Appendix 18 Reno-Tahoe Airport Authority Reno-Tahoe International Airport Case Example

Appendix 18
Reno-Tahoe Airport Authority
Reno-Tahoe International Airport (RNO)
Reno, Nevada

The Reno-Tahoe Airport Authority is committed to "building and operating sustainable aviation facilities that protect the natural environment to the maximum extent feasible." Conservation of natural resources by waste reduction and recycling are listed in the Authority's Environmental Policy Statement. To support this commitment, Authority staff aim to make RNO's recycling program as successful as possible based on common sense decisions.

RNO's program was first developed under the Authority's Environmental Management System; the Authority is moving to a more holistic sustainability program. The program includes recycling opportunities for passengers, terminal tenants, and employees. RNO's program includes recycling for all materials currently served by infrastructure in the community and dovetails with the Lake Tahoe community's culture of environmental stewardship.

RNO's Environmental Program Manager is responsible for promoting, monitoring, and reporting on the facility's recycling and waste management activities. Waste collection services and related purchases (dumpsters, bins, etc.) are funded under the Airport Facilities and Maintenance Department's budget; this department manages the agreements with the waste haulers. Airport Facilities and Maintenance staff are responsible for custodial activities in Authority controlled areas; staff from this department also maintain RNO's dumpsters, compactors, balers, and garbage trucks.

RNO has two main hauling contracts: one for waste and comingled recyclables and one for cardboard and paper streams. Additional service providers collect cooking oil/grease, vehicle and equipment fluids, batteries and tires. The City of Reno has exclusive franchise agreements in place for solid waste collection and disposal services. RNO must use the City's franchised company for waste collection and is subject to the terms of the City's agreements, including fees and services. This may limit the Authority's options when contracting for these services and prohibits RNO from transporting waste materials off Airport property. RNO was able to negotiate an on-call contract with a City approved waste hauler; prior to this adjustment, RNO was serviced on a scheduled basis. Now, the facility's containers are full before the material is collected, resulting in significant cost savings.

Airport staff transport recyclable materials (except cardboard) using Airport-owned trucks and other equipment. This affords RNO access to more choices of recycling facilities. It also gives RNO the abilities to haul when convenient (based on quantity accumulated) and to be more selective (choose recycling facilities based on distance and rebates available.) In this arrangement, RNO does not pay for recycling collection; any fees charged by the recycling facility accepting the material are subtracted from the material rebates owed to RNO.

Copy machines and printers in the RNO's offices are set to default to double-sided printing, which reduces paper usage and waste. Cleaning products used by Airport staff are purchased in bulk and concentrated forms; reducing waste by decreasing the amount of packaging generated by these supplies. RNO

purchases some printer paper that contains recycled fibers. RNO also practices waste reduction as specific opportunities arise. For example, in April 2011, RNO donated Meals Ready to Eat (MREs) to a local food pantry instead of landfilling this food.

Passengers have access to more than twenty recycling stations made up of three conjoined compartments. These recycling stations are labeled for “bottles & cans,” “paper,” and “litter.” The recycling stations are supplemented by separate garbage cans (Figure 1). RNO provides a water bottle filling station in the terminal (Figure 2) to encourage passengers to refill disposable and reusable water bottles.

Some of the waste generated at the annual Burning Man festival (which takes place about 130 miles from RNO) is disposed of at the Airport as festival attendees travel home. The Facilities and Maintenance Department provides additional receptacles during the days following the festival. These include large containers for waste and a fenced area for bicycle donation. Bikes collected following Burning Man are given to a community organization that repairs them and donates them to youth in the area.

To facilitate tenant participation, Authority staff offer immediate feedback during recycling inspections and foster two-way communication regarding issues and ideas for improvement. The Authority passes the cost for waste disposal to terminal tenants via their rent charges. This creates a financial incentive for tenant participation in the recycling program; as waste disposal costs decrease, rent charges decrease.

Education and outreach for Authority employees, airlines, tenants, contractors and passengers is primarily accomplished through container signage/labels in the terminal and on the dumpsters. The Authority also collects staff feedback about successful program elements and those in need of improvement. Staff from the Facilities Department are champions for the program and provide ground-level insight. The Authority is constantly monitoring and evaluating the program. Trouble areas are addressed quickly to disrupt formation of bad habits. Resource gaps are evaluated based on the subsequent loss of recyclable materials to the landfill-bound stream and strategies are designed to build on the results of previous efforts.

RNO’S program is described in more detail in the *Reno-Tahoe International Airport Master Plan Update Recycling, Reuse and Waste Reduction Plan*, attached at the end of this case example.

Figure 1: Terminal recycling stations, courtesy of Reno-Tahoe International Airport.

Figure 2: Terminal Drinking Fountain and Water Bottle Filling Station, courtesy of Reno-Tahoe International Airport

AIRPORT RECYCLING, REUSE, AND WASTE REDUCTION PLAN

Reno-Tahoe Airport Authority (RTAA or Airport Authority), owner and operator of Reno-Tahoe International Airport (RNO or the Airport), is completing an Airport Master Plan (Plan) update for the facility. The Federal Aviation Administration (FAA) Modernization and Reform Act of 2012 (FMRA) requires the effort to include planning for solid waste and recycling. To meet this requirement, the consultant worked with RTAA to complete a subtask to the Master Plan update. The subtask consisted of assessing the Airport's existing recycling program and recommendations for strategies to divert waste from the landfill such as waste reduction, reuse, and recycling.

Executive Summary

As of early 2017, RNO has an active waste management plan for several materials in different areas at the facility. Various stakeholders are practicing recycling and other waste management strategies.

The consultant conducted facility walk-throughs, waste composition studies, and interviews with Airport Authority staff as well as discussions with some of the Airport's tenants to document the existing practices and identify areas of potential opportunity to increase and improve recycling participation to divert more waste from the landfill. Information about the existing program and potential enhancements formed the basis for recommendations appropriate for the Airport's operations, waste streams, and other influencing factors.

Highlights of these recommendations include:

- Establish goals and objectives;
- Track and communicate progress;
- Evaluate the opportunity to collect and donate unopened food, beverages, and toiletries;
- Continue plastic, aluminum, glass, cardboard, paper, metal, pallet, and other recycling programs;
- Improve recycling through coordination with airlines, addressing materials from McDonalds, and other strategies;
- Continue to reuse materials/other items where possible;
- Implement simple education program for employees, tenants, and contractors;
- Expand and improve signage, specifically in pre-security areas and in security checkpoint queuing area;
- Consider improvements to contracts/leases and purchasing policy/practices; and
- Maintain and improve recycling program according to Plan-Do-Check-Act (PDCA) cycle.

This developed range of recommendations gives the Airport Authority and program stakeholders flexibility to implement those strategies that are compatible with changing conditions and available resources (such as labor and space). At the same time, the recommendations provide an opportunity for RTAA to increase landfill diversion and practice waste reduction, reuse, and recycling over time.

Introduction

Regulatory Background and Project Purpose

Section 132(b) of the FAA 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 airports that have a master plan in effect, or plan to prepare or update a master plan, and that receive Airport Improvement Program (AIP) funding for an eligible project, ensure that new or updated master plans address issues related to solid waste recycling, which 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, and (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. This guidance applies to Federally-obligated airports preparing or updating a master plan, carrying out other planning efforts, or undertaking a standalone recycling project.

The scope and nature of an airport's waste and recycling program and documented plan are dependent on several factors that include: 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; and the willingness of an airport and its tenants to implement recycling and other strategies.

This airport recycling, reuse, and waste reduction plan upholds RTAA efforts to remain in compliance with FMRA and in accordance with the FAA's guidance memo as part of the on-going Airport Master Plan project. The plan documents and allows RTAA to assess the Airport's existing waste and recycling program based on the factors and variables listed above and provides recommendations for improvement. The extent and accuracy of available information governed the content of this plan.

Airport Description

Reno-Tahoe International Airport is a small hub commercial service airport owned and operated by the RTAA. The President/CEO of RTAA is supported by an executive team and more than 250 staff members between facilities and maintenance, human resources, economic development, finance and accounting, planning and engineering, marketing and public affairs, and operations and public safety functions. The Airport Authority and its staff provide facility maintenance (buildings and infrastructure), parking services, snow removal, and emergency services.

Eight passenger airlines serve RNO and are responsible for flight arrivals and departures, baggage, and ticketing. Flights offered by Alaska (AS), Allegiant (G4), American (AA), Delta (DL), jetBlue (B6), Southwest (WN), United (UA), and Volaris (Y4) connect RNO to nearly two dozen destinations. The Airport is also home to cargo operations conducted by DHL, FedEx, and UPS. More information about the Airport, including operations, activity levels and airline information, can be found on the Airport's website and in the Airport Master Plan Report.

Waste Definitions and Plan Focus

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

- 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.
- Food waste is either food that is not consumed or the waste generated and discarded during food preparation activities. Food waste and green waste make up waste known as "compostables."
- 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."
- 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.
- Construction and Demolition Waste (C&D) 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 municipal solid waste 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, specifically hazardous waste, universal waste, industrial waste, or waste deplaned from international flights because additional federal, state, and local laws regulate the handling, recycling, and disposal of these materials. C&D debris that is subject to special requirements and requires special handling is not included in this plan.

Key Airport Buildings and Plan Scope

The Airport is a complex facility made up of several buildings and other infrastructure. Information about each of the buildings at RNO is available in the Airport Master Plan Report.

RTAA has direct control of waste management in some buildings and areas and has influence but not direct control in other buildings and areas. Per FAA guidance, areas over which the Airport Sponsor (in this case, the Airport Authority) has direct control or influence should be included in the recycling, reuse, and waste reduction plan; areas outside Airport Sponsor control or influence may be excluded.

The intent of the term "control" is that the sponsor has responsibility for or management of waste activities in these areas, including provision of trash cans and recycling bins, collection of waste and recyclable materials, etc. The intent of the term "influence" is that the sponsor can require, encourage, guide, and support waste management in certain areas, but would need to work with tenants or other stakeholders to implement or improve practices within their spaces.

The Airport Authority has control over waste management in spaces dedicated for RTAA and Airport use, such as offices, and those where RTAA/Airport employees work, such as the maintenance areas and areas staffed by RTAA firefighting and security employees.

