CHAPTER 4

SUSTAINABILITY PLAN

Introduction

As part of the Master Plan effort, Sioux Falls Regional Airport (FSD) developed a Sustainability Plan to incorporate sustainable measures into the Airport's long-range planning efforts. Airports around the country, including FSD, are considering sustainability in the planning process because airport operations and infrastructure can be sensitive to extreme weather events and other products of increasing emissions and climate change. Incorporating sustainable measures allows the airport to improve efficiencies and maximize long-term viability of the airport. Integration of sustainability principles will not only result in reduced environmental impacts, but also provide for cost reductions through increased operational efficiencies, enhance relationships with stakeholders, and improve resilience of both operations and infrastructure. Further, as sustainability has become an FAA priority, grant programs often include sustainability-based criteria (whether through emission reduction or increased access to disadvantaged communities) that airports must meet to receive funding. Enhancing sustainability in FSD's long-range planning will make the airport more competitive in seeking out funding opportunities.

The Airport's interest in sustainability builds upon efforts initiated throughout the Sioux Falls region that FSD serves. For example, the City of Sioux Falls' sustainability framework aims to guide City planning and development with a focus on five areas: natural systems, materials management and waste, community vitality and sustainability, energy and buildings, and transportation and land use. The City Light & Power Division that serves the Airport has a goal to convert city streetlights to LED by 2028, reducing energy use, and Heartland Energy, which supplements municipal power, sources 60 percent renewable energy. Further, airport tenants have expressed interest in sustainability. The Army National Guard has indicated interest in renewable energy sources at the Airport to meet their own sustainability goals, while Delta Air Lines has set its own policies and priorities for achieving greater sustainability. The strong interest from the City and other stakeholders presents excellent opportunities for future collaboration and coordination regarding sustainability goals.

FSD strives to be environmentally, operationally, and financially sustainable to continue serving the Sioux Falls community and those who visit. This Sustainability Plan will guide long-term Airport planning to provide financial, operational, environmental, and social benefits to the region.

Sustainability Definition

While, in general, sustainability refers to balancing financial, environmental, and social considerations in decision making, the definition of sustainability is tailored to each organization based on unique environmental, operational, and community characteristics. To develop FSD's customized definition of sustainability, Airport staff reviewed several commonly cited definitions of sustainability to better understand how sustainability will meet FSD's needs, while recognizing that this definition can evolve over

time. Ultimately, the Airports Council International – North America (ACI-NA) definition of sustainability most resonated with the Airport. ACI-NA defines sustainability as:

*A holistic approach to managing an airport to ensure the integrity of the **E**conomic viability, **O**perational efficiency, **N**atural Resource Conservation, and **S**ocial responsibility (EONS) of the Airport.*

While many definitions of sustainability refer to the triple bottom line (i.e., Social, Environmental, and Economic), stewardship of EONS is well-rounded for airports because it also incorporates the importance of airport operational efficiency. For this reason, Sioux Falls Regional Airport adopted this definition as one that meets the Airport's needs.

Sustainability Vision

After identifying a sustainability definition for FSD, the next step in the Sustainability Plan process was to consider how this idea can be embraced at the Airport. A sustainability vision statement clarifies the direction in which an organization wants to move in terms of sustainability and how it relates to social, financial, operational, and environmental factors. A vision statement serves as a guiding beacon that affects decision-making, operations, and strategy for plans at the airport. After discussion, Airport staff identified the following sustainability vision statement:

To foster a sustainable future for the communities that we serve while providing a safe, efficient, and sustainable gateway for Sioux Falls and South Dakota.

4.1 Sustainability Focus Areas

Sustainability Focus Areas help narrow the focus within planning to those elements that are most applicable to an organization. FSD staff selected the Focus Areas below that are important to the Airport and community. These Focus Areas will help FSD prioritize its sustainability goals and efforts and provide a roadmap for implementation. FSD is committed to implementing sustainable initiatives that benefit four key areas:

Waste: FSD has developed a waste management plan as part of this Master Plan, which provides a path forward for reducing waste and emphasizing recycling.

Energy: Energy is an important sustainability issue for FSD because reducing energy/fuel use can reduce greenhouse gases (GHG) and reduce operating costs for the Airport.

Operations and Maintenance: The majority of Airport staff time and resources is dedicated to the continued maintenance and operation of the facilities. Considerable effort is expended to keep the facility running optimally. Operations and maintenance activities represent the best opportunity to incorporate sustainability into both the management and infrastructure of the Airport.

