

La Crosse Regional Airport

*Airport Recycling,
Reuse, and Waste
Reduction Plan*



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Executive Summary

The City of La Crosse, Wisconsin, sponsor of La Crosse Regional Airport, (LSE or Airport) is committed to environmentally responsible operations. The Airport is updating its master plan, including planning for solid waste management in keeping with the *FAA Modernization and Reform Act of 2012* (FMRA) requirements. The purpose of this task is to evaluate LSE's existing waste program and recommend strategies to increase landfill diversion, including waste reduction, reuse, and recycling.

A facility walk-through and informal interviews with LSE staff provided information to develop a baseline and identify areas of opportunity to divert waste from the landfill. The baseline information and identified opportunities formed the basis to develop recommendations appropriate for LSE's waste stream. Highlights of these recommendations include:

- Establish goals and objectives.
- Track progress and report annually.
- Improve paper, plastic, and aluminum can recycling and expand recycling to other areas, including deplaned waste, the maintenance/SRE building, and ARFF areas.
- Improve education and outreach for passengers and employees.
- Co-locate, and standardize recycling stations and garbage cans.
- Improve signage throughout the facility.
- Encourage passengers to recycle beverage containers (after emptying liquids).
- Maintain and improve the recycling program according to the Plan Do Check Act cycle.

This range of recommendations will allow the Airport the flexibility to implement those that are compatible with changing conditions and available resources, while providing the opportunity to increase landfill diversion over time through a phased, comprehensive program.

1. Introduction

A. Regulatory Background and Project Purpose

Section 132(b) of the FMRA expanded the definition of airport planning to include “developing a plan for recycling and minimizing the generation of airport solid waste.” FMRA Section 133 added a requirement that when airports prepare or update a master plan and receive Federal Aviation Administration (FAA) Airport Improvement Program (AIP) funding, they ensure that these master plans address issues related to solid waste recycling. These issues include:

- 1) The feasibility of solid waste recycling
- 2) Minimizing the generation of solid waste
- 3) Operation and maintenance requirements
- 4) Review of waste management contracts
- 5) The potential for cost savings or revenue generation.

In September 2014, the FAA released a memorandum titled “Guidance on Airport Recycling, Reuse, and Waste Reduction Plans.” This memo details the FAA’s expectations and suggestions for an airport’s recycling plan. To comply with FMRA and the FAA’s guidance memo, LSE is preparing this recycling, reuse, and waste reduction plan. The purpose of this plan is to document and assess LSE’s existing waste program based on the factors listed above and to recommend improvements.

An airport’s waste and recycling program and documented plan depend on several factors including:

- The size, location, and layout of the airport
- The amount and type of waste generated
- Markets for recyclable commodities
- Costs for recycling
- Available local infrastructure
- The willingness of an airport and its tenants to implement recycling and other strategies

The extent and accuracy of available information governed the content of LSE’s plan.

B. Airport Description

LSE is located in western Wisconsin approximately five miles north of the City of La Crosse on French Island between the Mississippi River and the Black River. The Airport is owned by the City of La Crosse and is governed by an aviation board of seven voting members and up to three non-voting members. Operations at the Airport are generally managed by the airport director, assistant airport director, and the operations and maintenance supervisor, along with Airport employees.

LSE is classified as a non-hub primary airport and is included in the FAA *National Plan of Integrated Airport Systems (NPIAS)*. The Airport is an FAA Class I Part 139 facility with facilities and services to accommodate

scheduled passenger aircraft with 30 or more passenger seats. The State of Wisconsin classifies LSE as a commercial service airport.

The Airport serves commercial, general aviation (GA), and military activity. In fiscal year 2017, LSE saw approximately 185,900 total passengers (92,951 enplanements), saw 17,417 total operations, and had 74 based aircraft. LSE is currently served by two airlines: American Airlines providing service to Chicago and Delta Airlines with service to Minneapolis. Additional background and activity information is available in the Airport's master plan.

C. Waste Definitions and Plan Focus

Municipal Solid Waste (MSW) consists of everyday items that are used and then discarded. There are five primary types of MSW generated at airports:

- a. General MSW consists of common inorganic waste, such as product packaging, disposable utensils, plates and cups, bottles, and newspaper. Less common items, such as furniture and clothing, are also considered general MSW.
- b. Food waste is either food that is not consumed or the waste generated and discarded during food preparation. Food waste and green waste make up a waste stream known as "compostable" waste.
- c. Green waste consists of tree, shrub and grass clippings, leaves, weeds, small branches, seeds, pods and similar debris generated by landscape maintenance activities. Green waste and food waste together may be referred to as "compostables."
- d. Deplaned waste is a specific type of MSW that is removed from passenger aircraft. These materials include bottles and cans, newspaper and mixed paper, plastic cups, service ware, food waste, food soiled paper, and paper towels.
- e. Construction and Demolition (C&D) waste is generally categorized as MSW and is any non-hazardous solid waste from land clearing, excavation, and/or the construction, demolition, renovation or repair of structures, roads, and utilities. C&D waste commonly includes concrete, wood, metals, drywall, carpet, plastic, pipes, land clearing debris, cardboard, and salvaged building components.

This plan focuses on the management of MSW and other materials that can be recycled or disposed of in a landfill. This plan does not address the management of other types of waste regulated by federal, state, and local laws, specifically:

- Hazardous waste
- Universal waste
- Industrial waste
- Waste from international flights
- C&D waste that is subject to special requirements or requires special handling—for example, asbestos and lead.

D. Key Airport Buildings and Plan Scope

The Airport's buildings include an airline passenger terminal, maintenance and airport support facilities, GA facilities, and tenant facilities. The Airport also manages waste on a public beach on airport property.

Airline Passenger Terminal

The passenger terminal serves airline passengers and provides space for airline-related services.

The main lobby, airport administration offices, airline ticketing counters and offices, restrooms, baggage claim, military lounge, nursing mothers' room, and rental car counters and offices comprise the pre-security, or non-sterile, portion of the terminal on the first floor. The Transportation Security Administration (TSA) office is also located on the first floor. A shop offering packaged food and drinks and the security queuing area are in the non-sterile area on the second floor.

The administration offices include conference rooms, waiting area, offices, storage, and a breakroom. There is also a janitor's room near the administration area. The main lobby area connects the airline counters, baggage claim, and rental car areas on the first floor. There is one luggage belt in the baggage claim area, along with a nearby vending machine. Ticketing counters, associated queuing lines and kiosks, and offices are allocated to each airline. Similarly, rental car counters, queuing lines, and associated offices are allocated to each rental car company.

Passengers access the security checkpoint on the second floor via escalator or elevator. The queuing area is located next to the escalators at the entrance to the checkpoint. The TSA operates the security checkpoint, which offers one lane for screening passengers and carry-on items.

The post-security, or secure portion, of the terminal makes up much of the second floor. It offers services for passengers already screened at the security checkpoint including a retail shop, restaurant and bar, vending machines, restrooms, airline gates, and passenger hold rooms.

Four gates serve deplaning and enplaning passengers. Hold rooms where passengers wait to board departing flights within the departure lobby are defined by north and south according to their location in

the building. The south hold room near Gate 1 includes restroom access and vending machines (**Figure 1**). The north hold room near Gate 4 includes a children’s play area.

The Arrowhead Tap House, a combination bar, restaurant, coffee shop, and gift shop, is located in the secure area and features bar seating as well as tables and chairs with full service (**Figure 2**).



Figure 1: Terminal hold room near Gate 1



Figure 2: Arrowhead Tap House

The restaurant also sells prepackaged food and beverage items in the Arrowhead Grab N Go retail area adjacent to the bar and full-service restaurant.

Additional areas in the terminal are accessible only to credentialed staff and contractors. These areas include baggage screening, cargo, mechanical, and storage areas.

Maintenance and Airport Support Facilities

Airport staff maintain the property and perform snow removal and deicing activities. Snow removal equipment (SRE) and maintenance equipment are stored in a 22,800 square-foot facility located in the GA area to the south of Runway 04/22 and Runway 13/31. This building has immediate access to the unsecure landside through an access gate near the building.

Aircraft rescue and firefighting (ARFF) materials are located in a separate building in the GA area.

GA Facilities

One fixed-base operator (FBO), Colgan Air Services, offers services such as aircraft maintenance, hangar rental, fueling, and pilot/passenger facilities to support GA activity at LSE. The FBO has a facility in the GA area. The Airport has box hangars and T-hangars for use by GA aircraft.

