

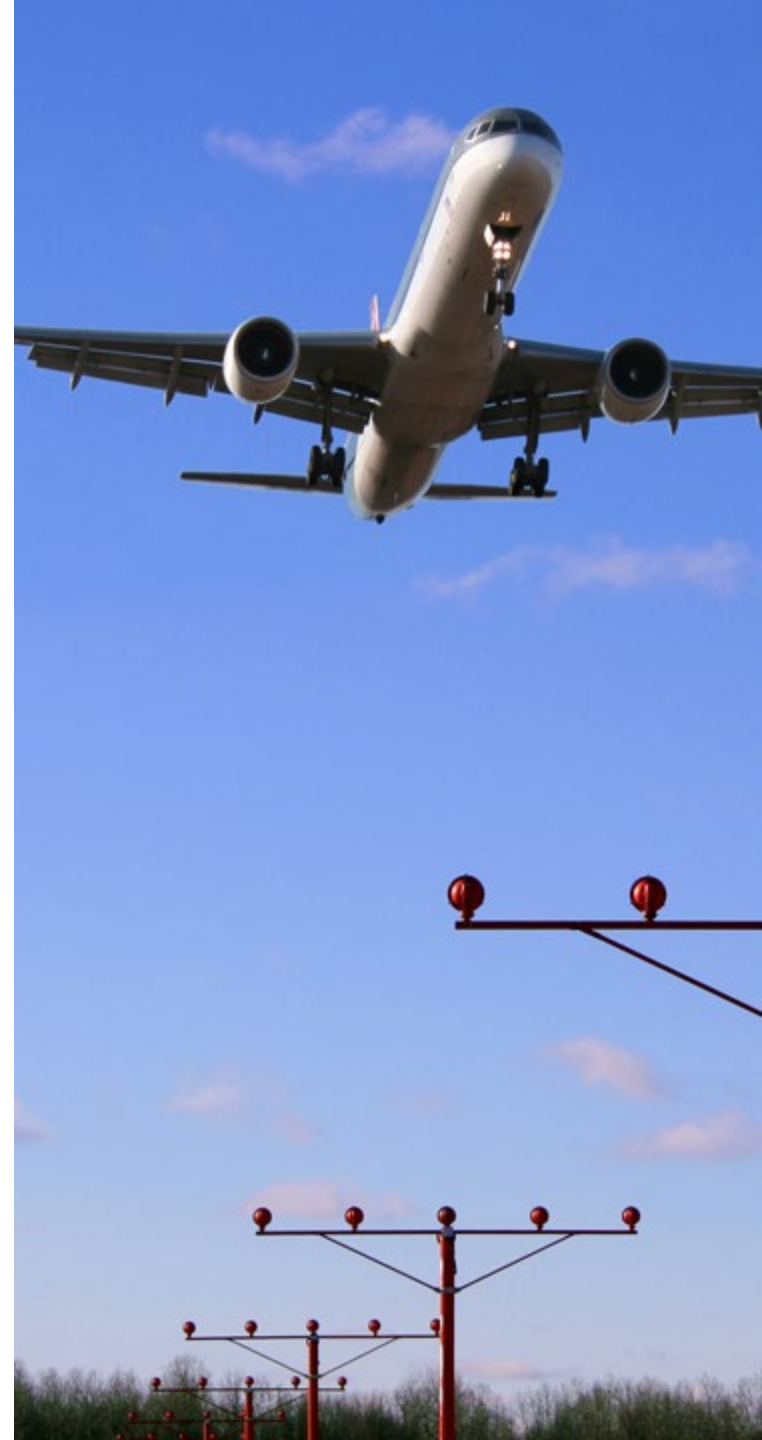
Illuminating Engineering Society (IES) Government Contacts Sub-Committee Meeting

Renee Williams

Visual Guidance Lighting Systems

AJM-3220

April 19, 2022



Overview

- **Visual Guidance Lighting Systems (VGLS) Team**
- **Lighting Systems and Ancillary Equipment**
- **Capital Investment Programs**
- **Active Procurements**
- **Next Generation Lighting Systems**
- **Specification and Standard Installation Drawing Updates**
- **Procurement Opportunities**



VGLS Team Contact Information

Name	Projects	Phone
Steve McArthur	Manager	202.253.9862
Renee Williams	RVR, LIR	202.267.9923
Ndubuisi Nnorom	ALSF-2, RLMS, REIL, RRCS, SFSB	202.267.9923
Donald Lampkins	MALSR, PAPI, LED	202.267.7332



