RECYCLING AND SUSTAINABILITY

12

TABLES

FIGURES

SUSTAINABILITY

The purpose of this section is to provide a general overview of sustainability and define the Airport Recycling, Reuse, and Waste Reduction Plan for Cedar City Regional Airport (**CDC**). This plan is intended to enhance airport recycling and waste reduction efforts in order to comply with Federal Aviation Administration (**FAA**) requirements.

12.1. Sustainability

12.1.1. Defining Sustainability

The United Nations established the Brundtland Commission to address growing concerns about the deterioration of natural resources. In its 1987 report, the commission defined sustainable development as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

The Airports Council International-North America (**ACI-NA**) took this approach a step further by stating that sustainability means taking *"a holistic approach to managing an airport so as to ensure the integrity of the economic viability, operational efficiency, natural resource conservation, and social responsibility (**EONS**) of the airport."*[1]

Economic Vitality

Operational Efficiency

Natural Resources

Social Responsibility

12.1.2. The EONS Approach to Airport Sustainability

The airport industry, in particular, has adopted the EONS approach to measuring sustainability (economic vitality, operational efficiency, natural resources, and social responsibility). This approach builds on the concept of emphasizing operational efficiency to include the efficient use of environmental and natural resources without creating a financial burden, compromising the needs of future generations, or disrupting operations. In many cases, this approach benefits the local community and the environment while also saving money and stimulating economic growth.

12.1.3. Reasons for Sustainability

Based on these definitions, airports should evaluate how programs and initiatives impact airport users, the surrounding community, and the natural environment and then identify how best to integrate sustainable practices as part of the airport master planning process.

This process will require each airport to consider its particular circumstances and its role in the community, as it relates to sustainability, to set the groundwork for future planning and implementation. Along with improving the community and the natural environment, sustainability makes good business sense. Airports that have adopted sustainable practices have reported the following tangible benefits:

- Greater use of assets.

- Reduced operating and maintenance costs.

- Improved work environment for employees.

- Reduced energy consumption, waste, and emissions.

- Enhanced community relationships.[2]

12.1.4. How Sustainability Relates to Cedar City Regional Airport

In the *Cedar City 2022 General Plan*, Cedar City recognized that the current landfill, which is managed by Iron County Solid Waste and Landfill, has a limited lifespan and is supportive of the community's interest in putting a stronger emphasis on sustainability as it plans for the future. This includes improved recycling services to reduce demand on the landfill.[3] In an effort to support this commitment to environmental sustainability and resource preservation, the Cedar City Regional Airport has adopted the EONS approach to sustainability.

12.1.5. Legislative Background

The FAA Modernization and Reform Act of 2012 (**FMRA**) amended Title 49 of United States Code (**USC**) to include several changes to the Airport Improvement Program (**AIP**). The two main changes related to recycling, reuse, and waste reduction at airports are as follows:

- FMRA Section 132(b) expanded the definition of airport planning to include *"developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit."*

- FRMA Section 133 added a provision requiring airports that have a master plan, and receive Airport Improvement Program funding, to ensure that the master plan addresses solid waste recycling at the airport. This includes addressing the following issues:

  - The feasibility of solid waste recycling at the airport.

  - Minimizing the generation of solid waste at the airport.

  - Operation and maintenance requirements.

  - Review of waste management contracts.

  - The potential for cost savings or the generation of revenue.

12.1.6. Types of Waste and Landfill Regulations

Landfills and waste are regulated under the Resource Conservation and Recovery Act (**RCRA**). This defines two main types of waste: solid waste (Subtitle D) and hazardous waste (Subtitle C).[4]

Subtitle D landfills are typically permitted by state and local governments to allow for the management of nonhazardous solid waste such as garbage, refuse, and discarded materials resulting from household and community activities or industrial and commercial operations while Subtitle C landfills are specifically designed to handle hazardous waste.