Plan Scope

The facilities described above include buildings and areas where LSE has direct control of waste management and others in which LSE has influence, but not direct control. According to FAA guidance, areas over which LSE has direct control or influence should be included in the Recycling, Reuse, and Waste Reduction Plan; areas outside Airport control or influence may be excluded. The Airport has direct control over operations and activities related to waste management in the areas shown in **Table 1**:

Table 1: La Crosse Regional Airport – Areas Under Direct Control
Passenger Terminal Building
<p>Public Use Areas Non-sterile area, restrooms, security screening queuing area, sterile gate areas, baggage claim area</p>
Airport Administration Offices
Other Airport Facilities/Activities
ARFF Building
Maintenance/SRE Building
Beach Area

In addition, LSE can influence the management of waste and recyclables in tenant spaces through lease agreements and contracts, including the areas shown in **Table 2**:

Table 2: La Crosse Regional Airport – Areas Under Influence
Passenger Terminal Building
Airline Leased Areas Offices, ticketing counters, breakrooms, and deplaned waste
Rental Car Tenant Areas Offices, counters, return areas, service areas, and breakrooms
Restaurant Leased space and associated activities
TSA Spaces
USO Lounge
Other Airport Facilities/Activities
Fixed-Base Operator (FBO) Building
General Aviation (GA) Tenant Areas (including leased hangars)

The Airport does not have control or influence over waste management in the FAA Air Traffic Control Tower (ATCT) nor areas adjacent to Airport property controlled by neighboring businesses and property owners; therefore, they are excluded from this plan.

2. Existing Program

A. Drivers

The Airport’s recycling program is part of a long-standing community effort to reduce the quantity of material disposed of in the landfill and to conserve resources. The City of La Crosse programs and practices drive the program, and the local recycling infrastructure supports recycling at LSE. A sustainability coordinator from the County works with LSE to help implement and maintain the program.

B. Alignment with Local Programs

The City, which owns and operates LSE, contracts with a waste hauling contractor, Harter’s Quick Clean Up, to provide city-wide refuse and recycling collection services for residences. This is the same hauler the City contracts for waste and recycling collection at LSE. La Crosse County also has a sustainability coordinator role to support sustainability measures including waste reduction and recycling. The City and County each have a Sustainability Commission that guides recycling related policy and tracks the performance of their respective sustainability programs. The City and County each have internal sustainability goals and programs guided by a joint sustainability plan. Further information about city and county sustainability goals and initiatives can be found in Section 5D: *Recycling Feasibility, Guidelines and Policies*.

Actions at LSE, as an entity owned by the City of La Crosse, align with these local and internal programs.

C. Infrastructure



Figure 3: Curbside garbage can

Employees, tenants, and passengers have access to a network of trash cans and recycling stations in the terminal. There are dual units in public areas for collection of both waste and commingled recyclable materials, along with several waste-only containers.

The curbside area outside the passenger terminal has approximately five trash bins. The bins are tall, round, metal garbage cans with a hood covering the opening in the lid (**Figure 3**). There are no recycling bins in the exterior curbside area.

The interior of the main lobby includes several styles of bins with openings in the lids for both trash and recycling. These multi-stream bins are stainless steel with lid openings that are labeled with “Recycling” and “Waste” to signify the appropriate use (**Figure 4**). There are also recycling bins in this area with multiple openings labeled “Paper” and “Glass, Metal, Plastic” to separate recyclable materials (**Figure 5**). There are several trash bins located within the main lobby with a single opening that are labeled as “Trash Only” on the lids (**Figure 6**).



Figure 4: Main lobby trash and recycling multi-use bins



Figure 5: Main lobby separated recycling bin

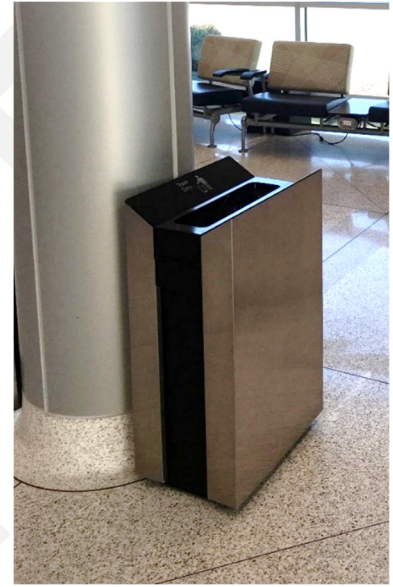


Figure 6: Main lobby/ticketing area trash bins

Trash bins are also available at the self check-in kiosks near the airline counters for passenger use (**Figure 7**) and behind the ticketing counters for airline staff use (**Figure 8**).



Figure 7: Trash bin near self check-in kiosks



Figure 8: Trash bin behind ticketing counter

The same multi-stream bins used in the main lobby on the first floor are used in the passenger hold rooms in the secure area on the second floor (**Figure 9**). The entrance to the security screening area has one combined bin and one trash only bin to accommodate passengers that need to discard items to meet TSA requirements (**Figure 10**).



Figure 9: Secure area mixed-use bins

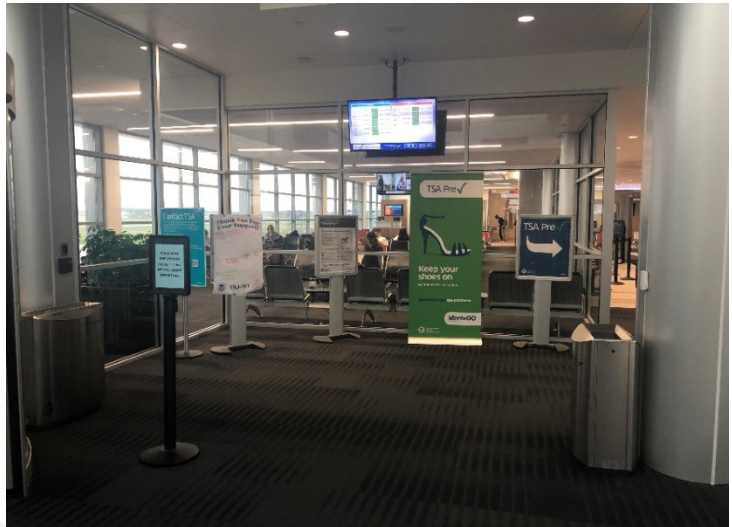


Figure 10: Trash and combined bins at security screening queue

The terminal restrooms feature paper towel dispensers and an opening to dispose trash in the sink area countertop (**Figure 11**). Trash bins are located outside restroom doors (**Figure 12**).



Figure 11: Terminal restrooms offer paper towel dispensers



Figure 12: Trash bins are located outside restrooms

Drinking fountains are located near the restrooms on both the first and second floor. A water bottle refilling station is located inside security on the second floor (**Figure 13**).



Figure 13: Water bottle filling station and drinking fountain on second floor



Figure 14: Restaurant and bar counter trash and recycling bins

The restaurant kitchen and back of house area include space for food preparation, dishwashing, storage, and other activities. Waste and recycling from the bar and patron tables are collected at the servers' station in bins under the counter that accommodate both trash and recyclable materials (**Figure 14**). The restaurant uses reusable plastic trays with disposable paper for dine-in customers and Styrofoam containers for to-go orders.

Administration offices have small plastic bins for both trash and recycling under each desk. The trash bins have liners and the recycling containers do not use liners. The copy area has a shredder and a stack of reusable interoffice envelopes (**Figure 15**). Conference rooms have only trash bins. Break areas have a covered bin for trash and an informal cardboard box to collect recyclable materials (**Figure 16**). The administrative offices have a water cooler for refilling water bottles and reusable cups. Disposable paper cups are provided for



Figure 15: Administration office copy area



Figure 16: Covered trash bin and informal container for recycling in break room

guests. Durable plates are used on a regular basis by staff. Other break areas have do not have recycling options.

American Airlines and Delta each have offices and operations areas. The airlines generate aluminum cans, plastic, office paper, and magazines. Delta areas only have trash bins, while the American Airlines offices have a separate bin for recyclable paper (**Figure 17**) and cans (**Figure 18**). The Delta Airlines office has a collection bin for used blankets, which are laundered and repackaged for reuse, and a cart for out-of-date magazines. Delta also provides a water cooler for employees to refill bottles and reusable cups (**Figure 19**). The airlines use shared dumpsters at the operational expense of the airport.