Lighting Systems and Ancillary Equipment

- **High Intensity Approach Lighting System with Sequenced Flashing Lights (ALSF-2)**
- **Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR)**
- **Precision Approach Path Indicator (PAPI)**
- **Runway Visual Range (RVR)**
- **Runway End Identifier Lights (REILs)**
- **Radio Remote Control System (RRCS)**
- **Visual Approach Slope Indicator (VASI)**
- **Radio Remote Control Interface Unit (RRCIU)**
- **Replacement Lamp Monitoring System (RLMS)**
- **Lead-in Lights**
- **Semiflush Flashers and Steady Burners**
- **Low Impact Resistant (LIR) Structures**
- **Transformers**
- **Frangible Bolts**

Capital Investment Programs

- **Runway Visual Range**

Replaces older RVR equipment with PC-Based RVR equipment. RVR provides air traffic controllers with a measurement of the visibility at key points along a runway: touchdown, midpoint and rollout.

- **Approach Lighting System Safety Enhancement**

Upgrades the equipment to current standards and reduces the potential severity of take-off and landing accidents by replacing rigid structures, and the entire approach lighting system, with lightweight and low-impact structures that collapse or break apart upon impact. In addition, the program will transition to Light-Emitting Diode (LED) technology and start installations of Parabolic Aluminized Reflector (PAR) LEDs in FY 2023.

Capital Investment Programs

- **Nav aids Sustainment**

Sustains Approach Lighting Systems (ALS), which includes MALSR for Category I approaches and ALSF-2 for Category II/III approaches. Additionally, Nav aids Sustainment supports the REIL and RLMS projects.

- **Visual Nav aids for New Qualifiers (VNNQ)**

Supports the procurement, installation, and commissioning of PAPI systems and REIL systems at new qualifying runways.

Capital Investment Programs

- **Replace VASI with PAPI**

Supports the procurement, installation, and commissioning of PAPI systems in order to comply with ICAO's recommendation to replace the VASI lights with PAPI lights.

- **Instrument Landing Systems**

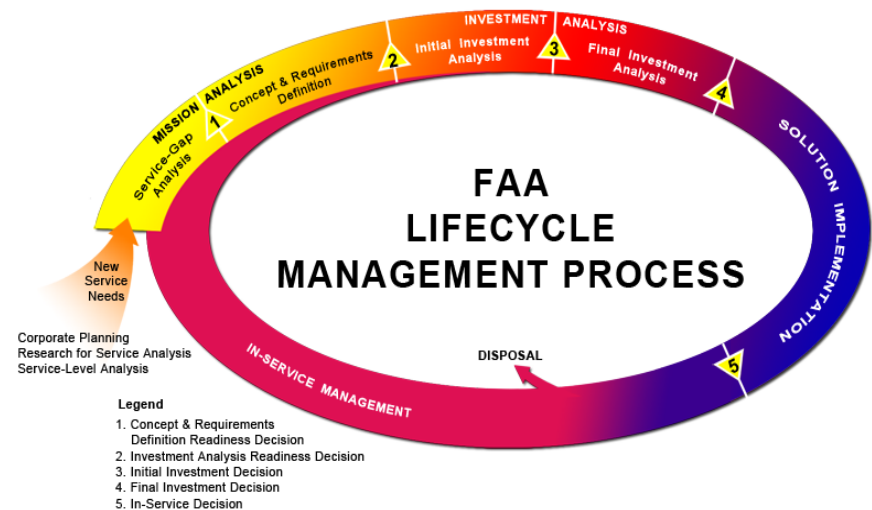
Supports the installation of ILS and/or High Intensity Approach Lighting System. An ILS precision approach system is comprised of a grouping of electronic devices Localizer, Glide Slope, marker beacons and, in some cases, ancillary aids (DME, ALS, RVR, etc.)

