APPENDIX E: RECYCLING & SOLID WASTE

Introduction

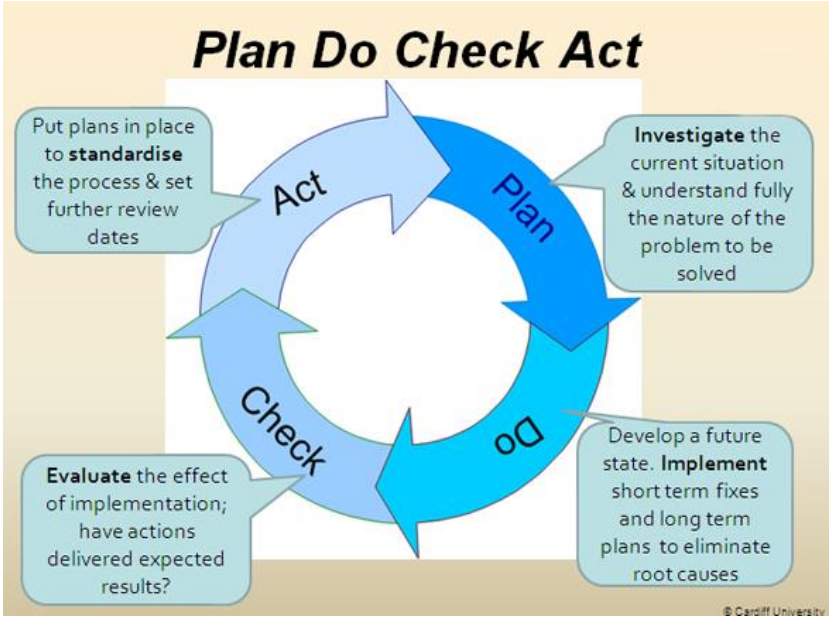
In the FAA Modernization and Reform Act of 2012 (Public Law 112-95), the Airport Improvement Program language was amended (49 USC Section 47106(a)) to include the evaluation of airport solid waste recycling. The change stipulates that the following issues will be addressed:

- Feasibility of Solid Waste Recycling at the Airport,
- Minimizing the Generation of Solid Waste at the Airport,
- Operation and Maintenance Requirements Related to Solid Waste,
- Review of Waste Management Contracts, and
- Potential Cost Savings or Generation of Revenue from Solid Waste Recycling.

To accomplish these objectives this appendix will include:

- Examination of Existing Solid Waste Handling and Recycling
    - Existing Practices including Operations and Maintenance Issues
    - Existing Waste Management Contracts
- Examination of Recycling Opportunities
- Alternatives to Minimize Generation of Solid Waste and
- Cost Savings/Revenue Potential from Recycling

The FAA released a memorandum on September 30, 2014 titled *Guidance on Airport Recycling, Reuse, and Waste Reduction Plans* that provides technical guidance on preparing airport recycling plans. The FAA also published Recycling, Reuse and Waste Reduction at Airports – A Synthesis Document on April 24, 2013. Please note, a Solid Waste Recycling plan is one element of an Environmental Management System (EMS). This appendix will not address all elements of an EMS but information regarding an EMS can be found in FAA AC 150/5050-8, *Environmental Management Systems for Airport Sponsors*. The EMS concept follows the "Plan, Do, Check, Act" model which will also be the way the Solid Waste Recycling can be continually evaluated and improved.



The content and scope of a solid waste recycling plan can vary based upon availability of information and the unique environment at every airport. This appendix represents a baseline review of existing practices and opportunities. A comprehensive analysis of components such as quantity and composition of waste, program performance, and financial analysis would be completed during a waste audit.

Existing Solid Waste Handling & Recycling

There are four types of waste typically generated at an airport. These are: 1) Municipal Solid Waste, 2) Construction/Demolition Waste, 3) Compostable Waste, and 4) Deplaned Waste. These are further described in **Table 1**.

Table 1 – Waste Types

Waste Type	Description
Municipal Solid (MSW)	Consists of everyday items that are used and discarded. Recyclable MSW at airports includes, but is not limited to, aluminum and steel, glass bottles and containers, plastic bottles and containers, packaging, bags, paper products, and cardboard.
Construction /Demolition (C&D)	Generally categorized as MSW. C&D debris is any non-hazardous solid waste that results from land clearing, excavation, or construction, demolition, renovation, or repair of structures, roads, and utilities. C&D debris includes, but is not limited to, concrete, wood, metals, soil, bricks and masonry material, asphalt, rock, stone, gravel, sand, roofing materials, drywall, carpet, plastic, pipe, rocks, earthwork, land-clearing debris, cardboard, and salvaged building components. In some instances, C&D debris requires special handling and may be subject to special requirements. Examples include tar-impregnated roofing materials and asbestos- containing building materials.
Compostable Waste	Generally categorized as MSW. They are sometimes referred to as green waste and food waste. Green waste consists of tree, shrub, and grass clippings, leaves, weeds, small branches, seeds, pods, and similar debris generated by landscape maintenance activities. Food waste is food that is not consumed, or generated during food preparation activities and discarded.