Passenger Experience: Enhancing conditions for Airport users is an important social sustainability issue for FSD to ensure all passengers have a positive travel experience at the Airport. In turn, as passengers continue to choose to fly into and out of FSD, the Airport's long-term viability is enhanced.

4.1.1 Sustainability Goals, Metrics, and Initiatives

For each Sustainability Focus Area, a set of goals was developed along with metrics and initiatives for each goal. Metrics are mechanisms used to measure progress toward the goals over time. They provide a means to measure if and how a goal is being met. Initiatives are actions that the Airport can take to make progress toward goals.

Waste

As part of this Master Plan a Recycling, Reuse, and Waste Reduction Plan was developed for FSD to increase diversion and better manage the Airport's waste stream. Recycling efforts already in place at the Airport include comingled collection bins and recycling and reusing old pavement materials as base course for new pavements. Additionally, a liquid dumping station located prior to the security checkpoint helps to keep liquids out of the recycling stream. The plan recommends strategies to divert additional waste and improve the existing waste management program at FSD. During sustainability visioning, Airport staff indicated a desire to expand recycling and reduce reliance on single-use materials. Airport staff consider waste reduction to be an important consideration in airport planning from the perspective of minimizing environmental impacts, as well as reducing costs for purchasing materials and landfilling waste. These factors led to waste diversion being selected as a focus area in this sustainability plan. For more information about recommended strategies for improving FSD's waste management program, see **Appendix D** for the full Recycling, Reuse, and Waste Reduction Plan.

Waste Management Goal 1: Improve waste diversion at FSD.

Metrics: Percentage of total Airport waste diverted from landfill; waste volume/costs

Initiatives:

- Track the volume of waste to landfill; volume diverted through reduction, reuse, donation, recycling, and other strategies; and the costs associated with these services.
- Create a waste reduction and education campaign for FSD staff and tenants:
    - Host training outlining waste reduction and recycling program.
    - Include waste program in semi-annual staff and stakeholder training.
- Enhance existing recycling program:
    - Standardize public-facing receptacles, repurposing old bins in non-public areas.
    - Introduce consistent instructional signage.
    - Incorporate additional materials, if feasible.

    - Expand collocated recycling and garbage bin pairs throughout the facility.
- Incorporate specific contract language requiring sustainable practices in consultant's planning and design agreements, in construction contracts for future projects, and encourage such language in tenant lease contracts.
- Identify sources of waste and promote strategies to avoid, reduce, or divert these materials.
- Prioritize reuse of facilities and materials when feasible (for example, when re-use either provides cost and efficiency advantages or is neutral as compared to new materials).
- Optimize the waste and recycling program during the terminal concourse expansion design.

Waste Management Goal 2: Improve sustainable purchasing practices.

Metrics: Percentage of materials sustainably sourced (recycled content, non-toxic, rapidly renewable, bulk purchases, compostable); list of reusable materials, compared annually; list of locally sourced materials, compared annually.

Initiatives:

- Adopt a purchasing policy that prioritizes durable items and supplies, followed by reusable, recyclable, and recycled-content items. Focus on bulk goods, materials with minimal packaging, non-toxic products, and energy-efficient equipment.
- Review on-site supplies and reuse, donate, and avoid purchasing where possible.
- Reduce purchase/use of single-use plastics and consider requiring the same of concessions tenant.
- Continue to prioritize local product purchasing and construction materials sourcing when feasible.

Energy

Airport facilities use energy in a variety of ways, from powering, heating, and cooling buildings to fueling airport fleet vehicles and construction equipment. Energy is measured based on the type of energy being consumed; electricity is measured in kilowatt hours (kWh), natural gas in therms, and liquid fuels like diesel or unleaded gasoline in gallons. With a direct link between energy consumption and greenhouse gases, improvements in energy efficiency can reduce emissions, as well as lead to cost reductions in airport operations. The amount of energy used can be affected by operational considerations and day-to-day decisions such as light fixture or fuel type, as well as how infrastructure is laid out and where it is built, which can influence how much energy is used to reach and maintain any given facility.

FSD has prioritized energy-oriented sustainability measures such as transitioning both airfield and terminal lighting to LED lighting, incorporating more natural lighting into the terminal, and maximizing the thermal efficiency of the terminal building. FSD has also installed modern heating boilers and modern air handlers that incorporate recovery wheels. Additionally, FSD will consider energy efficiency and associated cost reductions for new projects during planning and design.

Energy Goal 1: Reduce energy usage for Airport-owned facilities.

