



**Federal Aviation  
Administration**

# Evaluation of Solar Lighting Systems for Airports

Presented to: REDAC Sub-Committee on Airports

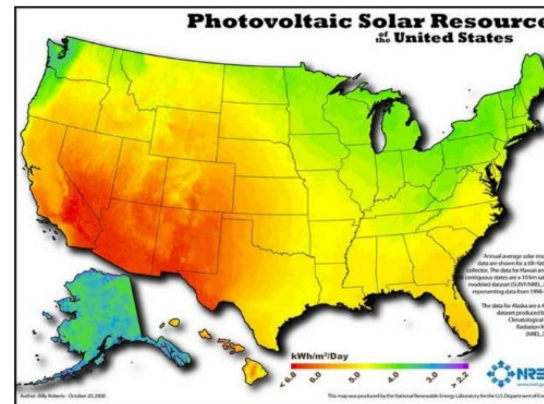
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# Evaluation of Solar Lighting Systems for Airports

- **FAA Airport Engineering Division (AAS-100) Requested ATRD Conduct Research to Evaluate Solar Lighting Systems at Five GA Airports in Diverse Geographic Regions Based on Varied Solar Insolation, Ambient Temperature Range, and Snow Fall.**
- **Geographic Regions Selected Include New Jersey, Upstate New York, Central Arizona, Washington State, and Central Oklahoma.**
- **Cape May Airport (WWD) in New Jersey is the Initial Prototype GA Airport Site.**
- **Laboratory Testing of Solar Devices for Installation at WWD has been Completed.**
- **FAA issued a stop work order to Contractor for field work at WWD on March 31<sup>st</sup>, 2020 due to COVID-19 Pandemic.**
- **Field Work at WWD was Restarted the Week of August 10<sup>th</sup> , 2020.**
- **Project Schedule Currently Being Updated for Completion of WWD Test Site and Initiation of Work in other Regions.**



# Evaluation of Solar Lighting Systems for Airports

- **Once Test Site at WWD is Operational and Acquiring Data the Project Team will Initiate Work to Construct a Second Test Site in Upstate New York.**
- **Site Surveys will be Conducted at Three GA Airports in Upstate New York (Oswego County (FZY), Dunkirk (DKK), and Penn Yan (PEO)) in Fall 2020.**
- **One of These NY State GA Airports will be Selected for Conducting a Solar Powered Lighting Evaluation in FY 2021.**
- **Selection and Construction of Test Sites in Three Remaining Geographic Regions Has Not Been Scheduled.**
- **Evaluations at All Test Sites will be Conducted over a Sufficient Period of Time to Allow for Assessment of Seasonal Solar Insolation and Related Battery Charging Capabilities.**



# Solar Lighting System Evaluations

- **Evaluations will be Conducted on the Following Airfield Components:**
  - L-861 Runway Edge/Threshold Lights
  - L-861T Taxiway Edge Lights
  - L-810 Obstruction Lights
  - Elevated Runway Guard Lights
  - Wind Cones
  - Airfield Guidance Signs
- **Component Selections Based on Compliance with FAA Requirements for Intensity and Chromaticity and Have Been Obtained from Three Manufacturers.**
- **Components are Decentralized Type with Each Having its Own Solar Panel and Battery/Charging System.**
- **Evaluations Consist of Laboratory Testing and Field Testing:**
  - **Laboratory Evaluations Consist of Both Photometric Testing and Autonomy Testing.**
  - **Field Testing will Assess the Functionality and Durability of the Solar Powered Devices at Selected GA Airports Under Varying Environmental Conditions.**



# Installation of Solar Powered Devices at WWD

- **Solar Powered Devices Located on an Abandoned Section of Former Runway 14-32.**
- **Solar Device Test Beds Have a Combined Foot Print of Approximately 100 feet x 70 feet.**
- **Test Beds are Portable Aluminum and Steel Structures Supporting Solar Powered Devices and Ballasted to Withstand FAA Prescribed Wind Forces.**