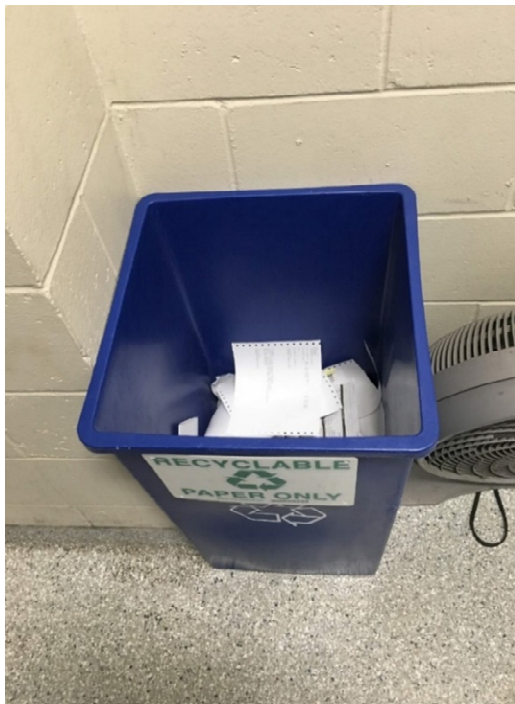


Figure 17: Paper recycling in American Airlines office area



Figure 18: Bottle and can bin in the American Airlines office area



Figure 19: Used blanket collection and water cooler in Delta Airlines area

Aluminum cans are collected separately and saved for redemption by Airport facilities staff (Figure 20). Airport facilities staff indicated that they encounter occasional difficulties with this process, as the cans are difficult to separate from other recyclable materials and there tends to be a large number of aluminum cans to separate and store. These are stored in bags in mechanical areas until redemption. Other recyclable materials are collected in a dumpster near the south side of the terminal building, accessed from the land side (Figure 21). This dumpster for commingled recyclables is available for use by tenants; however, it is marked to indicate that only mixed paper and cardboard is acceptable. There is also a trash dumpster near the terminal area

that is available to tenants. The dumpsters are included within the City of La Crosse contract with the hauler, Harter's Quick Clean Up, who provides trash and recycling pick-up at all city offices and facilities.



Figure 20: Aluminum cans are stored and saved for redemption



Figure 21: The shared recycling dumpster is marked for cardboard and mixed paper

There are two additional waste dumpsters on airport property, one controlled by the Airport near the maintenance building and another controlled by the FBO. The dumpster near the waste building is next to the waste oil collection tank (**Figure 22**). There are no recycling collection facilities in the maintenance/SRE, ARFF, or FBO areas.



Figure 22: Maintenance area dumpster and waste oil tank

The airport also maintains a public beach area across Fisherman Road to the east of the airfield. This area has one bin for the collection of waste.

D. Operation and Maintenance Requirements/Roles and Responsibilities

The recycling program at LSE is implemented by facilities staff with support from Airport management personnel and the City of La Crosse.

Facilities staff are responsible for custodial activities including collecting waste and recyclables from bins and transferring these materials to the appropriate dumpsters using a single, undivided cart. Airport facilities staff are responsible for custodial activities in the administrative offices and public area in the terminal. The City of La Crosse is responsible for procuring hauling service as part of the contract that serves all City buildings and facilities. Harter's Quick Clean-Up is the waste and recycling hauling contractor for LSE. Harter's also collects recyclable materials from LSE and transports them to their material recovery center that separates commingled materials and prepares them for sale. Further information about the materials accepted by the hauler is found in Section 5B: Technical and Economic Factors.

Containers are procured via an airport RFP. Contract management and coordination of tenant leases is done by the deputy airport director of operations and administration.

The Airport's terminal tenants (restaurant and shop, rental car companies, and airlines) and tenants in several of the outlying buildings (FBO and GA areas) are responsible for custodial activities in their areas. The operator of the FBO is responsible for securing their own waste and recycling services.

About six employees work at the restaurant in the terminal. They are responsible for collecting separate trash and recyclables. Any expired food is tracked by employees in a waste log and the restaurant donates non-expired unused food to local charities.

E. Current Reduction, Reuse, and Recycling Efforts

Waste Reduction

Waste reduction refers to reducing the volume of waste produced at its source. Changing habits and current practices, such as printing and purchasing can be an effective way to accomplish this. LSE currently employs the following practices to reduce the total amount of waste generated:

- Double-sided printing
- Email and internal websites for inter-office communication
- Water bottle refilling stations in the terminal and office areas

Reuse

In a waste management context, reuse refers to using materials and items more than once and as many times as possible before disposal. Reuse can include using items and materials for the original purpose or repurposing something for a different use. Reuse can require purchasing durable materials and items instead of disposable or single use options.

LSE currently reuses:

- Durable plates (instead of plastic, paper, or Styrofoam) in administration breakroom, glasses at the restaurant
- Old letterhead reallocated as scratch paper
- Interoffice envelopes
- Microfiber cloths and shop towels/rags
- Office furniture

Recycling

Using the infrastructure and resources described above, LSE currently recycles commingled materials that include aluminum, tin, glass, cardboard and paper, and several types of plastic. While LSE practices shredding for sensitive documents, the recycling hauler cannot accept shredded paper.

Terminal tenants may generate most of the cardboard in the form of shipping boxes. The paper stream likely includes printer paper, mail, envelopes, and other paper from the administration offices. During a site visit it was clear that the dumpster for recyclable materials was being used by tenants for paper and cardboard materials. However, because the bin is marked that it accepts paper and cardboard only, some tenants may not be including all of the materials accepted for comingled recycling by the hauler. Plastic and aluminum streams are primarily made up of beverage containers collected from public areas of the terminal, vending machines, and restaurant. Aluminum cans are collected by employees and tenants for refund.

Construction and Demolition Debris, Green Waste, and Other Waste

The Airport reuses and recycles the waste generated during construction projects where possible. Asphalt, concrete, and fill is reused on-site. The Airport uses mulching lawnmowers for grass clippings, and the City parks department does tree trimming. The Airport collects hazardous waste; used oil and filters; batteries; paint; used tires; and scrap metal for reuse, recycling, or return to supplier programs.

Tenant Efforts

In addition to the recycling program operated by LSE, tenants at the Airport may be recycling on their own. Tenants may be using the Airport's bins, carts, and dumpsters.

F. Tracking and Performance

The Airport does not formally track overall waste generation, recycled material volume, or other metrics. At present, LSE does not have specific waste or recycling objectives, targets, or goals. However, the Airport uses waste and recycling hauling invoices, costs, and frequency of pick-ups to determine changes over time

3. Waste Audit

LSE staff have informally observed employee and tenant waste and recycling behaviors and how waste flows through the facility. The staff have also described waste and recycling collection and hauling practices. Airport staff provided information about:

- Airport buildings and facilities
- Areas that generate waste
- The types of waste generated in each area
- The materials that are recycled under the current program.

An evaluation of LSE’s information and records as well as aviation industry waste and recycling trends supported efforts to identify the source, composition, and quantity of waste generated at LSE, including areas under LSE’s direct control or influence. This information then served as the foundation to identify opportunities to improve and monitor program effectiveness.

A. Quantity and Sources

Based on industry averages, the overall contribution of waste and recyclables from various areas and activities at LSE is likely similar to the distribution shown in **Table 3**.

Table 3: Estimated Generation at LSE by Area/Activity	
LSE Area/Activity	Estimated Percent
Deplaned	20%
Other Air Carrier	24%
Administration	3%
Public Areas	35%
Restaurant	18%
Total	100%

Based on this distribution, strategies that focus on the air carrier and public areas may represent the best opportunities to reduce waste generation and increase landfill diversion.

Airport staff provided hauling invoices for August through November 2017, May 2018, July 2018, December 2018, and January 2019. These invoices provide enough data to extrapolate regular hauling volumes and costs. Based on the invoice information, the following containers and service schedules are currently in place at LSE:

- Waste: One 6-yard dumpster collected twice per week (Terminal)

- Recycling: One 6 yard dumpster collected once per week (Terminal)
- Waste: One 2-yard dumpster collected once per week (Maintenance)

According to the United States Environmental Protection Agency (EPA), one cubic yard of commingled recycled material is equal to 111 pounds. Assuming a load factor of 75 percent, one 6-yard dumpster of commingled materials is equivalent to approximately 670 pounds of recyclable material per week. Multiplied by the number of weeks in a year to account for the weekly pick up schedule, LSE generates approximately 26,000 pounds of recyclable material per year (approximately 13 tons).