Metrics: Reduction in annual energy usage/costs (kWh of electricity/therms of natural gas)

Initiatives:

- Track and evaluate FSD's annual energy bills and how they reflect usage to identify how energy use is distributed across airport facilities and explore reduction opportunities.
- Inventory airfield lighting by type (i.e., incandescent or LED) and develop a plan to convert the remaining incandescent lighting to LED as future airfield projects occur.
- Continue incorporating LED in new and remodeled terminal building areas; convert all remaining fluorescent lamps to LED in existing terminal area and other airport-owned facilities.
- Consider alternative energy sources in terminal design.
- Integrate energy saving measures in design, such as occupancy sensors and daylighting to reduce use of interior lighting systems.
- Design new facilities to minimize travel distance and idling time for aircraft, maintenance vehicles, and other vehicles.
- Consider minimizing pavement for plowing and other maintenance activities for any new aprons, taxilanes, and access roads.

Energy Goal 2: Increase energy efficiency at the Airport.

Metrics: Reduction in energy use; reduction in kWh per square foot; increased vehicle fleet miles per gallon; percentage of fleet that is energy efficient/uses alternative fuels; integration of energy efficiency measures in design (i.e., for new facilities)

Initiatives:

- Consider feasibility of and evaluate grant opportunities to transition the airport vehicle fleet to electric and/or alternative fuel options. (Electric vehicles tend to be more efficient than internal combustion and diesel-powered engines.)
- Include a placard in all Airport-owned vehicles and curb-front signage to discourage idling. (Reduces time where fuel efficiency is zero while vehicle is at a stop.)
- Explore opportunities to partner with airlines to electrify ground support equipment (GSE).
- Consider efficient heating and cooling systems for buildings along with efficient building materials.
- Incorporate requirements for energy efficiency and resilience into bid documents for the upcoming terminal expansion.
- Incorporate specific contract language requiring sustainable practices in consultants' planning and design agreements, in construction contracts for future projects, and encourage such language in tenant lease contracts.

- Work with tenants with an interest in alternative energy, such as the Army National Guard who has inquired about putting a solar array on the guard installation.
- Consider solar feasibility for an Airport-owned power source.
- Explore grant options for energy-efficient materials and systems and their use within the terminal.

Operations and Maintenance

Existing operations and maintenance practices include both short- and long-term resiliency measures, such as snow removal to deal with a major snowstorm and ensuring the airfield remains in a usable condition into the future. To meet safety requirements and address potential disruptions, the Airport consistently operates and maintains the facility with a high level of diligence. Examples of maintenance activities include snow removal, pavement repairs, security improvements, trimming and mowing of vegetated areas, removal of wildlife hazards and attractants, lighting improvements and replacement, and many more. Operations and maintenance activities represent a key opportunity for incorporating sustainability into both the management and structure of the Airport.

Operations and Maintenance Goal 1: Maintain Airport infrastructure and passenger facilities in safe and good usable condition.

Metrics: Compliance with current FAA standards and recommendations; portion of Airport expenses dedicated to maintenance.

Initiatives:

- Maintain a pavement management program that prioritizes preventative maintenance to maximize the life of the Airport's pavements.
- Continue cycle of airport planning aiming to accommodate demand while meeting FAA standards.

Operations and Maintenance Goal 2: Improve operational resiliency.

Metrics: Enhanced operational abilities to face disruptions; minimal times of runway closures or other conditions that disrupt operations.

Initiatives:

- Consider efficient snow removal in facility layout and design.
- Incorporate resiliency measures, such as considering climate and cyber risks, into planning and design efforts.
- Continue with plans to replace undersized generator with new, higher-capacity generator.
- Consider opportunities to create redundancies, including an additional generator.

- Improve Runway 33 approach capabilities to extent possible to maximize airfield use and minimize required snow removal efforts especially during snow events.
- Reuse existing infrastructure and materials to achieve maximum cost effectiveness.
- Maintain the Airport's emergency action plans outlining the roles, responsibilities, and protocols that guide the Airport in promptly sharing information with all stakeholders during an emergency or crisis; continue to hold staff emergency training events.

Passenger Experience

FSD strives to continually improve the passenger experience by providing comfortable and accessible facilities and additional amenities. The Airport has introduced features that accommodate passengers with disabilities, including an adult-sized changing table in the family restroom during its recent concourse renovations; FSD was one of the early airport adopters for this equipment. The Airport also aims to provide a good travel experience for all passengers, with expanded concessions located near gates, a new business lounge, and a soon-to-be-built parking ramp to provide covered parking capacity close to the terminal.