Deplaned Waste	A type of MSW removed from passenger aircraft. These materials include bottles and cans, newspaper and mixed paper, plastic cups and utensils, food waste, food-soiled paper, magazines, unconsumed or surplus food, and paper towels.

Source: FAA Guidance on Airport Recycling, Reuse and Waste Reduction Plans, September 30th, 2014

Existing Practices

At Fairmont Municipal Airport (FRM), there are three 55-gallon barrels located in the terminal building, maintenance building and main hangar. Tenants in other hangars are responsible for their own waste disposal.

Existing Waste Management Contracts

The disposal of waste is a specialized service not regularly performed by airports. For the Airport, there are different operators who handle waste such as municipal solid waste, cardboard, grease, filters, petroleum, and others. City of Fairmont collects solid waste upon request, usually every 2-3 weeks using city trucks. J&J Waste Oil collects from two 55-gallon oil barrels upon request.

Airport Efforts to Minimizing the Generation of Solid Waste

Efforts have been underway to reduce solid waste at the Fairmont Municipal Airport. When construction projects occur, any debris that can be reused in the project such as recycled pavement is reused when possible.

Recycling Opportunities

The first option for airports regarding recyclables depends upon private/public parties that accept certain types of recyclable material in the nearby area. **Table 2** lists the entities that exist in the surrounding area that accept certain types of recyclable materials.

Table 2 – Area Recyclers

Contractor	Type of Waste	Location(s)	Collection or Drop Off	Revenue Potential
Hometown Sanitation	Metal, Cardboard, Paper, Glass, Plastic	1031 Fairview Ave, Fairmont	Collection, Drop Off	Minimal

Source: KLJ Analysis

Alternatives to Minimize Solid Waste Generation

The common theme for this is “Reduce, Reuse, Recycle”.



Promoting Reduce, Reuse, Recycle

This is more than marketing. It is promoting, incentivizing, and eliminating barriers to enable ‘reduce, reuse, recycle’ to be common practice.

The airport currently has plans to install LED lights on the airfield next year. Most buildings have LED lights with the exception of two older T-hangars.

Concrete from construction projects is reused and repurposed, while metal is salvaged and sent to the city scrap metal pile.

Cost Savings/Revenue Potential from Recycling

The potential for cost savings or revenue potential is dependent upon the value of the recycled commodity in the market, the volume of the waste type generated and the ability to manage the waste collection to prevent contamination.

When developing a recycling program, it is important to note that all planning for recycling must start with the disposal or the recycling destination in mind. If a destination facility is capable of efficiently sorting the comingled recyclable materials than a single-stream program would be possible. This allows all allowable recyclables to be deposited into a single bin by the depositor. Single stream recycling garners the highest participation rate from the population and has the biggest reduction in products going to the landfill. However, if the destination does not have the means to efficiently sort comingled recyclable materials than a multi-stream recycling program should be planned. This is where the depositor sorts recyclable materials into separate containers and are handled separately throughout the recycling process. The capabilities and requirements of the destination facility should periodically be reassessed to identify any changes and capture new opportunities.

Facilities in Martin County support single sort recycling. This means that recyclable materials can be collected and delivered to recycling facilities without the need for separating materials.

Areas Where Gains Can Be Made at the Airport

It is recommended that the Fairmont Municipal Airport begin a new collection and sorting procedure for recyclables and solid waste. The Airport should recognize and establish two ‘streams’ for waste. The two streams are:

- Trash – all trash not otherwise identified as recyclable. Dispose in standard waste containers.
- Recyclable Materials – Newspaper, magazines and miscellaneous paper products, tin, aerosol cans or aluminum cans, glass and plastic.

Disseminating the waste/recycle streams and processes to the tenants of the airport would be beneficial.

Other Methods Which Would Reduce Environmental Impacts of the Airport

1. Complete a Comprehensive Waste Audit to assess volume of waste and recyclables and results of recycling program changes.
2. Complete an energy audit to see where improvements in existing buildings could be made.
3. Develop minimum standards for tenants to reduce waste and energy usage.
4. Encourage green building policies and practices. Explore the following methods:
    a. LED lighting – reduce energy usage
    b. White roofs – reduce heat in the summer
    c. Solar wall heating – reduce cost to heat or cool buildings
    d. Wind and phot-voltaic renewable energy system

Potential Cost Savings/Revenue Potential from Recycling

While exact numbers are not known now, taking solid municipal waste, deplaned waste, food waste and several other wastes out of the waste stream should help reduce the cost for collection services paid by the Airport and its tenants. It is recommended that the Airport work with the solid municipal waste collectors to develop a baseline of trash and recyclables collected at the Fairmont Municipal Airport. A monthly report would show potential areas of improvement and should lead to cost savings in trash collection.