As the owner of the terminal building and Airport property, the Airport Authority has influence (during lease agreement negotiations and contract renewal) over activities related to waste management in leased areas, including those in the terminal and other facilities. RTAA leases areas and spaces to commercial airlines, specialty item concessions, food service concessions, rental car agencies, Nevada Air National Guard (NVANG), and a hotel company; these tenants are responsible for managing waste in their areas (directly or through RTAA's program). The Transportation Security Administration (TSA) is responsible for managing waste in the areas they lease; however, they have access to RTAA provided bins and dumpsters and can use these containers to dispose of recyclable and waste materials.

Two sit-down restaurants are within the terminal, one pre- and one post-security, as well as additional food and beverage options within the concourses. Each of the concourses has a bar; these typically generate consistent volumes of glass. All of the food and beverage concessions are managed by SSP America, except McDonalds.

The Airport Authority also has influence over the ground transportation areas (where taxi and limousine companies as well as Transportation Network Companies like Uber and Lyft operate); the Airport Authority permits these companies and provides waste receptacles and restrooms in the ground transportation queuing areas.

In terms of general aviation and cargo operations, RTAA leases facilities to a fixed base operator (FBO) and two cargo companies who are responsible for the waste generated in their areas. Tenants at RNO also include Civil Air Patrol-Nevada Wing, Dassault Aircraft Services, Flying Start Aero, Global Aviation Services, Reno Flying Service, and WhisperJet Helicopters. The Airport Authority's Economic Development Department administers the Airport's tenant leases.

The Airport Authority has limited control and influence over waste management in the Airport Traffic Control Tower operated by the FAA as well as the NVANG base; these areas are excluded from this plan.

Table G-1 summarizes the areas at the Airport under the control or influence of the Airport Authority.

Table G-1: Waste Management under Reno-Tahoe Airport Authority Control and Influence

Under RTAA Control	Under RTAA Influence	Outside RTAA Control or Influence*
• **RTAA Offices** • **Airport Staff Areas** • **Passenger Areas** • **Terminal Restrooms** • **Aircraft Operations Area (AOA)** • **Fire/Police/Security Operations** • **Maintenance Activities**	• RTAA Owned and Leased Areas • Fixed Based Operator (FBO) Area • Hangars • Ground Service Equipment Areas (ramp) • Cargo Areas • • Rental Car Facilities – Terminal • Rental Car Facilities – Outside Terminal • Hyatt Hotel • Ground Transportation Areas • Transportation Security Administration Areas	• FAA Airport Traffic Control Tower • NVANG Base • Airplanes

Source: Airport Authority Staff
*Excluded from this Plan

Existing Program

The Airport has a recycling program maintained through the collaboration of several departments. The following section describes the various elements of this program.

Drivers

Recycling and conscientious waste management at RNO is driven by RTAA's commitment to "building and operating sustainable aviation facilities that protect the natural environment to the maximum extent feasible." RTAA has devoted resources, including financial and employee labor, to establishing and promoting a recycling program and to designing strategies to address waste generation at RNO.

Historically, the Airport's Environmental Program Manager managed environmental efforts at RNO, supported by the efforts of the in-house environmental committee, made up of members from all departments. In 2008, RTAA established an Environmental Management System (EMS) and has programs in place for recycling and waste reduction, energy conservation, and contamination remediation. More information about these programs and a copy of RTAA's Environmental Policy Statement are available on the RTAA's website.

The Airport is moving to a waste management model based on economic viability, operational efficiency, natural resource conservation, and social responsibility (EONS). While RTAA's environmental committee and EMS are in a transition period, they have had a lasting impact on waste management at the Airport.

Environmental Management System

The Airport's current recycling program aligns with the facility's EMS. The July 2009 EMS manual listed solid waste management as an aspect of the program. This aspect scored the highest of the facility's identified impacts, tied with C&D debris management. The manual also noted waste generating activities from training and purchasing as aspects and impacts of the facility's operations. Based on the ranking of solid waste management as a significant impact, the RTAA developed *Environmental Management Program 08-01 Recycling* to work towards a goal to reduce the solid waste stream by ten percent. RTAA also developed an operational control procedure to manage related activities. The development of *Environmental Management Program 08-06* provides guidance to manage asphalt and concrete reuse. While these documents are somewhat dated and the Airport is converting to an EONS-based program, the existing program still generally conforms to these programs and procedures.

Roles and Responsibilities

The Airport's Environmental Program Manager is responsible for promoting, monitoring, and reporting on the facility's recycling and waste management activities. Waste collection services and related purchases (dumpsters, bins, etc.) are funded under the Airport Facilities and Maintenance Department's budget; this department also manages the agreement with the waste hauler. As noted previously, the Economic Development Department oversees the Airport's tenant leases.

Airport Facilities and Maintenance staff are responsible for custodial activities, including housekeeping and recycling and waste collection, in the areas under RTAA control like the administration areas and passenger terminal. Staff from this department also maintain the Airport's dumpsters, compactors, balers, and garbage trucks. Airline, terminal tenant, cargo, and FBO employees collect waste and recyclables in their areas and transport these to the appropriate dumpsters, compactors, and balers provided by the Airport.

Tenants within the Airport fence, except the NVANG, use RTAA's dumpsters. Airport Facilities and Maintenance staff use the Airport's trucks to collect this material.

The NVANG has a long-term lease with RTAA and secures its own waste services from Waste Management. Atlantic Aviation (FBO) uses RTAA's dumpsters and collection services; employees of the FBO place waste materials in the airside containers, including comingled cardboard, paper, bottles, and cans. Plastic shrink wrap is placed in a cardboard dumpster located in the cargo area; this material is compacted with the cardboard for processing by High Desert. The car rental companies have their own contracts with Waste Management for waste generated in areas outside the Airport Operations Area and RTAA waste service area. Based on informal inspections conducted by the Environmental Program Manager, these tenants do not have formal recycling programs or designated recycling containers; however, they may collect bottles and cans and take these to the recycling center.

The Hyatt Hotel has its own contract with Waste Management as well. Based on information from the Environmental Program Manager, the hotel does not have a formal recycling program; however, they may be separating cardboard. All tenants within the terminal are responsible for housekeeping in their own areas, including transfer of waste and recyclables to the RTAA's dumpsters located outside the terminal building. RTAA has attempted to make recycling as convenient as possible for these tenants by placing the dumpsters just outside the exterior doors; however, it is up to the tenants to separate materials properly and place them in the appropriate containers.

The Airport's waste collection contractor, Waste Management, is responsible for managing the waste and comingled recyclable materials generated by the Airport. High Desert, a local recycling company, manages the cardboard and paper single streams. A third party contractor collects cooking oil/grease from the Airport restaurants; vehicle and equipment fluids, batteries and tires are collected by other third party service providers. Construction contractors manage waste generated during improvement projects at the Airport; as applicable, concrete and asphalt generated during such projects is reused at the Airport or used locally at other construction projects.

TSA is responsible for waste generated by passenger and baggage screening activities. TSA employees collect hazardous waste in designated containers at the checkpoints and other locations; the TSA contracts with a third party vendor to properly dispose of these materials.

Infrastructure/Operation and Maintenance Requirements

There are over 30 recycling bins as well as over 90 garbage cans in the RTAA offices; these containers are located in common areas and individual offices. These bins are emptied by Airport Facilities and Maintenance staff.

Passengers have access to a network of recycling bins and garbage cans throughout the terminal, including more than twenty recycling stations made up of three 2 cubic yard conjoined compartments. These recycling stations are labeled for "bottles & cans," "paper," and "litter." The recycling stations are supplemented by over 120 garbage cans, each with a capacity of one cubic yard. Airport Facilities and Maintenance staff also empty these containers. See **Figure G-1** for photos of the recycling stations and garbage cans.

Figure G-1: Recycling Stations in RNO Passenger Terminal

Source: Reno-Tahoe International Airport

The Airport Authority owns and maintains several dumpsters for material collected from Airport buildings. Nineteen garbage dumpsters are located outside the terminal's two concourses, each has a capacity of six yards. There is also a six-yard dumpster outside the FBO facility.

There are 19 dumpsters, one compactor, and two balers for recyclable materials, as shown in **Table G-2**. These containers and equipment are positioned around the terminal and in the maintenance area. The compactor and balers are used to consolidate cardboard until it is collected for recycling.

Table G-2: RNO Waste and Recycling Infrastructure

Quantity	Capacity	Type	Material
5	6 cubic yard	Dumpsters	Cardboard
1	3 cubic yard		
1	30 cubic yard	Compactor	
1	300 pound	Balers	
1	500 pound		
7	6 cubic yard	Dumpsters	Comingled Recyclables
3	3 cubic yard		
2	6 cubic yard	Dumpsters	Paper
1	3 cubic yard		
Source: Airport Authority Staff			

Examples of the waste and recycling dumpsters located at the Airport are shown in **Figure G-2**.

Figure G-2: Waste and Recycling Dumpsters outside RNO Terminal

Source: Reno-Tahoe International Airport

As needed, Airport Facilities and Maintenance employees empty the facility's dumpsters into two Airport-owned garbage trucks, one for recycling and waste, and one exclusively for waste, and transport the material to a specified location on Airport property. The waste collection contractor (Waste Management) then takes over conveyance of the waste to a landfill in the area.

The Airport Facilities and Maintenance employees load comingled recyclable materials into one of the Airport's garbage trucks (after cleaning the truck body at an on-site wash rack) then transport the recyclable materials to the designated transfer station. The trucks are front loading garbage trucks; one, used for waste and recycling, has a capacity of 35 cubic yards, and the second, used for waste exclusively, has a capacity of 38 cubic yards. One of the Airport's garbage trucks is shown in **Figure G-3**.

Figure G-3: RTAA Garbage Truck and Dumpsters

Source: Reno-Tahoe International Airport

The Airport has designated storage areas for baled cardboard, recyclable metal, and pallets (see **Figure G-4**). High Desert Recycling is on-call to collect the cardboard generated at the Airport once 22 bales are accumulated or the compactor is full, and then processes and markets this material. Local recycling vendors handle recyclable metal or pallets once enough of these materials are collected.

