zoning study/update 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, GFIAA 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

2019	GFIAA will complete construction of a stormwater collection system designed to capture residual deicing fluids, resulting in overspray of aircraft during deicing operations. The system features an automated analysis tool which will trigger collection of stormwaters with higher levels of deicing fluid. The stormwater will be captured in large underground tanks. When the tanks are full, materials will be pumped out and trucked to Romulus, Michigan for recycling.
2019-2025	GFIA will continue to evaluate sustainable opportunities for all construction projects.

2020 As previously noted, should feasibility analysis prove acceptable for the wetland and stream mitigation efforts in Georgetown Township, construction will begin.

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 as time allows 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, GFIA continues to pursue its mission of being environmentally sensitive through various recycling efforts. GFIA recognizes there are other waste streams which are at this point not included in the recycling program, most notably solid waste from the airlines. In 2019, GFIAA rolled out a comprehensive mixed recycling program utilizing recycled recycling containers made from recycled materials from Detroit Metropolitan Airport. GFIAA continues to investigate opportunities for airlines and other tenants to participate in a cardboard and paper recycling program. GFIA is currently designing modifications to the terminal loading dock which will provide for additional recycling dumpsters.

Buy More Recycle/Green Content Goods:
As with any successful recycling program, there must be a market for the recycled materials. As such, GFIAA continues to investigate the opportunity for, and encourage the use of recycled products. In 2014, GFIAA began using cups with higher recycle content percentage.

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. In recent years, contractors have taken it upon themselves to recycle the maximum amount of materials in building construction and remodeling 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. GFIAA staff will discuss possibilities of changing specifications to include a recycling component to encourage expanded contractor participation. Encourage tenants to recycle materials when remodeling facilities.

Surplus Equipment Sales:
As part of the waste audit opportunity, surplus equipment sales will be investigated for program expansion. Currently, outdated equipment is recycled/sold to other users.

Computer/Electronics Recycling:

As previously noted, currently, GFIAA, in cooperation with Kent County IT and Kent County Purchasing, recycles a portion of the obsolete computer equipment. In 2014, GFIAA returned 7,688 lbs. of computer electronic equipment for recycling. Additionally, the Kent County Department of Public Works accepts used computer equipment at several locations. GFIAA 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:
The air carrier tenants of GFIA generate considerable paper waste as they cycle their catalogs and other magazine type documents through aircraft. Air Carriers will continue to be encouraged to recycle their publications through their program.

Air Quality

Emissions reductions opportunities:

New Technology Charging Systems:
GFIAA will investigate new technology charging systems for electric equipment and vehicles. Wireless Electric Vehicles (EV) charging stations are being developed by various manufacturers.

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. Some contractors have purchased the newer, lower emission equipment. Also, contractors are utilizing new GIS leveling equipment in their dozers, excavators and graders. This equipment is much more efficient and reduces emissions.

Encourage Clean/Green Rental Cars:
As noted, all of the rental car agencies at GFIA offer patrons green vehicles (Hybrids). GFIA continues to encourage these agencies to continue to expand their fleets with green vehicles. Several of the agencies have begun discussion on including electric hybrids in their national systems.

Encourage Non-Idling in Taxi Cab Queuing Areas:
As part of its emission reduction strategy, GFIAA will encourage non-idling in the taxi queuing lane. In the future, GFIAA may require that taxis wait with engines off except in cold weather.

Encourage Additional Mass Transit Use:

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

Encourage Ride Sharing for Employees:
GFIAA can also promote and facilitate ride sharing among all airport employees. Several employees are currently reaping the benefits of ride sharing.

Educate Motorists:
GFIAAA will continue to educate airport users concerning airport vehicle circulation and way-finding through signage, publications, and radio announcements.

Airside Vehicle Emissions

Airport Vehicle and Maintenance Equipment:
GFIAA 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, GFIAA will continue to coordinate efforts to reduce and eliminate unnecessary equipment trips.

Ground Service Equipment:

Encourage CNG, LP, and Electrical Ground Service Equipment:
GFIAA 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:
GFIAA 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:
GFIAA 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, GFIAA staff takes an active role in the planning and operation of all facilities on Airport grounds. GFIAA 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
GFIAA 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 GFIA may require development of existing wetland areas. GFIAA will continue to maintain off-site wetlands as required by Michigan's Department of Environment, Great Lakes, and Energy.

Storm Water Management:
GFIAA will continue to utilize best management practices as required in its National Pollution Discharge Elimination System storm water permit issued by MDEGLE.

Noise

GFIAA 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.