Using the same load factor and the EPA's volume to weight conversion factor of 138 pounds per cubic yard of commercial MSW, the 6-yard dumpster at the terminal building is equivalent to approximately 1,240 pounds of waste per week, or approximately 32.3 tons per year. The smaller dumpster near the maintenance facility contains an estimated 210 pounds of MSW each week, totaling approximately 5.4 tons yearly.

A physical waste sort could provide more detailed information about the amount and proportion of waste generated in total and by each area, activity, and tenant. Based on the waste and recycling data presented above, LSE's current recycling rate is about 25.6 percent. This is calculated by dividing the total tons of recycled material by the total recycled and MSW. This does not include aluminum cans that are redeemed separately and are not disposed of in the single-stream recycling containers.

B. Composition

Based on the activities taking place at LSE, a varied waste stream can be expected. According to industry case studies and previous waste planning projects, an airport's waste stream is approximately 40 percent recyclable, 35 percent compostable, and 25 percent waste that cannot be recycled or composted due to current technologies and, as a result, must be placed in a landfill.

Table 4 lists each area included in the scope of this plan and the type(s) of waste likely generated there.

Table 4: La Crosse Regional Airport Waste by Area and Material																		
Area Material	Office Paper	Newspapers	Magazines	Plastic	Aluminum	Cardboard	Glass	Food Waste	Paper Products	Liquids	Toiletries	Packaging	Styrofoam	Metals	Deplaned Waste	Green / Yard Waste	C & D Waste	Other Waste
Terminal Building																		
Public passenger areas Curbs, ticketing lobby, restrooms, security screening queuing area, gate areas, hold rooms, baggage claim area		x	x	x	x			x	x	x	x	x						x
Tenant areas Shop, bar/restaurant, and associated activities	x	x	x	x	x	x	x	x	x	x		x						x
Airline areas Offices, ticketing counters, gate stations, breakrooms, underwing services, and deplaned waste	x	x	x	x	x	x		x	x	x		x			x			x
Rental Car areas Offices, counters, return areas, service areas	x			x	x			x	x	x								x
TSA Spaces	x	x	x	x	x			x	x	x	x	x						x
Airport Administration Offices	x	x	x	x	x	x		x	x			x						x
ARFF Building	x	x	x	x	x	x	x	x	x			x						
SRE/Maintenance Building	x	x	x	x	x	x		x	x						x	x	x	x
Airport Maintenance Activities															x	x	x	x

A physical waste sort could provide more detailed information about the specific composition of waste at LSE. This information may include:

- the types of items included in each general category
- the contamination rate of the recycling stream (items that are not recyclable in the recycling bins)
- the recovery rate for recycling (the proportion of recyclable items that are segregated properly).

The data from a waste audit can be used to identify opportunities to improve the composition of the waste stream (by item substitution, by improving recycling to reduce the volume of waste, etc.). The following sections describe types of waste and recyclable materials generated at an airport like LSE in detail, including toiletries, food and beverages at security screening, and liquids throughout the facility.

C. Purchases

Invoices for purchases of disposable items were not provided for review. This information could provide insight on some of the materials coming into the airport that will go back out as waste (other materials are brought on-site by passengers, employees, and vendors). Identifying and tracking the type and quantity of all disposable items purchased for use at LSE, will allow the Airport to identify opportunities to reduce outgoing waste, including:

- Items that have reusable or recyclable alternatives (foam cups)
- Some items that could be eliminated (by converting paper forms to digital to reduce paper waste generated)
- Some that indicate scale of the activity at the airport (paper towel and garbage bags).

4. Review of Waste Management Contracts

As noted in Section 1 Introduction, the FMRA lists the review of waste management contracts as an element of addressing solid waste recycling. The FAA memorandum explains that the purpose of reviewing these contracts is to “identify opportunities for improving (waste) program scope and efficiency, as well as identify constraints.”

In general, LSE’s contracts and leases provide limited information about recycling. These contracts and leases do not impede recycling or other waste management strategies; however, they do not explicitly require conformance with or support of the City or County sustainability efforts or waste plan. The following sections describe the content of various contracts related to waste and recycling.

A. Waste Hauling Contracts

The City contracts with Harter’s Quick Clean Up for waste and recycling hauling at all of its facilities, including the Airport. Their contract includes a clause that ensures all collected recyclables are recycled unless the Board of Public Works grants a written exception for other disposal options.

B. Tenant Leases and Service Contracts

Examples of sections of language from tenant leases were examined to determine any contractual responsibilities for waste and recycling for the tenants of LSE.

Leases with airline, car rental tenants, and TSA only address hazardous waste and releases to the Airport storm or sanitary sewer.

The terminal concessionaire lease stipulates that the City will provide a container for the safe handling of trash and other refuse caused as a result of the operation of the leased premises. It does not include provision of recycling facilities.

T-hangar tenant leases include a subsection regarding hazardous materials but does not address other solid waste.

The FBO lease explains that they must pay all costs of their utilities and establish direct billing with the provider.

C. Expiring Leases and Contracts

Information regarding the expiration, extension, or renewal dates of LSE’s leases was not reviewed under this project. As outlined in the FAA guidance memo, “This information can signal the Airport’s next opportunity to add recycling, reuse, and waste reduction objectives to existing leases and contracts.”

D. Funding

Waste and recycling are funded in LSE’s operating budget.

5. Recycling Feasibility

Many factors impact the feasibility of recycling at LSE; some are universal, and others, specific to the facility. The following sections describe the more influential of these factors.

A. Commitment and Support

The willingness of LSE and its contractors and tenants to commit to and support the facility's recycling program are critical to the success of such a program. Without the commitment of resources such as funding, labor and time, space, and access to secure areas, a waste management program could struggle.

Airport Policy and Contractor Dedication

The Airport staff has supported the recycling program in the past and their support is expected to continue in the foreseeable future. Based on the resources and ordinances in place, the City of La Crosse appears to generally support recycling and practical waste management.

The waste management contractor's website states, "In 2013 Harter's Quick Clean Up decided to move into the 21st century of trash and recycling collection. We completed our Material Recovery Facility [which] has enabled Harter's to greatly expand recycling collection practices." This investment aligns with continued support of the Airport and City's recycling program.

Airline Policies

Both airlines that operate at LSE have established sustainability programs that include elements of waste and recycling.

American Airlines has implemented recycling programs on the ground and in the skies. American recycles in back offices and breakrooms at their major hub at Dallas/Fort Worth International Airport, at maintenance centers, and in other offices/employee work areas. According to their website, the airline introduced the industry's first onboard recycling program and recycles aluminum cans, paper, and plastic in-flight. At LSE, American collects aluminum cans.

Per corporate policy, Delta is "committed to minimizing waste streams through diversion and re-use, waste, recycling programs, and (waste reduction)." Delta has been working to increase the number of cities where they recycle and the volume of material collected. In addition, they track employee recycling at the headquarters campus in Atlanta and upcycle life vests, carpet, and leather seat covers. Delta is looking for opportunities to improve recycling at LSE.

Offering recycling for deplaned waste at LSE aligns the Airport with its airline partners.

B. Technical and Economic Factors

Local Markets and Infrastructure

Markets for recycled materials fluctuate widely based on many factors and interactions. Local waste haulers typically accept materials that can be recycled cost-effectively in the area. Manufacturers purchasing

recycled material want it to be predictable and ready for use; therefore, recycling facilities are particular about what materials they accept and prefer materials that are of high value and clean and easy to separate.

The materials listed in **Table 5** are accepted by Harter’s recycling processing facility. This facility processes recyclable material for business clients that the company contracts with directly, as well as to the City of La Crosse for its residential recycling program. As noted above, inclusion in such programs typically indicates that the market and/or infrastructure for these materials is strong. LSE currently recycles many of the materials accepted by the recycling program.

Table 5: Materials Accepted by Harter’s Recycling Processing Facility Serving the City of La Crosse	
Recyclable Materials	
Cardboard:	corrugated boxes, soda and pizza boxes, egg cartons, cereal and snack boxes
Tin and aluminum	
Extension cords and electrical wiring	
Plastic bottles, tubs, and jugs:	Containers numbered 1, 2, 4, & 5
Milk, soup, and juice cartons	
Mixed paper, newspaper, magazines, envelopes	
Glass: jars and bottles of any color	
<i>Source: Harter’s Green Circle Recycling website https://harters.net/green-circle-recycling/</i>	

Logistical Considerations and Constraints

To maintain a recycling program at LSE, certain elements must be in place. These include:

- A proactive and engaged custodial staff
- A willing and affordable hauling contractor
- Space for bins, dumpsters, and compactors
- Access to secure areas of the facility (including airside ramps and sterile terminal areas).