Figure G-4: Storage Areas for Pallets, Metal, and Baled Cardboard

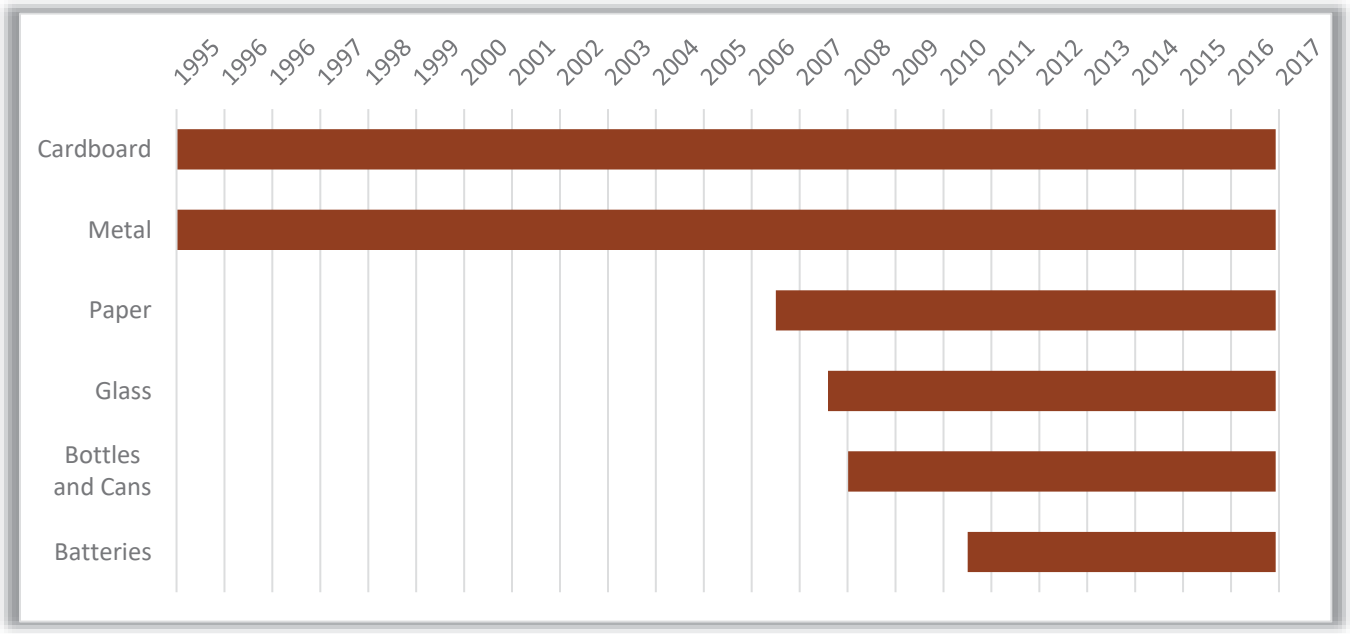
Source: Reno-Tahoe International Airport

Recycling, Reuse, and Waste Reduction Efforts

Recycling

Recycling is the processing of materials to turn them into 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. Using the infrastructure and resources described above, the Airport currently recycles nearly a dozen different streams: paper; plastic bottles and aluminum cans; cardboard; metal; glass; batteries; pallets; printer cartridges; electronic waste; cooking oil; fuel, oil, and antifreeze; and other specialty streams. **Figure G-5** shows the timeline of introduction of some of these programs.

Figure G-5: Timeline of RNO Recycling Programs



Source: RTAA Staff

The Airport has recycled cardboard, metal, and pallets since the mid-1990s. The Airport has been recycling paper since July 2007. Glass recycling at the Airport has been in place since August 2008. This material was initially collected separately, but is now included in the comingled stream. Separation of glass was discontinued in 2008/2009 when this material became expensive to haul and undesirable in the market. Plastic bottles and aluminum cans have been collected together from the time that recycling for these materials was initiated in January 2009. Batteries generated at the Airport have been collected for recycling since July 2011, including rechargeable lithium, nickel, and lead batteries. The Airport also recycles printer cartridges and electronic waste. Airport tenants recycle cooking oil, fuel, oil, antifreeze and other specialty streams.

Composting

Composting is the process of decomposing food and other waste into a nutritious soil additive. The Airport does not currently compost green waste or food waste; these materials are landfilled.

Energy-from-Waste

None of the waste generated at the Airport goes to a true Energy-from-Waste facility, where waste is treated to generate electricity or heat.

Reuse Programs

In terms of waste management, 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 their original intended purpose or repurposing for different use. Reuse can require purchasing durable materials and items instead of disposable or single use alternatives.

The Airport purchasing practices include efforts to source supplies that contain post-consumer content. For example, the Airport purchases some printer paper that contains recycled fibers. Use of supplies that contain post-consumer content is a form of reuse.

To encourage reuse by passengers, the Airport provides a water bottle filling station in the terminal, as shown in **Figure G-6**. This station allows passengers to refill their durable or disposable beverage containers and reduces the number of single-use beverage containers generated in passenger areas.

Figure G-6: Drinking Fountain/ Water Bottle Filling Station in Passenger Terminal

Source: Reno-Tahoe International Airport

Waste Reduction

Also called “waste minimization,” waste reduction refers to lowering the volume of waste produced at the source. This can be achieved through changing habits and practices, such as printing and purchasing. The Airport currently employs the following practices to reduce the overall amount of waste generated at RNO: double-sided printing, purchasing practices, and refilling of water bottles.

Shared-use copy machines and printers in the administration offices have been set to default to double-sided printing since 2015, which reduces paper usage and waste. Airport staff uses cleaning products purchased in bulk and concentrated forms; this reduces waste by decreasing the amount of packaging generated by these supplies. Additionally, the Airport has installed Dyson Air Blade hand dryers in each of the public restrooms throughout the terminal building to reduce the use of paper towels for hand drying.

The Airport also practices waste reduction as specific opportunities arise. For example, in April 2011, the Airport donated Meals Ready to Eat (MREs) to a local food pantry instead of landfilling this food.

Burning Man

Burning Man is an annual festival that takes place in the Black Rock Desert in Nevada, about 130 miles north of the Airport. Of the approximately 70,000 attendees, more than 17,000 fly through RNO to attend this event. The festival has a robust recycling program and attendees are required to carry all their trash out with them. Some of the waste generated at the festival ends up at the Airport as attendees travel home. The Airport Facilities and Maintenance Department provides additional receptacles during the days following the festival, as shown in **Figure G-7**. These include large containers for waste and a fenced area for bicycle donation. Disposal of hazardous material at the Airport is discouraged. Bikes collected following Burning Man are given to a community organization that repairs them and donates them to youth in the area. Donation of these bikes reduces landfill-bound waste.

Figure G-1: Additional Waste Containers after Burning Man

Source: Reno-Tahoe International Airport

Green Waste, Construction and Demolition Waste, and Other Programs

The Airport also manages waste generated by landscaping and construction activities, universal waste, and hazardous waste.

Airport Facilities and Maintenance personnel manage green waste, such as grass clippings, leaves, and branches and sticks generated during mowing and other landscaping activities. Grass clippings are bagged. The bagged grass clippings and other green waste are currently landfilled. This waste stream is not tracked in the Airport's waste numbers.

During construction projects, contractors completing projects at the Airport reuse asphalt, concrete, aggregate, and other materials wherever possible. Contractors may also remove demolished materials for reuse during other projects in the area. For example, in May of 2016, concrete generated during the demolition and reconstruction of a runway at RNO was recycled as the foundation for a local roadway. C&D waste is not included in the volume or weight calculations detailed in this plan.

The Airport collects lamps (light bulbs) according to universal waste regulations and manages hazardous waste as required by the Resource Conservation and Recovery Act (RCRA) and state law. These programs are not discussed in detail in this plan.

Tracking

The Airport's Environmental Program Manager uses scale tickets provided by the waste collection contractor/disposal facility and recycling facilities along with measurements taken by Airport Facilities and Maintenance to track the weight of materials generated in several of the facility's waste and recycling streams.

The Environmental Program Manager maintains a spreadsheet that records the quantity of compacted waste, cardboard, magazines, mixed office paper, glass and beverage containers (now comingled), and batteries. A copy of this document was provided for review under this project and contains data dating back to fiscal year 2007/2008. The Airport does not currently track the volume or quantity of pallets; printer cartridges; electronic waste; cooking oil; fuel, oil, and antifreeze; or other specialty streams that are recycled.

Costs and Rebates

The Environmental Program Manager also tracks the costs associated with waste and recycling collection and disposal. These records are based on invoices and charges. Rebates received by the Airport for recyclable materials are also recorded.

The Airport is charged per waste pickup by the collection company. According to the data provided by the Airport's Environmental Program Manager, the Airport spent approximately $70,000 each year on disposal of waste over the last decade. Historically, waste was collected from the Airport on a scheduled basis. RTAA gained significant cost savings from converting the Airport's service to an on-call basis and reducing the overall volume of waste generated.

Rebates on recyclable materials are also contributing to cost savings. The Airport spent approximately $700 on recycling annually in the same time frame. In fact, there have been several years when the Airport's recycling rebates outweighed the recycling charges.

Based on information from 2016, the Airport is not currently charged to drop off cardboard, paper, or comingled recyclables. Oil, antifreeze, and batteries are collected free of charge, saving the Airport what it would cost to landfill or otherwise dispose of these materials. In the past, the Airport had been charged service fees and fuel charges for cardboard, magazines, mixed office paper, and glass pick up, when that was still collected separately.

The food service companies receive a rebate for the cooking oil, and the Airport receives rebates for the recycled cardboard. The Airport receives a higher rebate for baled, separated cardboard than for the material in the cardboard compactor or in the comingled stream.

Based on costs for landfilling and the volume of material recycled, the Airport's data shows an average $53,000 a year in costs avoided through recycling and collecting rebates over landfilling. The cost and cost avoidance figures do not include metal, cooking oil, pallets, oil, antifreeze or other streams; however, their inclusion would further demonstrate the financial benefits the Airport is receiving from recycling.

Waste Audit

Rather than a physical waste sort, the Airport's Environmental Program Manager and staff from the Planning and Engineering Department provided information about the areas that generate waste and the types of waste generated in each area. The Environmental Program Manager has informally observed passenger, tenant, and employee waste and recycling related behaviors and, for the purpose of this report, described generally how waste flows through the Airport. This information was combined with aviation industry waste and recycling trends to describe the source, composition, and quantity of waste generated at the Airport. The estimates of program effectiveness and opportunities identified to improve the program are based on this compiled information about the Airport's waste stream.

Quantity

Based on the data described under **Tracking**, the Airport generates approximately 740 tons of waste and 70 tons of recyclables each year. These figures do not account for items collected by third party contractors, waste generated after the Burning Man festival, recycling of C&D debris, or untracked recyclable streams.

The annual generation quantities since fiscal year 2007/2008 are shown in **Table 3**. The estimate of the current generation rates is based on data from fiscal years 2012/2013 to 2015/2016.