12.2. Types of Airport Waste

In general, solid waste from airports can be divided into the following categories:

• **Municipal Solid Waste:** This consists of everyday items that are used and then discarded. It includes items such as product packaging, furniture, clothing, bottles, and newspapers.

• **Construction and Demolition Waste:** This is any non-hazardous materials generated by excavation, construction, demolition, renovation, or repair of structures, roads, and utilities. Construction and demolition (**C & D**) waste commonly includes concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components. In some instances, construction and demolition waste may be subject to special requirements (e.g., materials containing asbestos).

• **Compostable Waste:** This includes both green waste and food waste. Green waste is also referred to as yard waste and generally consists of trees, shrubs, grass clippings, leaves, weeds, seeds, and similar debris generated by landscaping activities. Food waste is any food that is not consumed and includes food scraps discarded during meal preparation.

• **Deplaned Waste:** This is trash removed from passenger aircraft and can include bottles, cans, newspapers, magazines, plastic cups and utensils, food waste, and paper towels.

12.2.1. Sources and Pathways of Airport Waste

Each activity has its own set of waste streams that must be considered when implementing a sustainability and recycling program. The following waste streams are typically associated with smaller commercial service airports with significant general aviation operations like Cedar City Regional Airport.[5]

• **Aircraft:** Maintenance of aircraft and ground support equipment produces a variety of waste products that can include grease, oil, universal waste (e.g., batteries), wastewater, plastics, and vehicle waste such as tires and fluids (e.g., brake, transmission, coolant).

• **Airfield:** The airfield (e.g., runways, taxiways, infields) generally only produces a few types of waste products. They can include waste produced from aircraft operations, such as rubber from aircraft tires, and green waste from mowing as well as miscellaneous debris from sweeping and plowing.

• **Airport Construction:** Construction activities have the potential to create a large amount of waste. The types of waste products produced typically include concrete, asphalt, building materials, wood, soil, construction equipment waste, miscellaneous debris, and regular trash.

• **Airport Offices and Pilot Lounges:** The types of waste products generated can include paper, toner cartridges, universal waste (e.g., electronics), food, paper, plastics, aluminum cans, and general trash.

- **Cargo Facilities:** Cargo being transported by air is typically loaded and offloaded at the air cargo facility and is often stored temporarily in the warehouse. Waste can include tires, fluids from equipment, universal waste, wooden pallets, plastics, and packing materials.

- **Terminals:** As the heart of any airport complex, the terminal normally has the largest concentration of people, and this usually translates into the biggest concentration of waste. The terminal houses ticket counters, gates, and car rental counters as well as restaurants and restrooms that are frequented by both passengers and people employed at the airport. In addition, the terminal also houses office space and break areas for airline and airport personnel. The types of waste produced at a terminal are just as varied as the types of activities that take place there. Waste products can include food, paper, plastics, bottles and cans, restaurant grease and oil, universal wastes (e.g., batteries and fluorescent bulbs), green waste (e.g., landscaping), general trash, and deplaned waste.

12.3.   Airport Recycling, Reuse, and Waste Reduction Plan

12.3.1. Scope

The content and scope of an airport recycling, reuse, and waste reduction plan vary depending on the unique conditions at each airport, and certain tasks may not be needed for airports that already have a plan. Document scope is governed by the extent and accuracy of available information. This includes information on the airport's current recycling program, the types and amounts of airport waste, and factors that influence the scope of the program. Plans for small, low activity airports may also be less detailed. Though certain tasks may not need to be completed to prepare a plan, review and documentation of each of the five elements listed in the FAA Modernization and Reform Act is required for airport master plans and master plan updates (including sustainability master plans).

This plan only addresses municipal solid waste (**MSW**), construction and demolition materials, and other waste materials that can be legally disposed of in a Subtitle D landfill. It does not address hazardous waste or universal waste (e.g., batteries, fluorescent bulbs, pesticides) because these materials are often subject to federal, state, and local laws with specific disposal and recycling requirements.