At this time, these elements appear unconstrained. Resources including custodial labor, waste hauling services, space, and airport access are anticipated to be available to support the continuation of the recycling program at LSE.

Contractual Issues

An evaluation of the Airport's contracts is included in Section 4. No major contractual issues with maintaining and improving the recycling program at LSE are anticipated. LSE and the waste and recycling collection contractor will need to continue to collaborate to support the facility's recycling program.

Toiletries, Food, and Beverages – TSA Restrictions

The TSA restricts the volume of liquids, gels and aerosols that can be carried onto an aircraft. Passengers are allowed three-ounce containers of toiletries in one one-quart baggie (3-1-1) in their carry-on luggage. Even though these restrictions have been in place for longer than 10 years, security screening regularly reveals toiletries, beverages, and food items that do not meet the requirements contained in passenger luggage.

When these items are found, the TSA gives passengers three options: pack the item in a checked bag, give the item to a non-traveling family member or friend, or forfeit the item. By law, the TSA cannot retain any items removed from passenger luggage, so items that passengers do not repack or hand off end up in the trash. The area before security screening currently has one trash only bin and one combing trash and recycling bin that passengers can use to discard items prior to entering the queue.

Of the items that end up in the trash at security checkpoints, some problematic items include bottled water, other bottled or canned beverages, toothpaste, shampoo and/or conditioner, sunscreen, and aloe gel. Some other, less obvious unallowable items are peanut butter, yogurt, applesauce, and maple syrup. Discovery of a restricted item in a passenger's carry-on or bag may subject the passenger to additional screening, which requires extra time and can interrupt the flow at a security screening checkpoint.

Liquids

It is expected that the garbage cans and recycling station located in the security queuing area receive a fair amount of liquids and beverage containers due to TSA restrictions. These items end up in the waste stream where the liquids are difficult to manage and the containers cannot be recycled. Liquids contaminate and degrade other materials within the recycling stream and add weight to recycling or waste streams where they are found. In some cases, liquids are thrown away in their containers, which means the recyclable material in water bottles, aluminum soda cans, and plastic beverage containers is not captured for recycling.

LSE has ordered a liquid collection station that will likely be implemented in the near future. This, along with complementary recycling bins, will help direct recyclable bottles and liquid containers to the recycling stream.

C. Recycling, Landfill, and Energy-from-Waste Facility Requirements

The recycling facility and landfill that accept waste from LSE have specific acceptance criteria and requirements. Adherence to these specifications protects the safety of employees handling these materials;

the integrity and operation of the equipment and infrastructure used to transfer, sort, and convert these materials; and the value of the recyclable stream.

Some components that seem recyclable (some types of plastic or metal parts) are included in items generated at LSE; however, the recycling facility has specific material standards, so it is important that non-recyclable items are not included in the facility's recycling stream.

According to the Harter's company website, waste items that may be generated at the Airport, but are prohibited at the recycling facility include:

- Food-tainted items
- Ceramics and dishware
- Plastic wrap
- Packing peanuts or bubble wrap
- Styrofoam or polystyrene
- Hazardous chemical containers
- Shredded paper
- Foam egg cartons
- Light bulbs
- Yard waste
- Other garbage

The La Crosse County Landfill accepts municipal waste, wood waste, asphalt shingles, aggregate concrete/asphalt, yard waste, tires, ferrous and non-ferrous metals, and household hazardous waste. Municipal waste and wood waste are burned for fuel in Xcel Energy's French Island waste-to-energy plant. Some items are recovered and re-used, and others, such as tires and metals are ultimately recycled. With special permits, the landfill also accepts some hazardous or special wastes from businesses, including petroleum impacted soils and asbestos.

Costs

LSE strives to be as self-sustaining as feasible; therefore, it is imperative that programs implemented and maintained at the facility, including recycling, are as cost-effective as possible.

D. Guidelines and Policies

To evaluate LSE's existing waste plan in the context of local, state, and national requirements, the consultant reviewed federal, State of Wisconsin, and local waste and recycling regulations and policies/factors.

Federal

As described in Section 1, the FAA’s definition of “airport planning” was updated in 2012 through FMRA to include planning for recycling and waste minimization. The Airport is required to address solid waste as part of airport master planning. The FAA provides guidance on airport waste and recycling in the September 2014 memo on the topic as well as in a synthesis document prepared in 2013 (both available on the FAA’s website).

At the federal level, the United States Environmental Protection Agency (EPA) is responsible for developing a solid waste management program under the Resource Conservation and Recovery Act (RCRA) and related policies and guidance. RCRA provides the framework for management of hazardous and non-hazardous waste. All generators of hazardous waste, including airports, are required to comply with RCRA and all other federal waste laws and regulations.

The EPA has developed a hierarchy of waste management strategies. This hierarchy, shown in **Figure X**, ranks these strategies from most- to least-environmentally preferred and places emphasis on reducing, reusing, and recycling.



Figure 23: EPA Waste Management Hierarchy

Source: United States Environmental Protection Agency

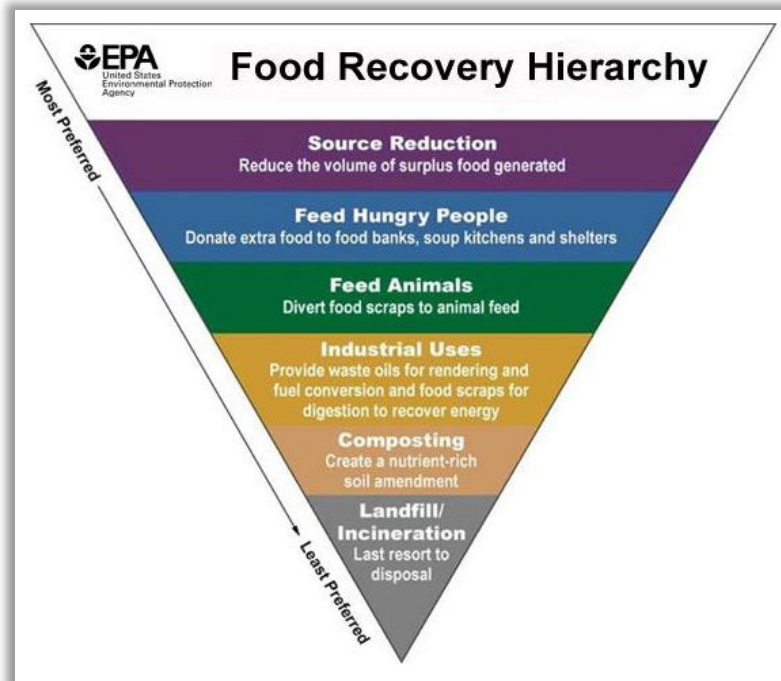


Figure 24: EPA Food Recovery Hierarchy

Source: United States Environmental Protection Agency

- REDUCTION of the amount of solid waste generated
- REUSE of materials recovered from the solid waste
- RECYCLING of materials recovered from solid waste
- COMPOSTING of solid waste
- RECOVERY of energy from solid waste
- LAND DISPOSAL of solid waste, and
- BURNING solid waste without energy recovery.

Wisconsin's Department of Natural Resources (DNR) is committed to reducing waste and growing the recycling industry. The DNR oversees the existing programs and bans and implements them throughout the state. The DNR conducts data collection, as well as provides financial, technical, and educational assistance. The financial assistance includes grants for Responsible Units (RUs) to encourage recycling consolidation and collaboration among other RUs. RUs can be municipalities, counties, tribes, or any other unit of local government that plans, funds, and operates a waste program.

Local

La Crosse County owns one landfill, the La Crosse County Solid Waste Facility. This facility is operated by a private entity and does not rely on general tax revenues for operational funding. The landfill site is a 350 acre complex within La Crosse that includes recycling, reuse, and waste-to-energy along with landfilling

In addition to the general waste management hierarchy, the EPA has also developed a preference ranking of management strategies for food waste, as shown below in **Figure X**.

State

The State of Wisconsin's solid waste reduction, recovery, and recycling law passed in 1990. This recycling law includes the ban on several materials in landfills. This law took effect in several stages. In 2010 and 2011, two additional bans were implemented which covered electronics and used oil filters. This policy also outlined the hierarchy and preferences for waste management options, presented below.

activities. The landfill has a capacity of over 5,600,000 cubic yards and at current disposal rates the landfill can continue to accept waste for approximately 30 years.