Table G-3: Quantity of Waste and Recyclables Generated at RNO

Fiscal Year	Tons Landfilled	Tons Recycled	Total Waste Generated
07/08	1586	51	1,637
08/09	1190	118	1,308
09/10	820	80	900
10/11	896	82	978
11/12	804	78	882
12/13	747	67	814
13/14	751	71	822
14/15	747	63	810
15/16	730	91	821

Case studies and previous waste planning projects indicate an airport's waste stream is approximately 40 percent recyclable, 35 percent compostable, and 25 percent waste that cannot be recycled or composted

based on current technologies. As a result, that 25 percent must be placed in a landfill. Applying these percentages to the Airport's waste stream, it is estimated that the Airport generates 324 tons of recyclable materials and 284 tons of compostable materials while the remaining 202 tons is appropriate for landfill disposal.

Of the total 70 tons captured for recycling at the Airport annually, cardboard recycling captures approximately 51 tons a year between baled and compacted streams. Paper recycling diverts approximately 17 tons from the landfill annually. Based on data from when glass was collected in a single stream, the Airport recycles about 2 tons of glass each year. Together, plastic bottles and aluminum cans are recycled at a rate of approximately five tons per year. The Airport recycles approximately 0.3 tons of batteries each year.

The Airport's accounting department tracks the total volumes, costs, and type of scrap metal recycled annually. Based on data provided by the Airport, approximately five to ten tons of scrap metal is recycled each year. This material is picked up every three to six months; each pickup is between 2,000 and 3,000 pounds. The total quantity of pallets recycled each year is not tracked.

Monthly quantity data recorded for fiscal year 2015/2016 is shown below in **Table G-4**. Data tables for July 2007 to December 2016 are available in the Appendix.

Table G-4: Waste and Recyclable Quantities Generated at RNO (by material, fiscal year 2015/2016)

FY 2015-16	WASTE	RECYCLABLES						
	Total Waste (tons)	Cardboard (tons)	Magazines (tons)	Mixed Office Paper (tons)	Total Paper (tons)	Single Stream (Plastic, Cans, Glass, Paper, and Cardboard; tons)	Batteries (tons)	Total Recycling (tons)
July	64	0.00	0.00	0.00	0.00	0.00	0.03	0.03
August	74	0.00	0.00	0.00	0.00	0.00	0.07	0.07
September	65	4.17	0.00	2.30	2.30	7.13	0.00	13.60
October	50	3.65	3.88	3.88	7.76	0.00	0.03	11.44
November	71	3.64	0.00	0.00	0.00	0.00	0.03	3.67
December	55	5.57	0.00	0.00	0.00	0.00	0.03	5.60
January	53	0.00	0.00	0.00	0.00	6.44	0.03	6.47
February	55	2.51	0.00	0.00	0.00	0.00	0.03	2.54
March	52	3.63	4.33	4.33	8.66	3.48	0.01	15.78
April	59	3.44	0.00	0.00	0.00	0.00	0.03	3.47
May	72	0.00	0.00	0.00	0.00	0.00	0.03	0.03
June	60	18.71	0.00	1.91	1.91	7.73	0.03	28.38
TOTAL	730	45.32	8.21	12.42	20.63	24.78	0.31	91.04

Sources and Composition

All of the buildings and areas listed in **Table G-1** are potential sources of waste and recyclable materials. Based on the scale and diversity of activities taking place at RNO, a varied waste stream can be expected. **Table G-5** lists the buildings and areas evaluated in this plan and the types of waste that are likely generated in each.

Table G-5: Sources of Waste and Recyclables at RNO

Area | Material	Office Paper	Newspapers	Magazines	Plastic	Aluminum	Cardboard	Glass	Food Waste	Paper Products	Liquids	Toiletries	Packaging	Styrofoam	Metals	Green/Yard Waste	Deplaned Waste	Construction and	Other Waste
Airline Terminal Building																		
Public passenger areas Curbs, ticketing lobby, restrooms, security screening queuing area, sterile gate areas, public "meet and greet" spaces, baggage claim area		X	X	X	X			X	X	X	X	X	X					X
Tenant areas Restaurants and retail areas and activities				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, breakrooms	X			X	X			X	X	X								X
Airport Authority Offices	X	X	X	X	X	X		X	X			X						X
Transportation Security Administration Areas	X			X	X				X	X								X
Ground Transportation Areas				X	X				X									X
Airport Operations - Airfield																	X	X

Area | Material	Office Paper	Newspapers	Magazines	Plastic	Aluminum	Cardboard	Glass	Food Waste	Paper Products	Liquids	Toiletries	Packaging	Styrofoam	Metals	Green/Yard Waste	Deplaned Waste	Construction and	Other Waste
Airport Operations - Landside																	X	X
Airport Property (landscaping/maintenance)														X	X		X	X
Other Airport staff areas	X	X	X	X	X	X		X	X			X						X
Fire/Police/Security Operations	X			X	X				X									X
Fixed Based Operator/ General Aviation Hangars				X	X				X									X
Air National Guard Areas				X	X				X									X
Hyatt Hotel	X		X	X	X	X		X	X		X							X

Based on industry averages, the overall weight of waste and recyclables generated at RNO can be broken down by area as shown in **Table G-6**.

Table G- 6: Estimated Generation at RNO by Area/Activity

RNO Area/Activity	Estimated Percent	Estimated Weight
Deplaned	20%	162 tons
Other Airline	24%	194 tons
Administration	3%	24 tons
Public Areas	35%	284 tons
Concessions	18%	146 tons
Total	**100%**	**810 tons**

Prior to comingled recycling, the Airport's tracked recycling stream was primarily made up of cardboard, at about 70 percent on average, with some paper, at 20 percent on average, and the remainder being beverage containers and glass with trace amounts of batteries. The comingled recycling stream has adjusted, since it was first introduced in fiscal year 2015/2016, to about 50 percent cardboard, 20 percent paper, and 30 percent comingled recyclables.

The Environmental Program Manager has noticed issues with contamination, such as trash in the recycling containers, and missed capture, such as recyclables in the landfill bound trash. Where possible, this employee does follow up with tenants to remind them about the recycling program.

According to the Environmental Program Manager, the McDonalds restaurant is a significant source of waste and recyclables including brown paper bags and plastic, and may not have adequate recycling bins nearby to capture these materials.

Purchases

Supplies purchased for an airport can include items that have reusable or recyclable alternatives, such as foam cups. There are also purchases of some items that could be eliminated, for example, by converting paper forms to digital to reduce paper waste generated, and some that indicate scale of the activity at the Airport, such as bin liners and paper towel.

The Airport's Environmental Program Manager collected and provided purchase information from fiscal year 2015/2016 for review under this project. This information provided insight on some of the materials coming into the Airport that will go back out as waste. Other disposable materials are brought on-site by passengers, employees, and vendors. A summary of this information is shown in **Table G-7**.

Based on this information, it is estimated that purchases of disposable items accounts for 22 tons of waste each year. These disposable items include paper coffee cups, single-use shop towels, restroom paper towels, facial tissue, change table liners, and trash can liners (garbage bags). This represents about three percent of the total quantity of waste landfilled by the Airport each year.

Information about items purchased by tenants was not provided for this project.

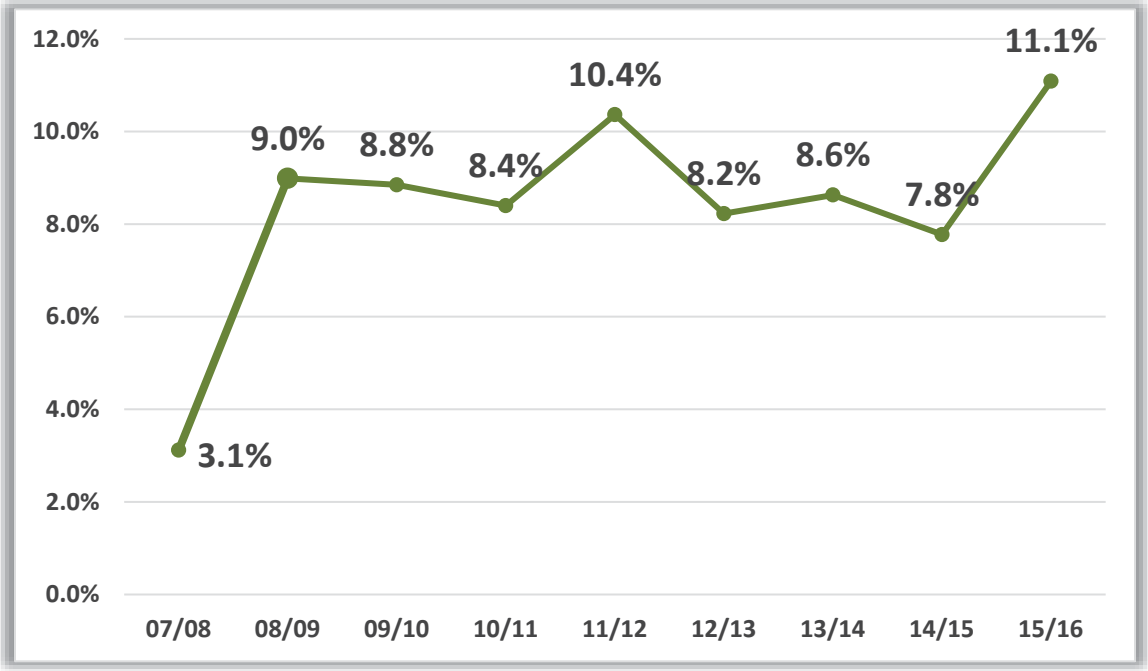
Table G-7: RNO Purchases (disposable items)

Item	Unit	Unit Weight	Units Purchased	Annual Quantity	Annual Weight	
Paper Coffee Cups (12 ounces)	1 case = 1000 cups	1 case = 26.50 pounds	33 cases	33,000 cups	875	pounds
Shop Towels (folded)	1 case = 6 boxes	1 case = 16.5 pounds	35 cases	210 boxes	578	pounds
Restroom Paper Towel (Roll)	1 case = 6 rolls 1 roll = 4000 square feet 1 case = 24,000 square feet	1 case = 25 pounds	700 cases	16,800,000 square feet of paper towel 292 NFL football fields	17,500	pounds
Facial Tissue (folded)	1 case = 30 boxes 1 box = 100 tissues	1 case = 8.5 pounds	34 cases	1,020 boxes 102,000 tissues	289	pounds
Changing Table Liners	1 case = 500 liners	1 case = 8.5 pounds	30 cases	15,000 liners	255	pounds
Trash Can Liner (33"x 39", 33 gallon)	1 case = 150 bags	1 case = 11.58 pounds	1,257 cases	188,550 bags	14,556	pounds
Trash Can Liner (40 " x 46", 50 gallon)	1 case = 100 bags	1 case = 16.56 pounds	400 cases	40,000 bags	6,624	pounds
Trash Can Liner (36" x 48")	1 case = 50 bags	1 case = 35 pounds	88 cases	4,400 bags	3,080	pounds
Trash Can Liner (Restrooms, 10" x 4.25" x 9.75")	1 case = 250 bags	1 case = 4.5 pounds	40 cases	10,000 bags	180	pounds
Trash Can Liner (24" x 32", 16 gallon)	1 case = 1000 bags	1 case = 13.5 pounds	10 cases	10,000 bags	135	pounds
Can Liner Subtotal					*24,575* *12*	*pounds* *tons*
Total					**43,494** **22**	**pounds** **tons**

Performance

Based on the quantity information above, the recycling rate for RNO increased from 3.1 percent in 2007/2008 to approximately 11.1 percent in 2015/2016. **Figure G-8** shows the Airport's recycling rate from 2007/2008 to 2015/2016. The Airport Environmental Program Manager attributes the improvement in recycling between 2014/2015 and 2015/2016 to the adoption of comingled recycling, which is more convenient for users.