Passenger Experience Goal 1: Enhance the passenger experience with improved passenger terminal facilities and amenities.

Metrics: Number of new or improved passenger amenities.

Initiatives:

- Complete the covered parking ramp project, which will:
    - Increase parking capacity
    - Provide passengers and vehicles with protection from inclement weather
    - Incorporate electric vehicle charging stations
    - Decrease walking distance to the terminal
    - Include skyway access to the terminal to better accommodate passengers, especially during adverse weather
- Provide additional family restrooms with adult-sized changing tables to consider the needs of passengers with disabilities.
- Improve passenger wayfinding with additional and/or upgraded signage. Consider incorporating more icons on signage.
- Continue to modernize concessions by expanding capacity, providing more options, and considering optimal locations and operating hours.
- Consider inclusion of sensory room or additional passenger amenities within terminal expansion.

- Explore ADA accessibility enhancements, for example accommodations for sight- and hearing-impaired passengers, or incorporating requirements for ADA accessibility enhancements into bid documents for the upcoming terminal expansion.

Passenger Experience Goal 2: Minimize impacts to passengers during construction.

Metrics: Maintain consistent throughput of passengers and positive feedback.

Initiatives:

- Phase construction to allow access to necessary and desirable facilities and amenities throughout the construction period.
- Continue plans to provide shuttles from economy and long-term parking lots to terminal curb front during parking ramp construction.
- Minimize gate closures during terminal expansion construction.

4.2 Master Plan Sustainability Screening Criteria

The goals identified in this chapter will help weigh the benefits and drawbacks of various development alternatives through a sustainability lens in **Chapter 5 – Alternatives**. Additionally, these goals have been translated into sustainability screening criteria to help evaluate the terminal expansion alternatives in the Terminal Planning Study (**Appendix C**).

4.3 Future Considerations

The above goals and initiatives provide a roadmap for improving sustainability at the Airport. Because this Plan captures only a moment in time, and conditions, technologies, and airport priorities may change, it is anticipated that sustainability goals and initiatives will evolve over time.

The local community and tenants may provide ways to collaborate in sustainable initiatives, including the City of Sioux Falls. FSD may be able to assist the city in achieving their own sustainability goals, and potentially leverage shared systems or processes that they have developed that can reduce Airport-specific effort. It may be worthwhile to explore potential public/private partnership opportunities with the City to help maximize funding and minimize labor efforts to implement FSD's sustainability goals.

Based on the *Sioux Falls Draft Transit Plan* recommendations, FSD may want to consider partnering with the City of Sioux Falls to introduce an airport bus stop to improve connectivity for local passengers. The *Draft Transit Plan* states that an airport stop was among one of the most frequently requested stops in the transit survey bus stop feedback. Based on this feedback, expanding service to the airport area is one of the *Plan's* fixed-route service recommendations.

Additionally, the Airport may wish to understand their GHG emissions more specifically and could consider an emissions inventory in the future to more accurately track reductions achieved from sustainability initiatives. In the process of exploring emissions, FSD could pursue Airport Carbon Accreditation through the Airports Council International (ACI) organization.

Furthermore, as various building projects are evaluated in the Master Plan and undertaken, FSD may want to formalize efforts to use sustainable materials and practices going forward. This could include:

- Incorporating sustainable building and development practices into design and construction standards when an update is needed.
- Developing stand-alone Sustainable Design Guidelines or a Sustainable Construction Management Plan.

Other future measures the Airport could explore include accessibility and passenger experience enhancements, such as:

- Piloting an advisory committee made up of passengers with disabilities.
- The Accessibility Enhancement Accreditation through the ACI organization.

4.3.1 Sustainability Plan Review and Improvement

Ultimately, the Airport should consistently evaluate progress toward the stated sustainability goals and initiatives to record successes and to consider revising the plan or incorporating other options where steps toward a particular goal may not seem achievable. This does not require a review or revision of the entire sustainability plan at once; each component could be analyzed as implementation occurs to determine where improvements can be made, or changes are needed based on updated conditions.

4.4 Summary

The goals, metrics, and initiatives identified in this Sustainability Plan represent the broad effort that the Airport can embark on to continuously improve. It is anticipated that as these initiatives are completed, additional actions will be identified to keep sustainability considerations in the forefront of planning and implementation efforts. As this occurs, additional resources, goals, and actions should be developed based on new information, technology, and changing conditions. By becoming more sustainable, FSD will support a balanced future that is tailored to the unique needs of its passengers and the region it serves.