The County has a Solid Waste Policy Board that guides solid waste policies and strategies. La Crosse County collaborates with public and private partners on regional waste policy and infrastructure, including nearby cities and counties in Wisconsin and Minnesota, and Xcel Energy.

The County updated their solid waste plan in 2015 to outline solid waste policies and goals for 2016-2020 and the long term. Recycling volumes in the region have increased dramatically after implementing single stream recycling. The solid waste plan does not outline any numerical goals for recycling or waste diversion. It does indicate a commitment to provide MSW to the waste-to-energy plant, and increased recycling volumes have reduced the amount of burnable refuse for refuse derived fuel.

The Municipal Code of Ordinances for the City of La Crosse prohibits placing some recyclable materials in refuse. Section 36-72. states:

“The following materials shall be separated from post-consumer solid waste and mixing of these recyclable materials with post-consumer waste from residential, commercial, industrial, or other sources is prohibited: aluminum containers, steel or bi-metal containers, plastics bearing the SPI Code #1 or #2, newspaper, lead, acid and non-alkaline batteries, major appliances, waste oil, oil filter, electronics banned from collection, yard waste, waste tires from motor vehicles, trailers, or tractors and glass containers.”

In addition, combustible paper products may be mixed with waste intended for refuse derived fuel but should not be landfilled in significant quantities. City code also specifies that business waste must be separated from residential municipal waste that is collected by the City. Nonresidential properties also have recycling requirements. Section 36-76. States:

(a) Owners or designated agents of nonresidential facilities and properties shall do all of the following to recycle all recyclable materials:

(1) Provide adequate, clearly marked separate containers for the collection of the recyclable materials separated from the solid waste by the users, tenants and occupants and the delivery of the materials to a recycling facility.

(2) Prominently post and notify users, tenants and occupants the reasons to reduce and recycle solid waste, which materials are collected, how to prepare the materials in order to meet the processing requirements, collection methods or sites, locations and hours of operation, and a contact person or company, including a name, address and telephone number.

(b) The preceding requirements of subsection (a)(1) and (2) of this section for the owners or designated agents of nonresidential facilities or properties do not apply if the refuse generated

within the facility or property is delivered to and treated at a processing facility licensed by the Wisconsin Department of Natural Resources that recovers for recycling all recyclable materials in as pure a form as is technically and practically feasible.

La Crosse County and the City of La Crosse adopted a robust joint sustainability plan in 2009 that set several goals for solid waste and recycling in internal departments, including:

- The City will reduce its total generated waste by 25 percent by 2025, and of the waste generated, the recycled amount will increase by at least 25 percent.
- The City will reduce paper consumption by at least 10 percent each year for five years.
- The City should use recycled construction materials to the extent practicable.
- The County will develop a centralized recycling program for their facilities.
- The County will use 100 percent post-consumer recycled paper where applicable.
- The County will work with all municipalities to establish a construction and demolition ordinance that would increase recycling of waste materials, including asphalt shingles.
- The County will encourage all municipalities to implement a comprehensive recycling program.
- The County will contribute to market and public relations efforts related to recycling and solid waste in the local media market.

Based on the availability of residential and commercial recycling service along with the City and County's internal efforts related to solid waste, the project team assumes the residents of the communities surrounding the airport, and therefore the employees and passengers, have been exposed to recycling, receive on-going messaging about its importance, and are generally supportive of recycling efforts.

6. Cost Savings or Revenue Generation

The costs associated with a recycling program depend on available infrastructure, material markets, and the type of waste generated at a facility. These costs sometimes include capital costs for containers, landfill tipping fees, hauling costs, material rebates, and labor. An evaluation of the potential cost savings and revenue generation opportunities is required for an Airport Recycling, Reuse, and Waste Reduction Plan according to FMRA.

Airport staff provided some waste and recycling collection invoices for review under this project. These invoices included the costs for waste collection during several months in 2017, 2018, and 2019. In 2017 LSE reduced MSW pickup from three times per week to twice per week, reducing hauling costs. Based on the invoices provided, the Airport spends approximately \$3,500 per calendar year to collect MSW from the terminal and maintenance area, and approximately \$800 per calendar year to collect recyclable materials from the terminal area. Applying these rates to the quantity of waste estimated in Section 3A: *Waste Audit, Quantity and Sources* results in a waste to landfill cost of \$93 per ton and a recycling cost of \$62 per ton, meaning that recycling costs are lower on a per ton basis.

7. Recommendations

This section documents recommendations for LSE, including waste reduction, reuse, and recycling strategies, based on the information presented earlier, specifically the waste audit and feasibility discussion.

A. Objectives and Targets

It is recommended that the Airport set specific, measurable, achievable, realistic, and time-bound (SMART) goals for its waste and recycling program. Having an established set of objectives and targets provides a basis and foundation for subsequent activities and actions. Progress toward such goals does require tracking, but can also provide information on progress and improvements, which can be a valuable marketing and education tool.

The waste source, quantity, and composition information in Section 3 provides baseline data for establishing objectives and targets, and Section 5 describes goals and targets set by local government and the State of Wisconsin. The objectives and targets derived from this information can be used to calculate target levels for LSE. A physical material sort would further inform goal-setting efforts. These are potential objectives and targets the Commission might adopt or use as inspiration for other goals:

- Improve recycling rate by 25 percent by 2030 (current rate is unknown)
- 100 percent of employees complete recycling training
- 100 percent of employees sign recycling pledge aligned with City sustainability goals
- 100 percent of tenant agreements and leases include provision which encourages recycling

In the absence of established specific objectives and targets, the following sections present general, universal recommendations for increasing recycling and reducing waste generation at an airport like LSE.

B. Tracking and Reporting

It is recommended that the Airport begin to regularly estimate and track the volume of waste sent to the landfill and the volume of material collected for recycling as well as the costs associated with these services. As noted in Section 2, LSE does not currently formally track metrics associated with the waste management program, but uses waste and recycling hauling invoices, costs, and frequency of pick-ups to assess and track program performance and costs. Trends associated with waste generation, landfill, recycling, and cost can be assessed for issues or opportunities for improvement.

It is recommended that LSE proactively provide this information to management, employees, tenants, and interested external stakeholders on a regular basis. LSE's waste and recycling performance is not currently reported to stakeholders. The purposes of reporting are:

- To engage employees, tenants, and contractors in the recycling program by requesting their assistance with collecting information
- To communicate the Airport's commitment to its recycling program and its broader commitment to sustainability

- To solicit feedback and suggestions for improving the recycling program.

The frequency of reporting is up to the Airport, but it is recommended that reporting be completed at least annually. The reporting schedule should also be updated as needed to accommodate changes to the program.

C. Reduce and Reuse

It is recommended that the Airport evaluate the following reduction and reuse strategies to determine which, if any, are feasible and prudent for implantation at LSE.

- Substituting disposable items with durable alternatives in the administration office and other staff work areas, such as providing reusable cups for guests
- Reusing items and materials where possible
- Working with the restaurant tenant to support donation of edible food to a community food security organization
- Collecting and donating unopened food, beverage, and toiletry items subject to TSA restrictions
- Encouraging reuse by passengers, tenants, and contractors
- Working with the restaurant tenant to find recyclable alternatives to Styrofoam packaging

To reduce the facility's environmental impacts, LSE should focus on moving materials up the waste management hierarchy. Waste reduction is the most environmentally preferred waste management strategy as determined by the EPA. Waste reduction can be accomplished in many ways, including reusing items.

D. Donation of Food, Beverages, and Toiletries

It is recommended that LSE investigate the feasibility of collecting unopened bottles of water, other beverages, food and toiletries that are restricted from carry-on luggage and donating them to a local charity or other organization. These items can be very heavy and add weight to the waste stream.

In compliance with TSA requirements, these items may need to be collected prior to the security checkpoint queuing area. LSE would collect these items by locating a container at the security checkpoint and managing storage of the items until the receiving organization could collect them. To implement this recommendation, coordination between LSE, the designated receiving organization, and the TSA would be needed. An example of an Airport with such a program is McCarran International Airport in Las Vegas, Nevada.

It is recommended that the Airport continue to support the restaurant in their efforts to donate edible food to a local organization.