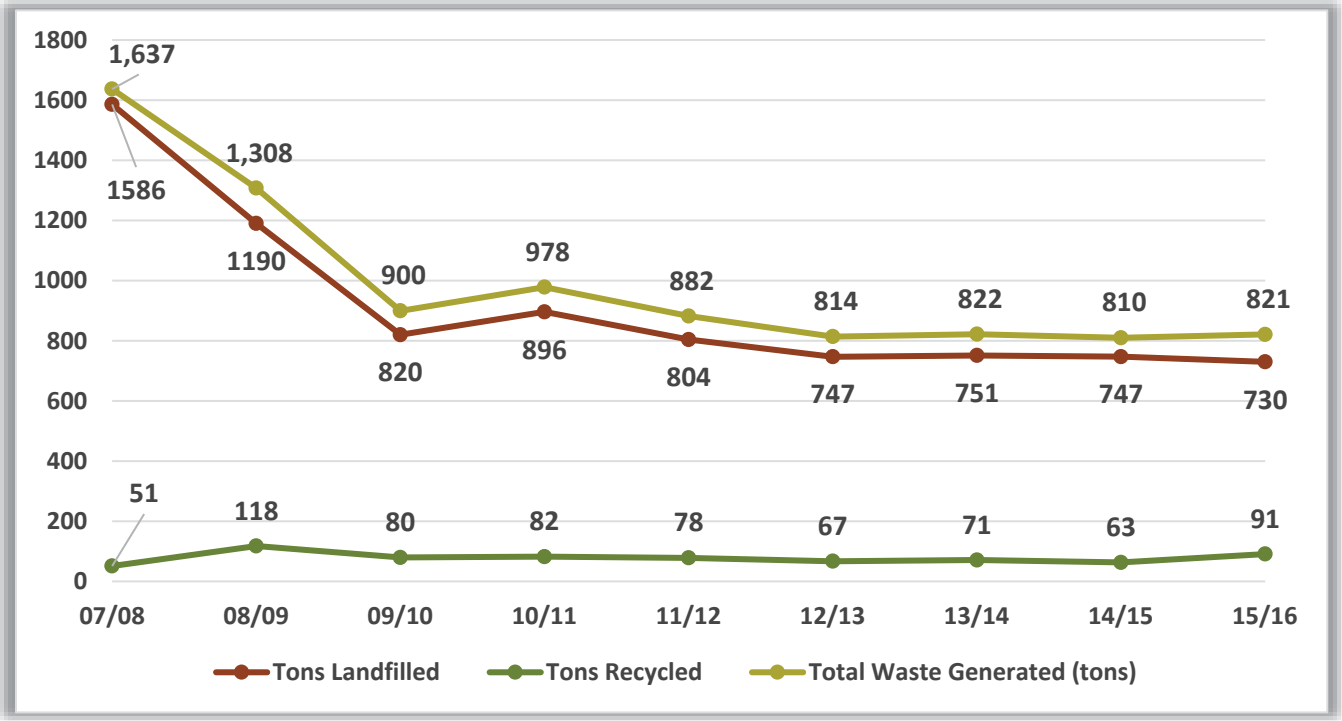
Figure G-2: RNO Recycling Rate



Under the Authority's EMS, a goal was set to reduce the waste stream by ten percent, primarily through recycling. This metric did not include metal recycling or waste generated during Burning Man. Taken as a recycling rate goal (or, "recycle 10% of the waste generated"), this objective was first met in fiscal year 2011/2012 and again in fiscal year 2015/2016. Taken as a waste generation goal (or, "reduce the total quantity of waste generated by 10%"), this objective was met in fiscal years 2008/2009 and 2009/2010 but has not been achieved since. As a goal to reduce landfilling (or, "reduce waste to landfill by 10%"), this objective was met in fiscal years 2008/2009, 2009/2010, and again in 2011/2012.

Overall, the Airport's generation of waste has been declining while material being recycled has been increasing each year over the last decade, as shown in **Figure G-9**.

Figure G-9: Quantity of Waste and Recyclables Generated at RNO



Review of Waste Management Contracts

As noted previously, the FMRA lists the review of waste management contracts as an element of addressing solid waste recycling at an airport. The FAA memorandum titled "Guidance on Airport Recycling, Reuse, and Waste Reduction Plans" explains that the purpose of reviewing these contracts is to "identify opportunities for improving [recycling] program scope and efficiency, as well as identify constraints" and notes that "this information can signal the airport's next opportunity to add recycling, reuse, and waste reduction objectives to existing leases and contracts."

Specific information regarding the expiration, extension and/or renewal dates of the Airport's numerous leases was not reviewed under this project.

Waste and Recycling Contracts

In 2012, the City of Reno entered into franchise collection service agreements with Reno Disposal and Castaway Trash Hauling for the collection and transportation of solid waste and recyclable materials in the City. This consisted of two agreements for each company, one for residential collection and one for commercial collection. The same year, the City entered into a disposal agreement with Refuse, Inc., which gives the company exclusive rights to accept, process, dispose of, and recycle waste and recyclables. Reno Disposal, Castaway Trash Hauling, and Refuse, Inc. are subsidiary companies of Waste Management. Waste Management, through its subsidiaries, is the sole waste and recycling management service provider for certain materials generated within the City of Reno; three other companies are authorized to collect or process other specific categories of waste.

Due to the City's franchise agreements with Waste Management, the Airport must use this company for waste collection and is subject to the terms of the City's agreements, including fees and services. The Airport does not have a standalone contract with Waste Management.

Collection Service Agreements

The City's collection service agreements with Reno Disposal and Castaway Trash Hauling granted these companies exclusive right to provide waste and single stream recycling collection services to commercial and residential customers. The agreement stipulates that no other entity may collect, transport, or deliver waste materials for disposal or recycling. Under each agreement, the contractors are to provide waste and single stream collection services to residential and commercial customers. The agreements also state that the contractors may offer food waste collection services to residential and commercial customers. The collection service agreements obligate the collection contractors to deliver to the facility designated under the City's disposal agreement.

The collection agreements list approved recycled materials which include: newspaper (including inserts, coupons, and store advertisements), chipboard, corrugated cardboard, mixed waste paper (including office paper, computer paper, magazines, junk mail, catalogs, kraft bags and kraft paper, paperboard, egg cartons, phone books, brown paper, grocery bags, colored paper, construction paper, envelopes, legal pad backings, shoe boxes, cereal, and other similar food boxes), glass containers (including brown, clear, and green glass bottles and jars), aluminum (including beverage containers, food containers, small scrap metal), steel or tin cans, plastic containers classified under Resin Identification Code Nos. 1 through 7, inclusive, food waste (only if source separated and placed by the generator in a separate container designated for food waste), and any other materials mutually agreed to by Refuse, Inc. and the City.

The City's collection service agreements also include definitions and provisions for warranties; operations; compensation; billing, collection, and payment; record keeping, reporting, and inspection; insurance; and other topics.

Disposal Agreement

Under the City's disposal agreement, Refuse, Inc. accepts waste from the franchised haulers, transports the waste to the disposal site, accepts recyclable materials from the franchised haulers at the material recovery facility (MRF), and disposes of residues from the sorting process at the disposal site.

The disposal agreement includes the same list of approved recycled materials as the collection service agreements. Under the disposal agreement, Refuse, Inc. is entitled, but does not have exclusive right or obligation, to accept food waste or green waste. Refuse, Inc. has the right to inspect and reject materials, for example, recyclable materials with ten percent or more non-recyclable contents or other contamination by hazardous or other waste. Refuse, Inc. is responsible for the sale of recyclable materials and entitled to the proceeds from their sale. If the materials cannot be sold, the City and Refuse, Inc. are to work together to determine how to handle these items.

The disposal agreement also obligates Refuse, Inc. to construct a facility for the transfer, processing, and disposal of waste and recyclables (Eco-Center). The disposal agreement lists some of the desired features of the Eco-Center, including a MRF, waste transfer area, community drop-off areas, community education center, and a recycling coordinator. Refuse, Inc. is responsible for the cost of the Eco-Center. The disposal agreement also requires the construction of a compressed natural gas (CNG) fueling facility, use of CNG powered collection vehicles, purchase of 32-gallon solar powered waste compactors for installation throughout the City, and acceptance of materials generated at City properties at no charge. The disposal agreement also includes definitions as well as provisions for warranties; operations; compensation; billing, collection, and payment; record keeping, reporting, and inspection; insurance; and other topics.

Tenant Leases

Based on information from Airport staff, the lease agreements between RTAA and most of its tenants do not currently require recycling.

The consultant reviewed RTAA's standard T-hangar lease agreements for requirements pertaining to waste and recycling. Under Article 5 Maintenance and Repair, Section 5.04 Ground Maintenance, these agreements state "lessee…will remove all trash and debris for disposal away from the Leased Premises and the Airport. The accumulation of trash, dust, and debris, the piling of boxes and other unsightly or unsafe materials, on or about the Leased Premises or the Airport, is strictly prohibited." This language indicates that the T-hangar tenants are responsible for disposing of trash and recyclables generated by their activities. These agreements also details tenants' responsibilities to comply with laws governing hazardous materials, including hazardous wastes.