LED PAPI / LED MALSR

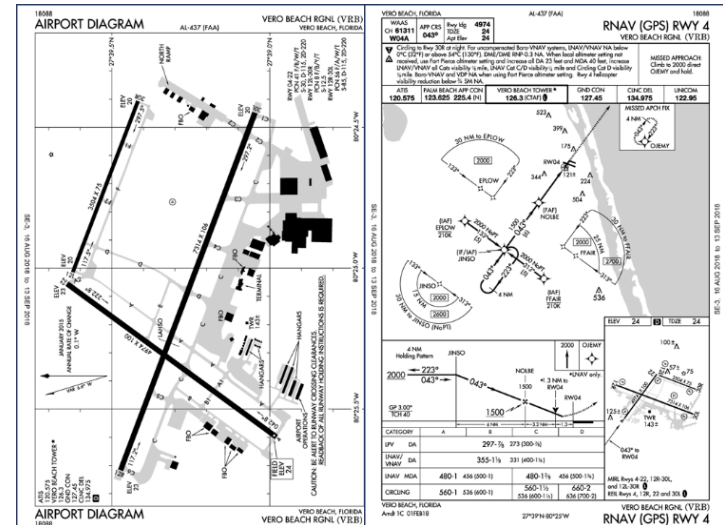


LED PAPI Project

- **Objective:** The primary objective is to fully deploy LED PAPI by using the System Development, Deployment and Implementation phases of FAA's Acquisition Management Systems (AMS) process
 - **Project Activities**
 - Preliminary Design Review
 - Critical Design Review
 - Design Qualification Test
 - Operational Test
 - Configuration Audits
 - Product Baseline
 - **In-Service Management**



- **Installed and Commissioned 72 LED PAPI systems**
- **LED PAPI's have been shown to reduce energy consumption by over 60%**



Incandescent Lamps Project



- **Issue:**
 - FAA has experienced a shortage of suppliers of the PAR-38 incandescent lamps for the MALSR systems in the NAS
- **Status:**
 - In the interim, Alternative Incandescent Lamps (AILs) have been identified and approved to support the MALSR systems in the NAS
 - Currently maintaining a pulse on the incandescent market, and procuring incandescent lamps as needed
 - Transition from current PAR-38 and PAR-56 incandescent lamps, to an energy efficient LED solution

LED Lamps Project

- Obtained approval to proceed with the production of LED lamps (EA Decision Point 239)
- Installed LED PAR-38s and PAR-56s at Savannah/Hilton Head Airport (SAV), and John Glenn Columbus Int'l CMH
- Awarded LED PAR-38 & PAR-56 lamp repair service contracts
- **Complete installing prototype LED PAR-38s and PAR-56s at two (2) MALSR operational sites**
- **Complete and approve LED Lamp Specification**
- **Award LED Lamp production contract**