In this plan, recycling refers to reducing the amount of solid waste disposed of in a landfill through sustainable practices that include source reduction, reusing materials, or converting waste into reusable material (e.g., mulching or composting).
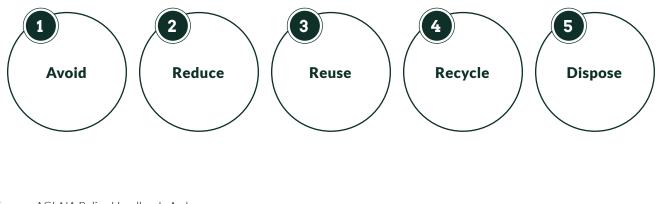
12.3.2. Recycling Feasibility

Available options for recycling in Cedar City and Iron County are somewhat limited because the city's free "binnie" recycling program was discontinued as of January 1, 2020. Current options include the following:

- Robinson Recycling currently accepts several types of metals including steel, iron, aluminum, copper, and brass as well as miscellaneous items such as computer parts and laptops.

- Recyclops is a subscription recycling service that picks up paper, plastic, cardboard, glass, and metal. This service could be used to reduce the amount of waste produced by the terminal and administrative offices that ends up in the local landfill.

- Metals and green waste (e.g., trees, trimmings) can be recycled at the Iron County Solid Waste and Landfill.

12.3.3. Plan to Minimize Solid Waste Generation at the Airport

The *ACI-NA Policy Handbook* provides a waste decision hierarchy that shows—in order of priority—what constitutes the best overall waste management choices (**Figure 12.1**). These include to avoid, to reduce, to reuse, to recycle, and lastly, to dispose—with the ultimate goal of eliminating waste going to landfills.

Figure 12.1:   Waste Decision Hierarchy

1 Avoid   2 Reduce   3 Reuse   4 Recycle   5 Dispose

Source: ACI-NA Policy Handbook, Ardurra.

While effective recycling and waste reduction is a problem faced by every airport, each airport has a unique set of conditions that must be considered as part of its individual recycling and waste reduction program. With this in mind, the FAA compiled a list of ten steps airports can take to design and implement an effective airport recycling and waste reduction program (**Table 12.1**).

Table 12.1:   Effective Airport Recycling and Waste Reduction Programs

Step	Description
1	Commitment from Management
2	Program Leadership
3	Waste Identification
4	Waste Collection and Hauler
5	Waste Management Plan Development
6	Education and Outreach
7	Monitor and Refine
8	Performance Monitoring
9	Promote Success
10	Continuous Improvement

Source: FAA, Recycling, Reuse and Waste Reduction at Airports: A Synthesis Document.

Cedar City Regional Airport should explore the following steps to help minimize solid waste generation:

• Establish a commitment from management to support a recycling and waste reduction program.

• Include lease and contract language that supports recycling and waste reduction.

• Provide additional containers and space for recycling.

• Educate airport staff and users about the importance of recycling and waste reduction.

12.3.4. Airport Operations and Maintenance Requirements

The airport's operations and maintenance requirements were examined in relation to sustainability and how waste is handled at the airport.

• **Aircraft:** The amount of aircraft waste correlates with the number of operations at the airport. The person responsible for aircraft and ground support equipment waste varies depending on the vehicle's owner and who performs the maintenance. The FBO is responsible for aircraft maintenance waste. Some waste associated with maintenance is considered hazardous waste and must be handled accordingly.

• **Airfield:** The infields are mowed regularly for habitat management and wildlife hazard mitigation and clippings are left in place. Sweeping of airfield pavements occurs weekly or more often when needed. Debris from sweeping is disposed of in a trash dumpster. When snow is plowed from airfield pavements, some dirt and grit are also removed as part of this process. The snow, along with any accompanying dirt and grit, is pushed, swept, or blown to the infield and the other undeveloped areas of the airport.