Custodial

Airport Facilities and Maintenance staff are responsible for custodial activities in the Airport Authority offices and Authority-controlled areas of the terminal. Therefore, there is not a contract that covers these services.

Terminal, hangar, and other tenants are responsible for these activities in their own areas. Contracts with any third-party housekeeping contractors retained by tenants were not reviewed under this project.

Recycling Feasibility

Many factors impact the feasibility of recycling and other waste management strategies at RNO. Some of these factors are universal to airports and similar facilities, and others are specific to the Airport itself. The following sections describe the more influential of these factors.

Commitment and Support

The willingness of RTAA, Airport staff, and tenants and contractors to commit to and support the Airport's recycling program is a major factor in the success of such a program. Without the commitment of resources such as funding, labor and time, space, and access to secure areas, a recycling program could struggle.

RTAA, RTAA Departments and Airport Staff

RTAA has committed to environmentally responsible operations; therefore, the Airport Authority supports sustainable waste management. This is evidenced by the allocation of resources to the Airport's recycling program. Departments within the RTAA, including Engineering and Planning and Facilities and Maintenance, work together to maintain the program. Airport staff actively recycle in their areas.

Airlines

The Airport's terminal tenants, including the airlines, participate in the recycling program by separating materials into the proper containers and dumpsters. The extent of their participation is not formally tracked at this time.

Of the eight airlines serving the Airport, at least five have established sustainability programs that include elements of waste management and recycling.

Alaska Airlines' environmental strategy includes working to reduce waste from flights and other facilities, including recycling and composting of coffee grounds. Alaska's 2015 goal was to increase recycling capture rate on flights from 79 percent to 85 percent. Alaska specifically mentions that their recycling goals are "limited by local infrastructure because many airports and municipalities have different protocols and capabilities for co-mingled recycling." Alaska has worked with a reuse company to salvage leather from old plane seats and reuse the material in consumer goods. The airline is also working with in-flight crews to keep unused disposable items like cups and napkins on aircraft instead of returning them to the catering carts where they are thrown away in the unstocking process. Alaska's goal is to ensure all in-flight service ware items are recyclable, reusable, or sustainably sourced. Alaska has also taken steps to reduce dependence on printed paper through the use of iPads, iPhones, and tailored applications ("apps").

Delta's environmental policy states that they "are committed to being a sustainable, transparent and responsible airline industry leader." In alignment with this policy, Delta is "committed to minimizing all waste

streams" through diversion, reuse, and recycling. Delta has a single stream in-flight recycling program operating in 33 locations for plastic, aluminum, and paper.

JetBlue Airline's sustainability website states that "by…recycling much of our waste, we cut costs." JetBlue launched an onboard recycling program in 2012 under which in-flight crewmembers separate bottles and cans and the ground crews process these materials for recycling at the landing destination. In the first year, this program recycled 28 million cans and bottles and donated the money earned to charity. JetBlue has also worked with a reuse company to transform waste crewmember uniforms into new items.

Southwest Airlines is "committed to conservation and mitigation of [the airline's] environmental impacts." Southwest also partnered with a reuse company to "upcycle" seat leather into new products. Southwest has diverted more than 4,100 tons of material from landfills through recycling.

United Airlines is "committed to operating sustainably and responsibly" and has recycled over 28 million pounds of aluminum cans, paper, and plastic from flights and facilities. In 2014, United worked to replace its hot beverage cups with fully recyclable alternatives made from recycled plastic water bottles.

Waste Management Contractor

As discussed above, the City of Reno has entered into disposal and collection service agreements that impact the Airport. These agreements went into effect November 7, 2012, and are all set to expire on November 7, 2029, 17-year terms for each agreement, with an option to extend for an additional five years. Therefore, Waste Management will serve as the Airport's collection service provider and its facilities will be used for disposal and recycling of Airport materials for the foreseeable future.

Waste Management has committed to developing a network of infrastructure to support waste management including recycling in the Reno area. The company is constructing the Eco-Center described in the disposal agreement and provides recycling services at a reduced fee compared to waste services, based on published rates for 2016. All of these seem to indicate Waste Management is a willing partner in the Airport's efforts to divert material from the landfill.

Technical and Economic Factors

Contractual Issues

The City's agreements with Waste Management are a significant influence on the Airport's recycling program. While these agreements prohibit the Airport from contracting with another hauler, transporting waste materials, or using another disposal or recycling facility, they do give the Airport the advantage of a consistent contractor and predictable services and fees for the foreseeable future.

Local Infrastructure and Markets

Local Landfill

Waste materials generated at the Airport are transported to the Lockwood Regional Landfill in Storey County, less than ten miles east of the Airport, shown in **Figure G-10**. This landfill is owned and operated by Refuse, Inc. a subsidiary of Waste Management. Based on information available from the State of Nevada Division of Environmental Protection Bureau of Waste Management, Lockwood Landfill has a capacity of 302.5 million cubic yards and receives approximately 5,000 tons of MSW and C&D debris each week day. Lockwood Landfill is permitted to accept MSW, waste tires, and specific C&D waste. The landfill is prohibited from landfilling liquid waste, hazardous waste, Polychlorinated Biphenyls (PCB) waste, asbestos, and other specific types of waste. Refuse, Inc. also owns and operates two solid waste transfer stations in Reno; one of these facilities is located two miles north of the Airport. Due to the City's disposal agreement, the City's haulers are required to use these facilities for disposal of waste.

Figure G-3: Lockwood Landfill

Source: State of Nevada Division of Environmental Protection

Local Recycling Facility

Waste Management/Refuse Inc. also owns and operates a MRF located two miles north of the Airport. Due to the City's disposal agreement, the City's haulers are required to use this facility for recycling. This facility has requirements for the materials it accepts, including limiting contamination by trash.

Waste Management Eco-Center

Waste Management is in the process of building an Eco-Center described in the City's disposal agreement. This campus will feature recycling processing and trash transfer facilities as well as other related infrastructure and services, such as drop off facilities for green waste, electronics, and household hazardous waste; community education; driver training; and CNG fueling.

Local Options for Food Donations

According to information from Ample Harvest, a non-profit organization that catalogs food pantries, there are over a dozen food pantries within 10 miles of the Airport. These organizations may be interested in receiving edible food from the Airport's restaurants.

Local Composting Facility and Programs

Full Circle Compost is a composting company in Minden, Nevada. In addition to processing compostable materials, Full Circle Compost offers green waste consulting to help businesses, such as casinos/resorts/hotels, restaurants, grocery stores, schools, office buildings, parks and municipal departments, and golf courses, determine what opportunities exist in their waste stream to divert green waste from the landfill.

In late 2011, Waste Management and the Atlantis Casino Resort Spa announced the launch of an organics recycling program for food waste and other organics generated at the casino. The kitchen staff at Atlantis separate food scraps from other waste. Waste Management collects the food scraps and transports them to a local composting facility, Full Circle Compost, where they are processed and turned into compost. The compost is used as a soil amendment. In 2012, this program diverted 1,500 yards of food waste from the landfill.

Due to the collection services and disposal agreements, Full Circle Compost cannot pick up compostables in the City of Reno. However, as with Atlantis Casino, Waste Management may be willing to transport compostables from the Airport to Full Circle Compost.

In some locations, wastewater treatment plants are a potential outlet for food related wastes including fats, oils, and grease. Based on information from the United States Environmental Protection Agency (EPA), the City of Reno wastewater treatment plants do not currently accept fats, oils, and grease or food waste for co-digestion.

Material Markets

Markets for recycled materials fluctuate widely based on a number of 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 as well as clean and easy to separate.

The materials listed in **Table G-8** are accepted per the City's collection service and disposal agreements. Inclusion likely indicates that the market and/or infrastructure for these materials is strong. The Airport currently recycles those materials underlined in green.

Table G-8: Locally Accepted Recyclables

Approved Recyclables Materials – City of Reno Collection Service and Disposal Agreements
aluminum (including beverage containers, food containers, small scrap metal)
chipboard
corrugated cardboard
food waste* (at contractors election, source separated and placed in a separate, designated container)
glass containers (including brown, clear, and green glass bottles and jars)
mixed waste paper (including office paper, computer paper, magazines, junk mail, catalogs, kraft bags and kraft paper, paperboard, egg cartons, phone books, brown paper, grocery bags, colored paper, construction paper, envelopes, legal pad backings, shoe boxes, cereal and other similar food boxes)
newspaper (including inserts, coupons, and store advertisements)
plastic containers classified under Resin Identification Code Nos. 1 through 7 (including plastic bottles)
steel or tin cans

Waste Management responded to questions about the Eco-Center in March 2017 and stated "virtually all recycling from Nevada goes to California. There are no markets or manufacturers in Nevada that use recycled materials." In addition, Waste Management indicated that "cardboard, paper, and some metals will be sorted out at the Eco-Center…the remaining material will be compacted…for sorting…in California." This information may aid the Airport in prioritizing on-site separation of cardboard, paper, and metals and support continued co-mingling of the other materials (plastic, glass, etc.).

Logistical Considerations and Constraints

To maintain a recycling program at RNO, certain elements must be in place. This includes proactive and engaged staff, cooperative haulers, space for bins and dumpsters, and access to secure areas of the Airport, including airside ramps and sterile terminal areas.

The Airport's current recycling program makes efficient use of limited space and addresses access restrictions effectively. Dumpsters provided by RTAA appear to be conveniently located for employee and terminal tenant use. Providing the opportunity to comingle recyclables including cardboard has increased the number of options for proper disposal of these items, meaning cardboard can be transported to the designated single stream balers and compactor, or it can be added to the comingled dumpsters.