MALSR Supportability Study

- **Problem Statement**

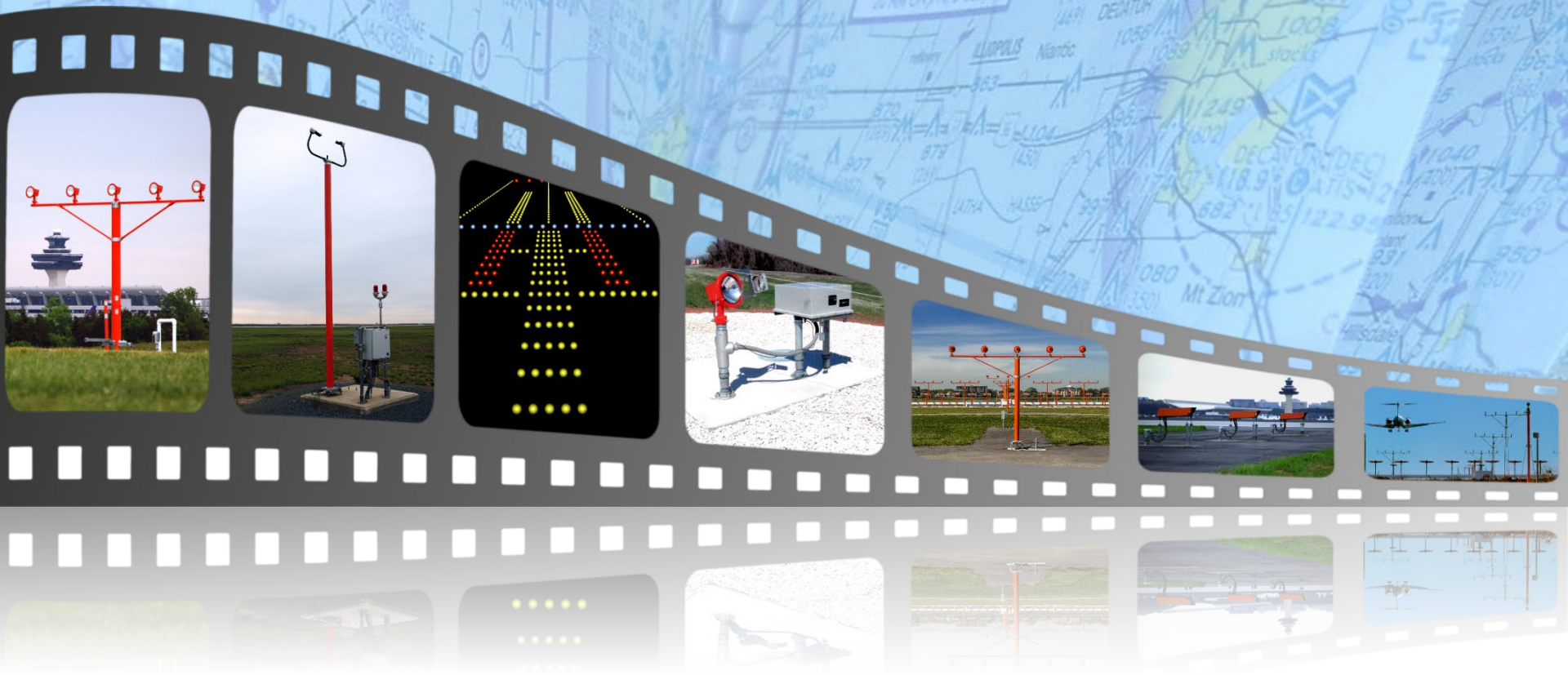
- 90 percent of the 900+ MALSR systems have reached its life expectancy
- Logistics issues plaguing the MALSR systems such as:
 - Rising maintenance cost
 - Aging infrastructure
 - Increasing supportability and obsolescence concerns
- Rising installation cost \$2M per full replacement of MALSR System

MALSR Supportability Study

- **Methodology**

- Determine the feasibility for continuing over 900 MALSR/MALSF/MALS systems through the year 2045
- Identify parts obsolescence, performance issues, parts demand, operations costs, equipment condition, system availability, characterize system supportability, and evaluate failure rate
- Conduct Quantitative Analysis
- Conduct Qualitative Analysis
- Develop Recommendations for Sustainment Initiatives

Specifications and Standard Installation Drawings



Specification Updates

- LED REIL: *Approved (Mar 2018)*
- ALSF-2 SLEP: *Approved (November 2021)*
- **LED PAR-38 & PAR-56 Lamp:** *Anticipated Approval (April 2022)*
- **LED PAPI System:** *Anticipated Approval (September 2022)*
- **LED MALSR System:** *Anticipated Approval (February 2023)*

Reasons for Change
<ul style="list-style-type: none">▪ LEDs▪ Changes in Standards▪ Color Boundaries▪ Photometrics▪ Changes in Testing Requirements▪ Design vs. Performance▪ Outdated Specifications

Standard Installation Drawings

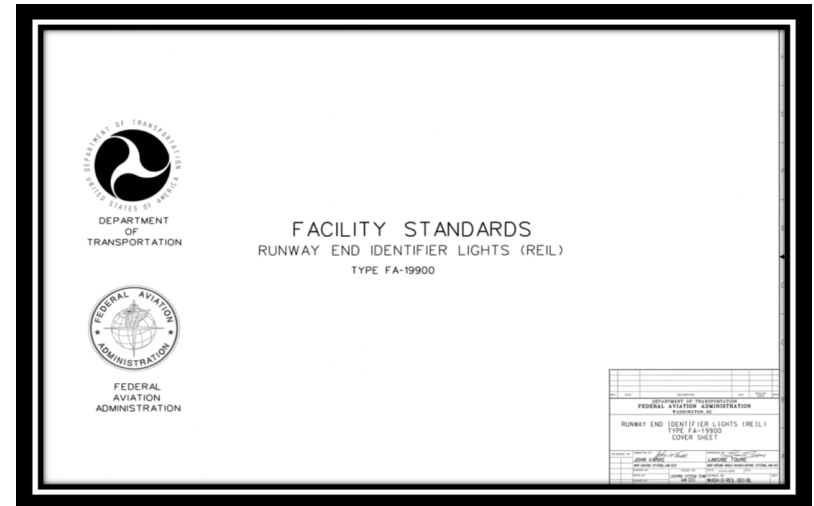
- Established a Working Group to update VGLS Standard Installation Drawings
 - Working Group members:
 - Civil and Electrical Engineers
 - WSA, CSA, ESA, HQ