Example Donation Collection at McCarran International Airport (LAS)

E. Recycle and Compost

Recycling is the second preferred waste management strategy, according to the EPA, after waste reduction/reuse. Recycling allows waste items to be processed into raw materials to make new products. The FAA guidance expects an airport's recycling, reuse, and waste reduction plan to document, at a minimum, the facility's existing program to recycle paper, plastic bottles, aluminum cans, and plastic cups. The Airport recycles most of these materials as well as cardboard and glass.

Paper

It is recommended that the Commission expand the paper recycling program to additional areas, including the maintenance/SRE, and ARFF facilities, and encourage increased recycling of paper by employees, tenants, and passengers. Doing so reduces the environmental impacts associated with landfilling this material and manufacturing virgin paper.

LSE is currently recycling paper (printer paper, mail, envelopes, and other items) collected from the administration offices and the public areas of the terminal. These paper streams are commingled with other recyclables.

The Airport may want to consider recyclable alternatives to shredded paper, and ensure that only confidential documents are shredded while other paper is recycled in the interim.

It is recommended that the Commission collaborate and coordinate with the airlines to evaluate adding paper items from deplaned waste to this program, if they are not already recycled. Waste magazines and newspapers are generated aboard commercial flights and when they expire on the newsstand.

Plastic Bottles and Aluminum Cans

It is recommended that the Airport improve the current program and expand to additional areas. Increased recovery of plastic bottles by employees, tenants, and passengers reduces the environmental impacts associated with landfilling this material and manufacturing virgin plastic. LSE recycles plastic bottles,

aluminum cans, and glass collected in the terminal building. Recycled plastic bottles, aluminum cans, and glass are comingled and mixed with paper.

It is recommended that the Commission collaborate and coordinate with the airlines to evaluate adding plastic bottles from deplaned waste to this program.

It is also recommended that feedback be provided to the tenants on the progress and performance of this program and solicit their feedback regarding improvements that could be made to increase or support their participation.

Facilities staff noted some concerns about the ease of separating aluminum cans for redemption. The Airport should consider improving this process along with providing containers for storing aluminum cans prior to redemption. The cans are currently stored in plastic bags, which become waste. A large container would simplify storage and reduce non-recyclable plastic bag waste.

Plastic Cups

It is recommended that the Commission collaborate and coordinate with the airlines to evaluate adding plastic cups from deplaned waste to the recycling program.

Cardboard

It is recommended that the Airport continue to recycle cardboard. If their hauler has an option to do so, the Airport may want to consider collecting and managing this material separately from the comingled recyclable stream; as it would protect the value of the cardboard by reducing contamination from liquids and requiring less processing after collection.

It is also recommended that feedback be provided to the tenants on the progress and performance of the cardboard collection and solicit their feedback regarding improvements that could be made to increase or support their participation. Marketing this program to all the terminal tenants could result in additional participation and remind existing participants of the program's specific requirements

Glass

It is recommended that the Airport continue to recycle glass and work to convert more of the glass from the waste stream to the recycling stream. The Airport reportedly does not generate much glass; however, the recycling program does include glass recyclables, which are comingled with other recyclables. Glass is collected from the terminal at the existing recycling stations.

Other Recyclables

As other recyclable materials are identified in LSE's waste stream, it is recommended that the Airport work with the waste hauling contractor to design and implement strategies to separate, collect, and process these materials.

Green Waste

LSE currently uses mulching lawnmowers to reduce green waste at its source. It is recommended that the Airport explore further opportunities to align the facility's practices with the waste hierarchy; for example, reusing material where possible (chipped branches as mulch), composting (via the local facility), and disposing of the material on or off site as a last resort.

Food Waste Composting

According to industry case studies, food waste is typically a major component of the waste stream at an Airport (on average, 35 percent). As described in Section 5, the EPA's food recovery hierarchy assigns priority to composting of food waste over landfill of this material (after using it to feed people as discussed under Reduce and Reuse). Composting is the process of decomposing food and other waste into a nutritious soil additive.

Composting of food waste at LSE is largely dependent on the availability of a local composting facility interested in accepting this material. The local yard waste composting site newly accepts food waste for compost composed of vegetables and fruit, flour and grain items, and coffee grounds, but no meat or paper products.

In a terminal, pre-consumer food waste (waste generated by food preparation activities) is generally easier to compost because restaurant employees are at the facility more frequently and on a more regular basis than passengers, so they are easier to train and educate on composting practices and requirements. The specific items accepted by a composting facility are dependent on that facility's design and the process used to break down the waste; the local facility accepts only vegetables and fruit.

One option for easing into composting gradually is to first implement a composting program for coffee grounds generated by the restaurant and break areas in the terminal. Coffee grounds have a pleasant odor, are easily identifiable (therefore easy to separate), are typically uncontaminated by other materials, and are generated in a predictable manner and quantity. Once tenants are comfortable composting coffee grounds, other materials can be added by name (banana peels, apple cores, etc.) and/or by type (fruits, vegetables, etc.) until all food waste appropriate for composting is included.

Paper Products

If a commercial composting facility that can handle paper products becomes available in the area, the Airport may wish to collect paper towels and other paper products (napkins and tissues) for composting. Composting is environmentally preferred over landfilling this material.

No modifications to the restroom paper towel dispensers or garbage bins would be needed to implement paper towel composting. Alternative bins would need to be conveniently located and clearly labeled to accept other waste generated in the restrooms that is not paper towel, and the bins reserved for paper towel should be labeled "Paper Towel Only – Collected for Composting" (or similar) to instruct use and explain how this material is managed. Paper towel collected from the restaurant kitchen could be added to the container(s) used to collect food waste for composting.

F. Education and Outreach

Under the existing program, education of and outreach to Airport employees, tenants, contractors and passengers is primarily accomplished through container signage in the terminal. To supplement these efforts, it is recommended that LSE improve the in-terminal messaging for passengers and provide brief, clear instructions for recycling. Providing clear, instructional signage at the recycling stations or recycling bins can improve passenger participation and reduce contamination. See Section G below for information about signage.

It is recommended that LSE provide training for employees, tenants, and contractors that explains the recycling program, including its purpose and requirements. Such a training program will promote program participation and compliance, resulting in increased recycling and reduced contamination. In addition, training can designate a contact and a mechanism to receive feedback and ideas for improvement.

The format of employee training could take any number of forms, including emails, meetings, posters, etc. The content of such training should include:

- Reminders about the materials that are accepted for recycling at the Airport and the location of the containers to be used for the program,
- Information about purchasing requirements, and
- Information about the positive effect the program is having on LSE's environmental impact.

Information and participation from the waste collection contractor should also be incorporated into the training program. In addition, different stakeholders and organizations involved in collection, housekeeping, recycling, composting, and other waste activities could also be asked to provide content or to be present during training.

To use employee time as effectively as possible, waste training could be combined with other trainings or meetings. Once a training and education program is implemented, it is recommended that the Airport actively maintain such a program to facilitate its continued success. The content of trainings should be updated as the program changes and grows.

LSE should consider providing introductory level information to new tenants and provide training materials such as postings, postcards, etc. to existing tenants for use with their employees. As some airport tenants may experience significant employee turnover, providing this information on a regular basis (for example, annually) will help keep everyone up to date on the program.

Once a training and education program is implemented, it is recommended that LSE actively maintain such a program to facilitate its continued success. The content of trainings should be updated as the program changes and grows.

G. Containers and Bins

It is recommended that the Airport consider one bin style throughout the airport to increase consistency. LSE currently uses a mix of bin styles; some of these are trash-only bins, while others include trash and recycling. Standalone garbage cans should be removed so recycling is available at every location that a trash can is available; this arrangement decreases contamination and increases participation. Top facing signage and restrictive lids on recycling and trash cans have been shown to educate and instruct passengers to separate materials appropriately. Where current trash cans are removed or replaced, these containers could be repurposed as recycling containers in other spaces for comingled or single stream recyclables (in conference rooms and offices for paper, in breakrooms for bottles and cans, in the SRE and ARFF facilities, etc.).

H. Signage and Labeling

The Airport's recycling signage could be expanded and improved. The recycling stations in the terminal are labeled for commingled recycling, but LSE should consider providing additional signage adjacent to recycling stations that elaborates on the Airport's program and provides direction for passengers. New signage should include color, images, and short, clear, instructive text to improve understanding of which items are recyclable and which should be thrown away.

A key location for additional signage is in the security checkpoint queuing area in the terminal. As described in Section 3, the TSA restrictions compel the generation of waste, and items discovered in passenger luggage must be disposed of in accordance with the agency's policies. In addition, restricted items discovered in passenger luggage by TSA can prompt additional security screening that increases congestion and wait times in the security line. Clear signage in this area would help educate or remind passengers about the restrictions as well as their options to comply with the restrictions to reduce wait times and without throwing these items away. Signs encouraging passengers to empty their beverage containers and properly recycle could also be added in the security queuing area.