Guidelines and Policies

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

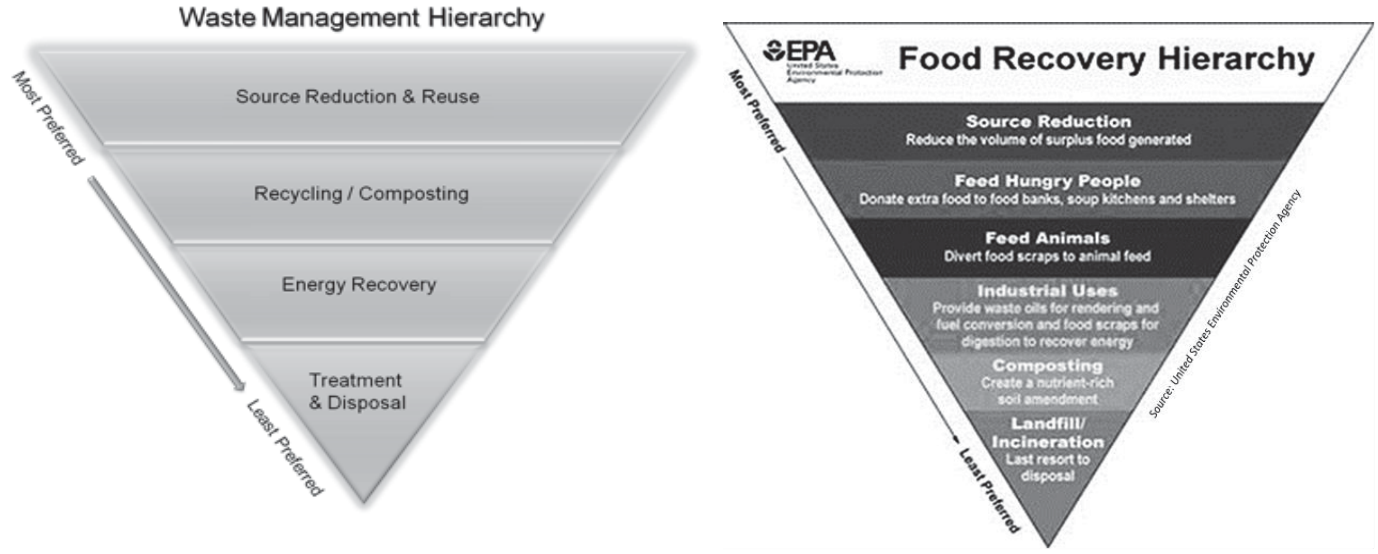
Federal

At the federal level, the EPA is responsible for developing a solid waste management program under the 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.

As described in **Regulatory Background and Project Purpose**, the FAA's definition of airport planning was updated in 2012 through FMRA to include planning for recycling and waste minimization. The Airport Authority is required to address solid waste as part of conducting an airport master planning project. 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 Administration's website).

The EPA has developed a hierarchy of waste management strategies. This hierarchy (**Figure G-11, left**) ranks these strategies from most- to least-environmentally preferred and places emphasis on reducing, reusing, and recycling. In addition to the general waste management hierarchy, the EPA has also developed a preference ranking of management strategies for food waste (**Figure G-11, right**).

Figure G-11: Waste Management Hierarchy and Food Recovery Hierarchy



Source: United States Environmental Protection Agency

State

Nevada Recycles is a program provided by the State of Nevada Department of Conservation and Natural Resources. The program promotes "recycling, waste reduction, resource conservation, preservation and sustainability through education, public and private collaboration, and facilitation of partnerships with the public, educational institutions, private companies, non-profits, and other governmental organizations and agencies." Nevada Recycles was established in 1992 and has adopted a 25-percent recycling rate goal for the state. This objective was achieved in 2011, 2012, and 2013; however, recycling performance has decreased since that time (estimated to be 23.4 percent in 2014 and 20.8 percent in 2015.)

The State of Nevada requires that counties with more than 100,000 residents provide residential curbside service. Reno is located in Washoe County, which has a population greater than 433,000. Each county must also have a solid waste management plan approved by the State. The State has developed its own plan based on information from the counties.

Local

In compliance with State requirements, Washoe County provides residential curbside waste services through the local municipalities and has developed a solid waste management plan.

At the City level, residents and commercial businesses, including the Airport, must use Waste Management for waste and recycling services and are subject to the terms of the City's agreements with this company.

Burning Man

The Burning Man festival has a principle of "leaving no trace" on Black Rock City, which is the area that hosts the event. Attendees have access to aluminum can recycling at the festival and must "pack out" (carry out) all other waste and recyclables. The Burning Man website instructs attendees not to take trash to the Airport and provides a link to "Exodus Trash and Recycling Network," which includes: local supermarkets; the Waste Management transfer stations, recycling center, and landfill; and RV travel centers and parks in the Reno area. The website also describes items that are restricted in carry-on and checked luggage. Providing this information may help reduce waste generated from the security checkpoints and baggage screening areas.

Alignment with EONS

The Airport's current recycling program generally aligns with the elements of EONS: economic viability, operational efficiency, natural resource conservation, and social responsibility.

The Airport Environmental Program Manager tracks the financial resources associated with waste and recycling, including the monthly costs to landfill trash and to recycle specific materials as well as the rebates received for recycling and the costs avoided from recycling versus landfilling. This information is especially

useful for the Airport Facilities and Maintenance Department. That department funds waste management services in an operating environment where airports are striving to be as economically self-sustaining as possible.

The current recycling program has been designed to conserve operational resources such as labor and time. The comingled system allows for more convenient collection of recyclable materials, and the conjoined recycling stations centralize collection in the passenger terminal, which reduces the custodial efforts required to service individual bins located some distance apart.

The Airport's recycling program conserves natural resources such as fuel by implementing on-call collection and transport of waste and recyclables rather than a scheduled program where collection vehicles service the facility whether the dumpsters are full or not. In addition, by recycling an average of 80 tons each year, the Airport is conserving natural resources including those needed to manufacture virgin aluminum, paper, cardboard, glass, plastic, metals, and pallets.

Responsible waste management benefits a facility's surrounding community in a variety of ways, with a sample of them included here. It contributes material to the recycling market and diverts material from local landfills. This reduces costs to operate the facility, some of which are passed on to facility users, and maintains a pleasant facility and grounds. Food and other items are donated to those in need.

Other Incentives

As noted above, several of the airlines serving RNO have recycling programs and goals. Continuing to align the RNO recycling program with the airlines' practices and enhancing the recycling program with their support represents a win-win scenario. In such a scenario, the Authority can reduce the facility's environmental impact and, by helping the airlines reduce their impacts, generate goodwill with the carriers.

Employee, tenant, or passenger interest in recycling at RNO can be an incentive to expand and improve the program. Employees and tenants that recycle at home or at other businesses in the area may wish to reduce their environmental footprint by recycling at the Airport. Passengers that travel through other facilities around the country are exposed to various levels of recycling and sustainability programs. They may be interested in RNO's efforts in this area and expect the facility to show signs of environmental stewardship.

Cost Savings and Revenue Generation

Based on published rates for Waste Management's services within the City of Reno effective April 1, 2016, commercial customers are charged monthly based on container size and type (carts between 35 and 96 gallons, bins between two and six cubic yards, dumpsters between 14 and 30 cubic yards, and compactors between one and 40 cubic yards), collection frequency (times per week, between one and seven), and type of material (waste or recycling.)

According to Waste Management's published rates for the City of Reno, rates for recycling are 30 percent lower than rates for landfilled waste based on containers of the same size and same collection frequency. Based on data from fiscal year 2015/2016 alone, each ton of waste landfilled cost the Airport $52.79 while each ton of recycling made the Airport $11.46 in rebates after charges/fees. This ratio represents a financial incentive for the Airport to increase diversion of recyclables from the landfill-bound stream. Lower rates for smaller waste containers and for containers serviced less frequently also encourage waste reduction through cost savings.

Recommendations

During review of the waste management practices at the Airport, the consultant developed several recommendations. Coordination with the Environmental Program Manager helped identify the Airport's priorities relative to these recommendations, yielding a list of potential actions relative to waste management. The following are potential areas of focus for future efforts: increase diversion, provide additional recycling stations, complete employee education and outreach, improve program signage, and address C&D waste.

This section expands on these priorities and documents additional recommendations, including waste reduction, reuse, and recycling strategies, based on the information presented in the previous sections of this document.

Objectives and Targets

It is recommended that the RTAA 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.

The following are potential objectives and targets based on available data the RTAA may adopt or use as inspiration for other goals:

- Achieve 25 percent recycling rate, in support of State of Nevada's objective; and
- Have 100 percent of RTAA employees complete recycling awareness training.

Tracking and Reporting

It is recommended that the Airport continue to track waste and recycling quantities and look for opportunities to collect or estimate this information about additional streams.

At the onset of this task, the recycling rate for RNO was being calculated in a different manner than is used by the State of Nevada and the US EPA. For the purposes of this report, RNO's data was used to calculate a recycling rate in alignment with the method used by those organizations. It is recommended that RTAA adopt the more standard calculation going forward in tracking recycling data.

The performance of RNO's recycling program is already reported to RTAA and included in the CEO's monthly report. It is recommended that RTAA evaluate additional stakeholders who should receive updates about improvements to the program and its performance.

Reduce and Reuse

To reduce the facility's environmental impacts, the Airport 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.

It is recommended that the Airport evaluate the following reduction and reuse strategies to determine which, if any, are feasible and prudent for implementation at RNO:

- Collaborate with restaurants and donate edible food items to local charitable organization instead of landfilling;
- Collaborate with local charitable organization to evaluate opportunity to donate unopened toiletries generated at security checkpoints (more details below);
- Adjust practices and procedures related to servicing garbage cans and recycling stations to reduce the number of bin liners (garbage bags) needed; and
- Use of durable (ceramic) coffee mugs and other dishes instead of disposable items.

Donation of Food, Beverages, and Toiletries

It is recommended that the Airport investigate the feasibility of collecting unopened bottles of water, other beverages, food, and toiletries 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 the queuing area or TSA operation screening. Belfast International Airport has a similar program. Collection bins are placed at the checkpoints and unopened toiletries are then donated to a local non-profit.

In compliance with TSA requirements, these items may need to be collected prior to the security checkpoint queuing area. Collection of these items would require containers at the security checkpoints and management by Facilities staff to store the items until the receiving organization could collect them. To implement this recommendation, coordination between the RTAA and the designated receiving organization would be needed. Additionally, coordination with local TSA representatives may be required.

Recycling and Compost

Recycling is the second preferred waste management strategy, according to the EPA, after waste reduction.

It is recommended that the Airport continue to recycle cardboard, paper, plastic bottles and aluminum cans, glass, pallets, metal, and batteries; look for opportunities to maximize these programs with the airlines, including deplaned waste, and other terminal tenants; and expand to other buildings at the Airport.

It is recommended that the Airport consider working with Waste Management and Full Circle Composting to evaluate the possibility of composting paper towel waste from the terminal restrooms, as this stream is already separated at the source and contributes approximately 17,500 pounds to the waste stream annually. Paper towel represents an easily identifiable material by which to introduce composting at the Airport.

