

APPENDIX G

*AIRPORT RECYCLING, REUSE,
AND WASTE REDUCTION PLAN*

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1.1 INTRODUCTION

In September 2014, the Federal Aviation Administration (FAA) provided guidance for preparing airport recycling, reuse, and waste reduction plans as an element of a master plan or master plan update.¹ This guidance was in response to the *FAA Modernization and Reform Act* (FMRA) of 2012² that added a requirement for all master plans and master plan updates to include a plan for “recycling and minimizing the generation of airport solid waste” to be consistent with the local recycling laws.

This chapter reviews the Range Regional Airport (HIB or Airport) existing solid waste generation and recycling activity and identifies opportunities to increase recycling efforts. In reviewing the Airport’s existing solid waste and recycling activity, an effort was made to:

- » Review the current waste management sources
- » Review local recycling programs and practices
- » Review the feasibility of recycling efforts at the Airport
- » Provide a summary of operations and maintenance requirements
- » Review waste hauler management contracts
- » Identify potential recycling opportunities for cost savings or revenue generation
- » Identify a plan to minimize solid waste generation at the Airport

1.2 CURRENT AIRPORT WASTE MANAGEMENT SOURCES

All waste generated at the Airport is collected by the City of Hibbing and disposed of at the Hibbing Transfer Station and/or the Hibbing Demolition Landfill, both of which are approximately six miles northwest of the Airport.³ The Airport currently has an informal recycling plan, as the City of Hibbing does not provide a formal recycling service. Currently, the Airport recycles fluorescent lightbulbs, metal, and provides cardboard recycling dumpsters for its tenants.

Waste management at an airport includes multiple components. For instance, an airport has various tenants, agreements, differing operational requirements, and disposal processes that all contribute to the waste stream. According to the FAA’s September 2014 guidance, an airport’s waste management is divided into three main areas:

- » Areas where an airport has direct control over the waste stream (e.g., public spaces, office space, main terminal, and airfield)
- » Areas where an airport does not have direct control over the waste stream, but can influence waste management (e.g., tenants and aircraft deplaned waste)
- » Areas where an airport has no control over the waste stream (i.e., areas where the airport does not own or lease)

¹ FAA Memorandum, Guidance on Airport Recycling, Reuse, and Waste Reductions Plans, <https://www.faa.gov/airports/environmental/media/airport-recycling-reuse-waste-reduction-plans-guidance.pdf>, accessed April 2021.

² 49 United States Code (U.S.C.), §§ 132 and 133.

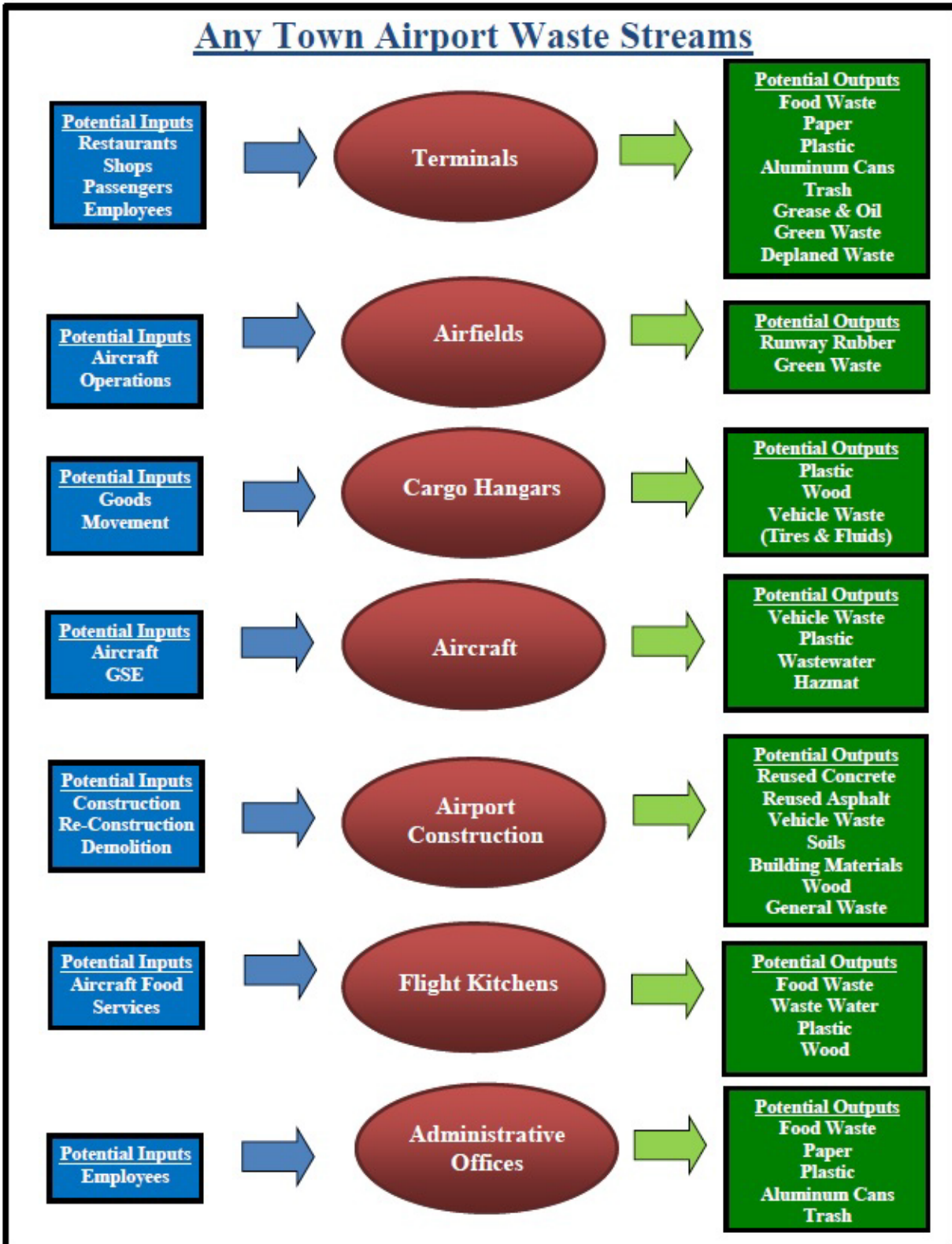
³ St. Louis County MN, Solid Waste, <https://www.stlouiscountymn.gov/departments-a-z/environmental-services/solid-waste-garbage>, accessed April 2021.

