

May 16, 2023

To: Mayor Hoy and Councilors

SUBJECT: Feasibility study for renewable energy at Salem Municipal Airport (McNary Field)

We are writing to recommend that the City of Salem conduct a feasibility study for the installation of a photovoltaic (PV) array, battery storage, and microgrid at Salem's McNary Field.

The Federal Aviation Administration declared in 2018 that: "Solar is a renewable energy source that contributes to national goals of sustainability, energy independence, and air quality improvement. It is particularly well-suited to airports because of the available space at airports, unobstructed terrain, and energy demand."¹

Commercial airports, large and small, have embraced solar energy as a way to reduce the carbon footprint of airport operations. Chattanooga's airport (TN), slightly larger than Salem's, led the way with the installation of a one-megawatt system in 2010. Today, they have a system that generates 2.7 megawatts. This capacity meets the total energy needs of the airport operations.² The New York Times, in a 2021 article, reported that 20% of public airports have integrated solar panels into their landscape.³

A one-megawatt system requires about 6 non-contiguous acres of solar panels.⁴ Salem's McNary Field has 751 acres. It would require converting less than one percent of the airport's existing land to support a one-megawatt system.

A review of McNary Field's airport existing and future design will show that there are many opportunities to site a one-megawatt ground-mounted solar array that both meet the FAA's design requirements and limits the loss of buildable land. For example, the space between the east taxiway and building footprints along Turner Road is a potential candidate for a solar array. Similarly, the southeast corner where Airport Road meets Turner Road may also be a good candidate.⁵

The cost for a ground-mounted solar system is more expensive than a rooftop system, although ground-based arrays are often larger and benefit from efficiencies of scale. Current estimates for installation of ground-mounted solar arrays range from \$2.00 to \$4.00 a watt. Therefore, a one-megawatt system would cost between \$2 million and \$4 million before grants or other incentives. Fortunately, the city has a successful track record of raising grant funds for infrastructure development. One recent example is a

¹ Federal Aviation Administration. "Technologic Guidance for Selecting Solar Technologies on Airports." Version 1.1. Washington, DC. April 2018, p. 1.

² Chattanooga Airport. Chattanooga Airport Solar Farm. Accessed on April 22, 2023. <https://www.chattairport.com/solar-farm>

³ Zipkin, Amy. "Seeking Space for Solar Farms, Cities Find Room at Their Airports." *The New York Times*. December 20, 2021.

⁴ Oregon Department of Energy. "Study on Small-Scale and Community-Based Renewable Energy Projects." State of Oregon. Salem, OR. September 2022, p. 18.

⁵ The FAA has permitted solar arrays in the runway protection zone. See page 31 of "Technologic Guidance for Selecting Solar Technologies on Airports."

Airport renewable energy feasibility

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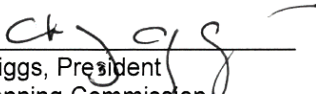
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\$1 million grant from the Oregon Department of Energy to help fund the installation of solar panels and a microgrid at the City's new public works building.

A solar array with battery backup and a microgrid would also improve the airport's resilience in the case of a disaster. Moreover, reducing GHG emissions from City facilities and establishing a system of microgrids are both part of the Salem's climate action plan.⁶

The City has approved funding for improvements to the airport and is also undertaking a master plan process. We recommend that the scope of the master plan be expanded to include a solar feasibility study. Fortunately, the consultants engaged to conduct the master plan are qualified to provide a solar feasibility study.

Sincerely,



Chane Griggs, President
Salem Planning Commission

⁶ City of Salem & Verdis Group. Salem Climate Action Plan. Final Draft. November 2021. Accessed on May 5, 2023. <https://www.cityofsalem.net/home/showpublisheddocument/5348/637801058544930000>