Long term, it is recommended that the Airport expand the facility's waste management program to include composting of food waste. Such an initiative will require collaboration with the terminal restaurants, Waste Management, and Full Circle Compost.

One approach to gradually introducing food waste composting is to start with collection and composting of coffee grounds as this material is easily identifiable, contains valuable nutrients, and has a pleasant odor. Based on the success of a coffee grounds composting program, additional materials could be added based on what the restaurants generate and what Full Circle accepts.

Education and Outreach

Education of and outreach to program users are key factors in maintaining and improving an effective recycling program. Providing recycling bins and dumpsters is important, but recycling and other sustainable waste management practices are based on user behaviors and habits. For this reason, the Airport's Environmental Program Manager has expressed an interest in increasing recycling education and outreach at RNO.

Under the existing recycling program, education and outreach for RTAA employees, airlines, tenants, contractors and passengers is primarily accomplished through container signage/labels in the terminal and on the dumpsters.

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

Training on the recycling program at RNO does not need to be complicated. The format of training could take any number of forms, including emails, meetings, posters, etc. The content of such training should include reminders and information about:

- The materials accepted for recycling at the Airport and the location of the containers to be used,
- Purchasing requirements, and
- The positive effect the program is having in reducing RNO's environmental impact.

Information from the EPA, the State of Nevada, the County's solid waste management plan, and Waste Management 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 be asked to provide content, send email reminders, or to present during meetings.

RTAA should consider providing introductory level information to new tenants and contractors and provide materials such as postings, postcards, etc., to existing tenants and contractors for use with their employees.

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

Containers and Bins

The existing recycling bins in the passenger terminal are described under **Infrastructure/Operation and Maintenance Requirements**. No changes to the design of these containers are recommended at this time. The specially shaped lids provide an additional clue as to the contents of that container and the proper materials to dispose of within. It is recommended that the Authority standardize the placement of the recycling stations in the terminal and minimize the number of standalone garbage cans (eliminating them altogether in the long term).

As resources allow, it is recommended that the Airport evaluate installing additional recycling stations to make recycling even more convenient for passengers. One additional area of potential improvement is to provide additional recycling containers near the McDonalds restaurant. As noted previously, this may be a significant source of waste and recyclables including brown paper bags and plastic.

Information about the containers and bins in the offices and tenant spaces was not provided for this task. These containers may represent additional opportunities for co-location, right-sizing, color-coding, or other strategies.

Signs and Labeling

It is recommended that the Authority improve the in-terminal messaging for passengers and provide brief, clear instructions for recycling at RNO. Providing clear instructional signs at the recycling stations/recycling bins can improve passenger participation and reduce contamination. New signs could use color, images, and short, clear text to help improve understanding of which items are recyclable and which should be thrown away.

The TSA liquid 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 further security screening, increasing congestion and wait times in the security line.

Due to the TSA restrictions, one key location where additional signs are recommended is in the pre-security areas (ticketing, concessions, security checkpoint queuing). These areas represent opportunities to remind passengers about the types of items that cannot be carried on flight and gives them the opportunity to place these items in their checked luggage instead. These signs could also notify passengers of the availability of a water bottle filling station post-screening.

Another key location for additional signs is the security checkpoint queuing areas in each terminal. Clear signs in these areas would help educate passengers on the TSA restrictions as well as their options to comply with the restrictions to reduce wait times and without throwing these items away.

Other Recommendations

Equipment

It is recommended that the Airport evaluate procurement of one additional vehicle to haul waste and recyclables. A flatbed truck with the capability to haul the dumpsters without transferring their contents is recommended.

Leases and Contracts

Because the Authority's current leases do not reference the Airport's recycling program, it is recommended that the Authority evaluate opportunities to include recycling and other waste management preferences and requirements in airline, tenant, and other organizations that lease space at the Airport. This could be as simple as a clause describing the Airport's recycling program and requesting participation where possible, or as complex as specifying required actions for specific materials. Expiring leases represent an opportunity to negotiate such inclusions with existing tenants. Waste minimization, reuse, and recycling should also be incorporated where possible in contracts for construction projects at RNO.

Purchasing Policies/Requirements

It is recommended that RTAA evaluate its procurement and purchasing policy and look for opportunities to require the use of sustainable materials and supplies. This could include durable items versus single-use, disposable items, supplies containing recycled or post-consumer content, such as printer paper, paper towel, paper napkins, etc., and supplies that offer manufacturer take-back or recycling programs at end of life, such as printer cartridges, batteries, etc.

Continuous Improvement

It is recommended that the maintenance and improvement of the recycling program at RNO follow the PDCA cycle methodology.

Plan

The recommended strategies make up the "plan" portion of the process. Defining objectives, collecting baseline information (waste trends), and identifying strategies are all portions of the planning aspect.

Do

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

Check

After implementing strategies, the "check" portion of the process involves the reporting aspect of implementation. As strategies are implemented, this step involves regularly tracking and checking the progress toward meeting the goals.

Because the Airport has finite resources (financial, staffing, capital, etc.), 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 include the development and use of tools for measuring progress, including a simple mechanism for reviewing suggestions.

In addition to regular review of the program's progress, the following scenarios may also trigger re-evaluation of the program and/or the constraints described in this report:

- New state recycling laws, requirements, or goals;
- New City programs for example, expanded accepted materials, or goals;
- New local infrastructure;
- New Authority programs or goals; and
- New or changes in tenant programs or goals, for example, airline sustainability initiatives.

Act

The "act" portion of the process encompasses taking lessons learned in the previous stages and acting in response. It can be helpful to ask "what did we learn" and "how can we do better next time?" By re-evaluating the strategies, adjustments can be identified and put into action.

It is recommended that a meeting with representatives from Waste Management, Airport Facilities and Maintenance staff, and tenants participating in the program be held on a regular basis, for example, annually, to drive the continuous improvement cycle, which entails reviewing the recycling program and planning improvements/adjustments. It is recommended that tenant participation in these meetings be on a voluntary basis initially.

Recommendations Summary

Table G-9 summarizes the recommendations to increase recycling and landfill diversion and improve waste management at RNO as described in the preceding sections.

Table G-9: Recommendations Summary

Waste and Recycling Program Recommendations
❖ Objectives and Targets: Set specific, measurable, achievable, realistic, and time-bound (SMART) goals for its waste and recycling program. The following are potential objectives and targets based on available data the Authority may adopt or use as inspiration for other goals: ▪ Achieve 25% recycling rate (in support of State of Nevada's objective) ▪ 100% of RTAA employees complete recycling awareness training
❖ Tracking and Reporting: It is recommended that the Airport continue to track waste and recycling quantities and look for opportunities to collect or estimate this information about additional streams. It is recommended that RTAA adopt the more standard calculation going forward in tracking recycling data.
❖ 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 implementation at RNO: ▪ Collaborate with restaurants and donate edible food items to local charitable organization (instead of landfilling) ▪ Collaborate with local charitable organization to evaluate opportunity to donate unopened toiletries generated at security checkpoints (more details below) ▪ Adjust practices and procedures related to servicing garbage cans and recycling stations to reduce the number of bin liners (garbage bags) needed ▪ Use of durable (ceramic) coffee mugs and other dishes (instead of disposable items)
❖ Donation of Food, Beverages, and Toiletries: It is recommended that the Airport 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.
❖ Recycling: It is recommended that the Airport continue to recycle cardboard, paper, plastic bottles and aluminum cans, glass, pallets, metal, and batteries; look for opportunities to maximize these programs with the airlines (including deplaned waste) and other terminal tenants; and expand to other buildings at the Airport.
❖ Composting: It is recommended that the Airport consider working with Waste Management and Full Circle Compost to evaluate the possibility of composting paper towel waste from the terminal restrooms. Long term, it is recommended that the Airport expand the facility's waste management program to include composting of food waste. Such an initiative will require collaboration with the terminal restaurants, Waste Management, and Full Circle Compost.
❖ Education and Outreach: It is recommended that RTAA provide simple on-going training for employees, airlines, tenants, and contractors that explains the recycling program, including its purpose and requirements.

Waste and Recycling Program Recommendations (Continued)

- Containers and Bins: No changes to the design of these containers are recommended at this time. But it is recommended that the Authority standardize the placement of the recycling stations in the terminal and minimize the number of standalone garbage cans (eliminating them altogether in the long term). As resources allow, evaluate installing additional recycling stations to make recycling even more convenient for passengers. One additional area of potential improvement is to provide additional recycling containers near the McDonalds restaurant. As noted previously, this may be a significant source of waste and recyclables including brown paper bags and plastic.
- Signage and Labeling: It is recommended that the RTAA improve the in-terminal messaging for passengers and provide brief, clear instructions for recycling at RNO. New signage could make use of color, images, and short, clear text to help improve understanding of which items are recyclable and which should be thrown away. Areas of focus should be pre-security and at the security checkpoints.
- Equipment: It is recommended that the Airport evaluate procurement of one additional vehicle to haul waste and recyclables. A flatbed truck with the capability to haul the dumpsters without transferring their contents is recommended.
- Leases and Contracts: Evaluate opportunities to include recycling and other waste management preferences and requirements in airline, tenant, and other organizations that lease space at the Airport. Include a clause describing the Airport's recycling program and requesting participation where possible and one as complex as specifying required actions for specific materials.
- Purchasing Policy: Evaluate procurement and purchasing policy and look for opportunities to require the use of sustainable materials and supplies. This could include durable items (versus single use disposable items), supplies containing recycled or post-consumer content (printer paper, paper towel, paper napkins, etc.), and supplies that offer manufacturer take-back or recycling programs at end of life (printer cartridges, batteries, etc.).
- Continuous Improvement: It is recommended that the maintenance and improvement of the recycling program at RNO follow the PDCA cycle methodology. This could include holding an annual meeting with representation from RTAA and tenants participating in recycling to drive the continuous improvement of the program as well as plan for and implement improvements and adjustments as needed. Participation in these meeting is recommended to be voluntary.

Conclusion

At RNO, RTAA has an established recycling program primarily based in the administration offices and the passenger terminal. This report described the existing program and outlined recommended improvements that will enable RNO to increase landfill diversion and recycling volumes. In addition, this plan documents and supports the Airport's compliance with the FAA Modernization and Reform Act of 2012 and FAA guidance on the topic of recycling, reuse, and waste reduction.