In addition, the FAA's 2013 Recycling Synthesis report⁴ identified seven main airport waste streams: terminals, airfields, cargo hangars, aircraft, airport construction, flight kitchens, and administrative offices (see **Figure G-1**).

The main generators of waste at the Airport are its tenants, fixed based operator, passengers, and the airfield. The airfield generates waste typically during construction projects and waste materials can range from concrete or asphalt to old lighting and signage.

⁴ Federal Aviation Administration, *Recycling, Reuse, and Waste Reduction at Airports – A Synthesis Document*. FAA Office of Airports. April 24, 2013.

FIGURE G-1
TYPICAL AIRPORT WASTE STREAMS



Source: FAA, 2013 *Recycling Synthesis Document*

1.3 LOCAL AND AIRPORT RECYCLING PROGRAMS

1.3.1 City of Hibbing Recycling

The City of Hibbing does not provide recycling services. However, there is a recycling center, The Hibbing Green Center, where residents and business can take their recyclable materials, such as cardboard, glass, plastic, cartons, and metal.⁵ The Hibbing Green Center is located about four miles northwest of the Airport.

1.3.2 St. Louis County Recycling

St. Louis County (County) has 46 recycling drop off locations. Here, residents within the County can drop off materials such as plastic, tin, aluminum, cardboard, paper, and glass. Additionally, the County has enacted special waste recycling programs wherein residents can recycle more complex materials and items such as appliances, tires, fluorescent and compact fluorescent (CFL) light bulbs, oil and oil filters, batteries, scrap metal, yard waste, and household hazardous materials.⁶ All cities in the County are welcome to use the services at the various recycling sites.

1.3.3 Airport Recycling Practices

All waste generated at the Airport is collected by the City of Hibbing and disposed of at the Hibbing Transfer Station and/or the Hibbing Demolition Landfill. The Airport currently has an informal recycling plan which includes recycling fluorescent lightbulbs, metal, and providing cardboard recycling dumpsters for its tenants.

1.4 RECYCLING FEASIBILITY AT THE AIRPORT

There are currently no mandated requirements for solid waste reduction in either the City of Hibbing or St. Louis County. Therefore, all existing recycling practices at the Airport are done on a voluntary nature. If the Airport were to implement one of the three waste assessment approaches shown in **Table G-1**, it would help provide a better understanding of the types and quantities of waste being generated at their facilities. This would ultimately give the Airport the ability to identify opportunities to increase recycling efforts.

⁵ City of Hibbing, Recycling, <https://www.ci.hibbing.mn.us/services/garbage-and-recycling/recycling#:~:text=The%20Hibbing%20Green%20Center%20for,brought%20to%20the%20recycling%20center>, accessed April 2021.

⁶ Saint Louis County Environmental Services, Recycling Information, <https://www.stlouiscountymn.gov/Portals/0/Library/Dept/Environmental%20Services/Solid-Waste/Recycling/Recycling%20locations.pdf?ver=2019-12-27-083219-693>, accessed April 2021.

TABLE G-1
WASTE ASSESSMENT APPROACHES⁷

Method	Advantages	Disadvantages
Hauler Records Examination	Provides for accurate data on the weight/volume of waste generated at the facility. Usually requires less time and staff than does a facility walk-through or waste sort.	Might not provide accurate data if waste hauling records do not exist. Does not provide data regarding specific waste materials. Difficult to quantify if dumpster is shared.
Facility Walk-Through	Requires less time than a full waste sort. Provides for qualitative data for waste generated. Allows for interviews with facility staff.	Might not provide data regarding specific waste materials. Requires multiple walk-throughs to obtain representative sample. Might not provide for accurate quantities.
Waste Sort	Provides for quantitative data for specific types of waste generated. Provides for estimates of waste generated for the whole facility.	Requires significant amount of time to conduct. Requires a significant number of staff to conduct. Requires multiple waste sorts to obtain representative sample.