Update Summary

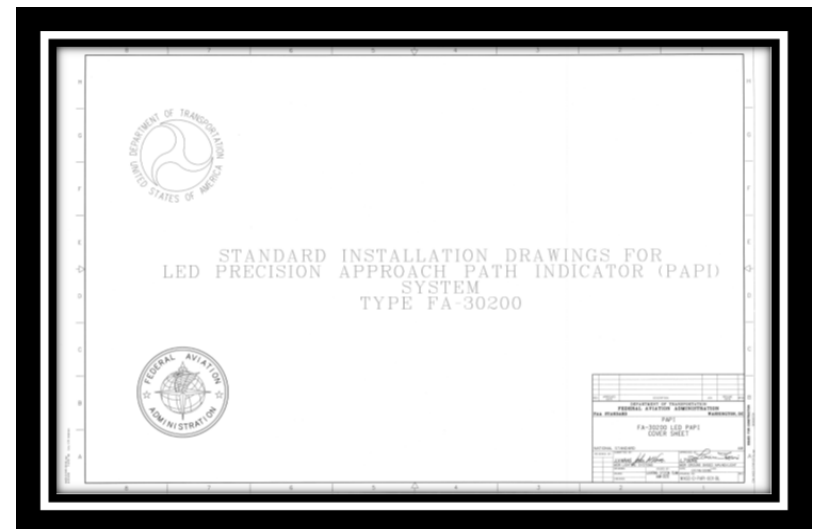
- Outdated Drawings
- Changes in FAA Standards (i.e., FAA-STD-019)
- Improve Drawing Layout
- Outdated Specifications
- Comprehensive Drawing Package

Standard Installation Drawings

- Standard REIL Drawings approved 2018



- Standard PAPI Drawings approved 2019



Standard Installation Drawings

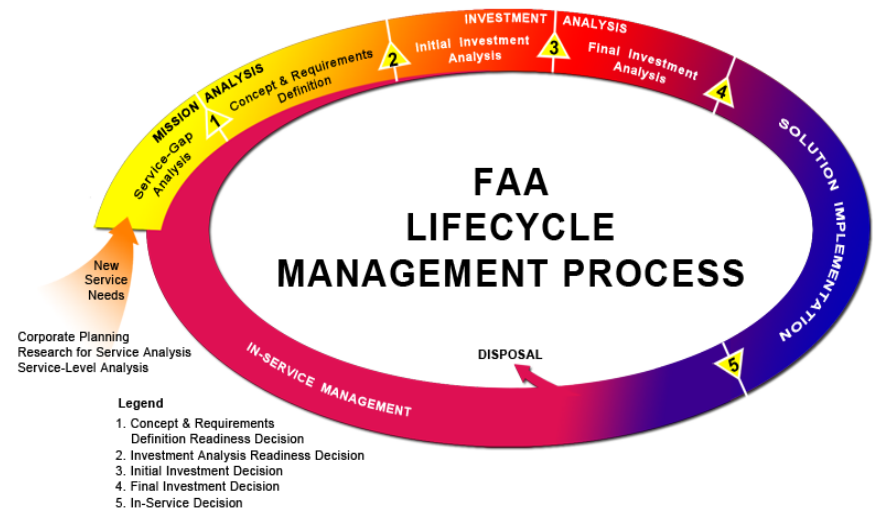
- MALSR Drawings are 75% complete
- Restart MicroStation to AutoCAD conversion: April 2022
- Complete conversion from MicroStation to AutoCAD by July 2022
- Complete MALSR drawings by December 2022
- Complete remaining Drawings (ALSF-2 and any additional updates) by July 2023



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Procurement Forecast

- ALSF-2 SLEP (FAA-E-2999)
- Incandescent PAR-38
- LED PAR-38/PAR-56
- RRCS Technical Refresh



Note: You should monitor the <https://beta.sam.gov/> website for procurement opportunities.

Disclaimer: This forecast is for informational and marketing purposes only and does not constitute a specific offer or commitment by the FAA to fund in whole or in part any of the procurements referenced herein.

Questions?