Signage on the recycling dumpster should be updated to reflect that commingled materials are accepted. The current "paper only" signage causes confusion for tenants and staff.

I. Other Recommendations

In addition to the strategies recommended above, the following strategies are recommended for LSE's waste and recycling program.

Contracts and Leases

As described in Section 4, contracts are a vehicle through which the Airport can influence tenant behavior, including recycling. As contracts and leases expire, extend, or renew, it is recommended that the Airport consider revising the new contract language to include waste management requirements or preferences, for example, support of the recycling program. This could be a general clause stating a preference that tenants reduce, reuse, and recycle where practicable or specific information about recycling, reuse, or waste reduction objectives and requirements. Another approach is to update the City's Airport Ordinance

to include recycling requirements and preferences and ensure each contract or lease requires adherence to these policies.

Purchasing Policies and Requirements

The Airport's existing purchases may create waste; specific purchase information was not available for this project. It is recommended that the Airport (or City) consider adopting a purchasing policy that prioritizes items that are durable (versus disposable), reusable, recyclable, compostable, and/or made from recycled content. Once established, this policy could be shared with the Airport's tenants to encourage their own adoption of sustainability-minded purchasing practices.

Additional Facilities and New Development

The Airport may wish to consider expanding the recycling program to additional areas, for example, in the buildings and activities that were excluded from this plan. Expanding recycling and waste reduction to areas outside the Airport's control or influence will require cooperation and collaboration with the operators of those areas as well as with their housekeeping and waste hauling contractors. Expansion could be as simple as encouraging these areas to recycle and acting as a resource for their questions or as complex as assisting these areas with an evaluation of their facility and/or container selection and signage design.

As the Airport grows and changes, it is recommended that recycling and waste management be considered as a part of designing and constructing new development projects. This could be accomplished by establishing construction specifications that outline waste management requirements or preferences for Airport projects (for example, any landfill diversion rate requirements or recycled-content material preferences) and involving the waste collection contractor in the design and planning of new facilities. The operation and maintenance of new facilities under the control or influence of LSE, once constructed, should be included in the Airport's recycling program (for example a new general aviation hangar development).

Any expansions of the existing program should be designed with care to maintain consistency and compatibility with the program in the terminal, administration offices, and other established areas.

J. Continuous Improvement

It is recommended that LSE maintains and implements improvements to the recycling program by following the Plan Do Check Act cycle.

Plan

The recommended strategies and supporting references make up the "plan" portion of the process. Defining success (for example, something like 45 percent recycling by 2025), establishing materials and areas of focus, collecting baseline information (waste audit, surveys, etc.), identifying sub-goals, and identifying strategies are all part of planning. In the future, additional areas of focus, baseline measurements, and goals will likely be needed.

Do

Implementation of strategies included in this plan represents the “do” portion of the process. This involves implementing the recommendations in this plan and making progress toward achieving the goals. In “doing,” the Airport will continue developing a culture of awareness for waste management and will begin to shape the practices and processes for improving and optimizing its activities associated with reduction, reuse, recycling, composting, and other waste management elements at the facility.

Check

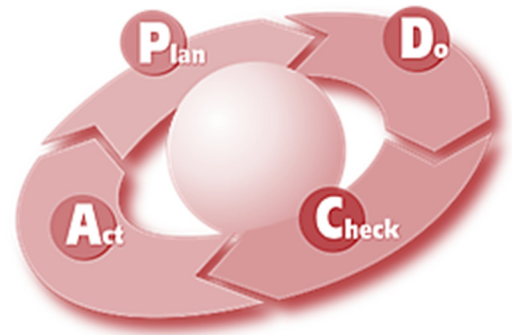
As strategies are implemented, the “check” portion of the process involves reporting that requires regularly tracking and checking the progress toward meeting the goals. The Airport has finite resources (financial, staffing, capital, etc.), therefore, the management and tracking of the plan must not be unnecessarily arduous. If tracking and checking become too difficult or time consuming, the entire plan may suffer. Checking may require the Airport to develop and use tools for measuring success and identifying areas for improvement, including a mechanism for feedback and process for reviewing suggestions.

The following scenarios may trigger re-evaluation of the program and/or the constraints described in this document:

- New state recycling laws, requirements, or goals
- New LSE programs or goals
- New City of La Crosse programs or goals
- New La Crosse County programs or goals
- New local infrastructure, for example, commercial composting facility
- Changes within or expiration of franchise agreement with waste hauling contractor(s)

Act

The “act” portion of the process encompasses taking what has been learned in the previous stages and actively responding. It can be helpful to ask, “What did we learn?” and “How can we do better next time?” By re-evaluating the strategies, activities, goals, and metrics, adjustments can be identified and put into action.



It is recommended that meetings on waste and recycling be held on a regular basis to drive the continuous improvement cycle (review the recycling program and plan and implement improvements/adjustments). It is further recommended that these meetings include a representative from each of the following areas: the waste hauling company, the airlines serving RDM, the restaurant tenant, other terminal tenants, a hangar tenant, the Redmond community, and the traveling public.

K. Recommendations Summary

The recommendations outlined in this document do not require major capital improvements and were designed to be compatible with LSE's in-progress master plan, the existing recycling program, and other airport requirements.

Table 6 summarizes recommendations for the LSE waste and recycling program.

Table 6: Recommendations Summary

LSE Waste and Recycling Program Recommendations

Objectives and Targets

- Set SMART goals (see Section 7).

Tracking and Reporting

- Regularly estimate and track volume of waste to landfill, volume of material collected for recycling, recycling rate, and costs for waste and recycling services.
- Assess waste generation, landfill, recycling, and cost trends for issues or opportunities for improvement.
- Establish a regular reporting schedule; proactively provide information about the program.

Reduce and Reuse

- Substitute disposable items with durable alternatives.
- Reuse items and materials.
- Support the restaurant tenant’s efforts to donate edible food.
- Collect and donate unopened food, beverage, and toiletry items.
- Encourage reuse by passengers, tenants, and contractors.
- Work with restaurant to find recyclable alternative to Styrofoam packaging.

Paper

- Expand paper recycling program to additional areas.
- Consider recyclable alternative to shredded paper.

Plastic Bottles and Aluminum Cans, Plastic Cups

- Improve separation and storage process for aluminum cans saved for redemption.
- Coordinate with airlines on expanding recycling of deplaned waste.

Cardboard

- Continue to recycle
- Explore a separate stream for this material

Glass

- Continue to recycle

Other Recyclables

- Work with the waste hauling contractor to design and implement strategies for other materials as they are identified in the waste stream.

Green Waste

- Evaluate how this material is managed and explore opportunities to align with the EPA hierarchy.

Food Waste

- Consider composting at LSE.
 - o Start with coffee grounds, then expand to other pre-consumer food waste.

Paper Products

- If an appropriate composting facility is established in the area, evaluate composting at LSE.

Education and Outreach

- Improve in-terminal messaging for passengers.
 - o Provide clear, instructional signage at recycling stations.
- Provide simple, on-going training for employees, tenants, and contractors.

Containers and Bins

- Replace standalone bins with co-located bins.

Signage and Labeling

- Expand and improve signage to elaborate on the program and provide direction, specifically, in the checkpoint queuing area.
- Update signage on recycling dumpster to reflect acceptance of commingled materials.

Contracts and Leases

- Revise new contract language or update the City Airport Ordinance to include waste management requirements/preferences.

Purchasing Policies and Requirements

- Adopt a purchasing policy that prioritizes materials that are durable, reusable, recyclable, compostable, and/or made from recycled content.
 - o Share with tenants to encourage them to adopt their own similar practices.

Contracts and Leases

- Consider revising contract and lease language as the expire, extend, or renew to include waste management preference and support of the recycling program.

Continuous Improvement

- Maintain and improve the recycling and waste program according to Plan Do Check Act cycle.

8. Conclusion

LSE currently has a recycling program in place that includes basic elements and has the potential to be expanded in phases to further reduce the facility's environmental impact. This document has described the existing program and outlined recommended improvements that will allow LSE to potentially increase both landfill diversion and recycling volumes. In addition, this plan documents and supports LSE's compliance with the FMRA of 2012 and FAA guidance for recycling, reuse, and waste reduction.