Source: EPA, 2013

1.5 SUMMARY OF OPERATION AND MAINTENANCE REQUIREMENTS

Neither the City of Hibbing or St. Louis County has recycling or solid waste reduction requirements in place; however, the Airport has an informal recycling program and is interested in increasing its efforts to recycle.

1.6 POTENTIAL FOR COST SAVINGS OR REVENUE GENERATION

There are several recycling practices that other airports have successfully implemented, that Range Regional Airport could adopt to improve their existing waste management and reduce costs include, but are not limited to, the following:

- » Placement of recycling receptacles beside trashcans to collect plastics and paper
- » Educate employees about sustainability efforts and initiatives
- » Include language in construction contract documents encouraging material reuse and recycling
- » Implement a Recycling Advertising Program for recycling bins located throughout the terminal that would educate and alert passengers on the proposed disposal of waste materials
- » Educate employees about sustainability efforts and initiatives

⁷ U.S. Environmental Protection Agency, *Business Guide for Reducing Solid Waste*. EPA/530-K-92-004. November 1993.

- » Strive to reduce waste, energy use, and water consumption

1.7 PLAN TO MINIMIZE SOLID WASTE GENERATION

Range Regional Airport has expressed an interest in establishing a comprehensive recycling program to reduce the Airport waste stream and increase its output of recycled materials. The Airport could implement the ten steps established by the FAA (see **Table G-2**) to create and implement a formal recycling program.

TABLE G-2
STEPS FOR CREATING AND IMPLEMENTING A RECYCLING PROGRAM

Ten Steps for Creating and Implementing an Effective Airport Recycling / Waste Reduction Program	
1.	Management Commitment
2.	Program Leadership
3.	Waste Identification
4.	Waste Collection and Hauler
5.	Waste Management Plan Development
6.	Education and Outreach
7.	Monitor and Refine Program
8.	Performance Monitoring
9.	Promote Success
10.	Continuous Improvements

Source: FAA, 2013

By implementing the ten steps in Table G-2, the Airport would be able to outline waste reduction and recycling policies, set goals, track and monitor progress, and improve upon the program. Outlining policies for a recycling program can be challenging because this often requires coordination and buy-in from all Airport stakeholders, which includes the public. Establishing a recycling coordinator who would oversee the stakeholder engagement can help encourage participation to ensure policies established for the recycling program are inclusive.

Setting goals for a formal recycling program would require the Airport to conduct a waste assessment. This step is imperative to understand the types and quantities of waste being generated at the Airport. Once those types and quantities of waste are calculated, goals can be set to reduce those quantities. Goals should be realistic and achievable. However, as shown in **Table G-1**, conducting a waste assessment can be labor and time intensive. Partnering with the City of Hibbing or St. Louis County to help conduct the waste assessment could alleviate some of the staffing pressures from the Airport.

There are a variety of tools that help track and monitor the progress or success of the program. For example, the U.S. Environmental Protection Agency (USEPA) has an online tool, the Waste Reduction Model (WARM) that allows businesses to quantify their greenhouse emissions and energy savings that are a direct result of implementing recycling practices. This allows the Airport to monitor goals that have been

established and report back to stakeholders that are supporting the program. As the recycling programs progress is tracked, refinements should be made to the program to allow for the Airport to have flexibility in defining reasonable goals for its recycling/waste reduction program. An Airport recycling coordinator can review the data and consider new waste management practices that can be adopted into the program for further waste reduction at the Airport.

To further facilitate recycling on Airport construction projects, language can be included in contract documents encouraging material reuse and recycling. The Airport can discuss possibilities of changing specifications to include a recycling component to encourage expanded contractor participation on a project-by-project basis.

1.8 CONCLUSION

The Airport currently has an informal and voluntary recycling program. By conducting a waste assessment and addressing the FAA's 10 steps listed in **Table G-2**, the Airport would be able to set goals, implement policies, and identify areas for increased recycling efforts that would allow the Airport to quantify cost savings and reduce its contribution to the local landfills.

Planning studies that the Airport could help with the expansion of recycling efforts at the Airport are listed below.

- » **Waste Audit Plan.** A waste audit plan can identify the types and amounts of waste being generated at the Airport and determine the effectiveness of the current recycling efforts. The plan could include a walk-through of the Airport and other facilities, which allows for a qualitative assessment of the types of waste being generated. A waste sort would allow for a quantitative assessment of waste being generated at the Airport. Both the walk-through and the waste sort would result in a focused effort for the recycling of specific materials that would yield a cost savings to the Airport.
- » **Waste Reduction Strategy Plan.** A waste reduction strategy plan can propose the framework for reaching established goals. This plan could establish strategic initiatives, implement policies, and identify areas for increased recycling and reuse efforts. The plan could also establish an education plan for Airport staff, tenants, and contractors.