• **Airport Construction:** Contractors are required by the airport to be responsible for providing any waste containers needed for airport construction projects and contracting with the appropriate reuse, recycling, or disposal facilities. They are also encouraged to reuse materials when possible.

• **Cargo Facilities:** These facilities are leased and, as per the lease agreement, the tenants are responsible for trash disposal within this area.

• **Fixed Base Operator and Pilot Lounge:** These waste streams are fairly steady throughout the year and typically consist of food, paper, plastic, aluminum cans, and similar trash items. The fixed base operator (**FBO**) is responsible for maintaining, cleaning, and disposing of waste generated within the FBO building which includes the lounge area.

• **Terminal Building:** In addition to the passenger waiting area, the commercial terminal building houses the airport administrative offices, Transportation Security Administration offices, rental car counters, and the areas used by the airlines for ticketing and baggage claim. These waste streams typically consist of food, paper, plastic, aluminum cans, and similar trash items. Airport staff is responsible for maintaining and cleaning the public areas of the terminal building as well as those used by airport personnel and are responsible for ensuring any waste is disposed of properly. Transportation Security Administration, rental car, or airline staff are responsible for ensuring any waste generated within their respective areas is disposed of properly.

12.3.5. Review of Waste Management Contracts

The Cedar City Street, Storm Drain, and Solid Waste Division is responsible for waste management at the airport. According to the airport's standard lease agreement, airport tenants are required to properly dispose of their waste, and there are five dumpsters located throughout the airport property for this purpose. This trash is taken to the Iron County Solid Waste and Landfill in Cedar City which accepts all waste except hazardous waste (e.g., batteries, pesticides) or liquid waste (e.g., paint, oil). Additionally, the FBO is required to provide adequate and sanitary handling of all trash, waste, and other materials (e.g, used oil, sump fuel, solvents) as needed to comply with the airport's Stormwater Pollution Prevention Plan (**SWPPP**).[6]

12.4.   Conclusion

Cedar City Regional Airport has opportunities to enhance sustainability, recycling, and waste reduction at the airport by establishing formal policies and procedures. One opportunity to enhance sustainability, which has been included in the airport layout plan as a future development, is the addition of electric aircraft and vehicle charging stations. Another opportunity is to use locally sourced materials for construction projects and reuse construction and demolition materials as much as possible.

Any program the airport establishes should include a commitment from management to support sustainability, recycling, education, and outreach as well as setting performance targets, monitoring progress, and seeking continuous improvement. The potential benefits of establishing a recycling and waste reduction program include reduced operating costs, prolonged use of limited landfill space, reduced environmental liability, and improved public perception of the airport.

Endnotes

1   Airports Council International-North America. "ACI-NA Sustainability Policy Statement." February 10, 2017. https://airportscouncil.org/wp-content/uploads/2018/09/aci-na_sustainability_policy_2.10.17.pdf.

2   Airports Council International-North America. "ACI-NA Sustainable Conferences Guidelines." Accessed January 28, 2025. https://airportscouncil.org/wp-content/uploads/documents/aci-na_sustainable_conference_guidelines_general_final.pdf.

3   City of Cedar City. "Cedar City 2022 General Plan." Cedar City, Utah. 2022. https://www.cedarcity.org/DocumentCenter/View/15875/2022-General-Plan-Final.

4   U.S. Environmental Protection Agency. "Basic Information about Landfill." April 4, 2022. https://www.epa.gov/landfills/basic-information-about-landfills.

5   U.S. Department of Transportation. Federal Aviation Administration. "Recycling, Reuse and Waste Reduction at Airports, A Synthesis Document." Office of Airports Federal Aviation Administration. April 24, 2013. https://www.faa.gov/airports/resources/publications/reports/environmental/media/recyclingsynthesis2013.pdf.

6   City of Cedar City. "Rules and Regulations and Minimum Standards." November 29, 2023. https://www.cedarcityut.gov/DocumentCenter/View/7150/Airport-Rules-and-Regulations?bidId=.