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Massachusetts Department of Transportation
Aeronautics Division

Board Report:

Aeronautics Hosts FAA Assistant Administrator for Policy, International Affairs, and Environment - Laurence Wildgoose, State FY23 FAA Airport Improvement Program Grants, MA Airport Pavement Management Program (APMP) Study Findings & Drone Data Collection Supports Pavement Analysis of the Chelsea Aqueduct

September 21, 2022

Presented to:

- **Board of Directors**

Presented by:

- **Aeronautics Division**
  - Dr. Jeff DeCarlo

Aeronautics Hosts FAA Assistant Administrator for Policy, International Affairs and Environment - Laurence Wildgoose (APL-1) FAA Headquarters

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- On June 15th, Aeronautics hosted a visit with FAA Assistant Administrator, Laurence Wildgoose, FAA Deputy Assistant Administrator, Terry Wadley (APL-1) and FAA NE Regional Administrator, Colleen D'Alessandro at Moore Army Airfield
- The FAA team was introduced to MassDOT's drone program and their work with the newly formed Massachusetts Autonomous Integration Center; Advanced Air Mobility (AAM) and Counter UAS (CUAS) Systems. FAA staff were given an on-site tour of the Mobile Systems Integration Lab (MSIL)
- The team departed mid-day for Stow-Minuteman Airport where they met with Alaka'i Technologies for a tour of their engineering and hangar facilities and an overview of the development of the hydrogen-powered autonomous Vertical Takeoff and Landing aircraft (VTOL) aircraft, "Skai"

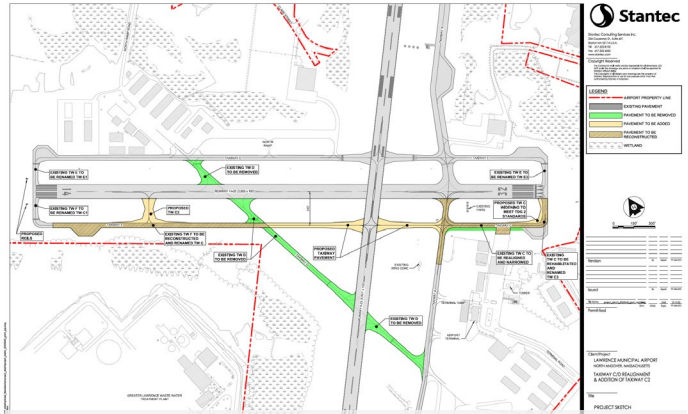
MassDOT (Left) briefs FAA on MSIL lab at Moore Army Airfield

MassDOT briefs Administrator Wildgoose on Drone Flights

Alaka'i's hydrogen-powered clean energy VTOL aircraft is manufactured in Stow, MA

State FY23 FAA Airport Improvement Program (AIP) Grants Update

- For State FY23, the FAA has issued Massachusetts Airports $49.9M in AIP grants for 20 airport improvement projects
- The state match for these grants is $7.0M
- The grants include the following projects:
  - Runway reconstruction at Cape Cod Gateway Airport ($18.7M) and Gardner Municipal Airport ($5.4M)
  - Taxiway reconstruction at Lawrence Municipal Airport ($9.9M), Norwood Memorial Airport ($7.6M),and Nantucket Memorial Airport ($6.8M)
  - Apron reconstruction at New Bedford Regional Airport ($5.6M) and two hangar renovation projects ($1.4M)
  - Obstruction removal at three airports ($1.1M) and five planning, environmental, or noise studies ($2.2M)

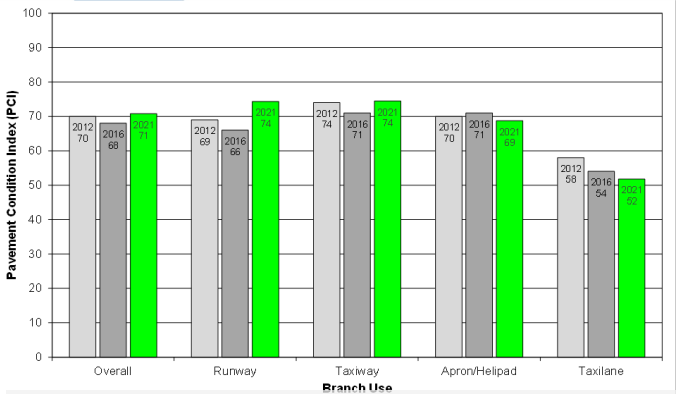


Lawrence Municipal Airport (LWM) Taxiway C Project

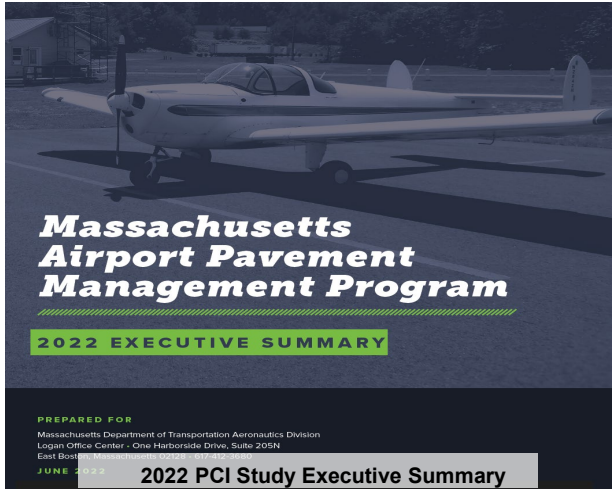
New Bedford Regional Airport (EWB) Apron Reconstruction

Massachusetts Airport Pavement Management Program (APMP) Study Findings

- The Pavement Condition Index (PCI) update was finalized during the summer of 2022
- During the 2021 PCI evaluation, 42.3 million square feet of total pavement was evaluated
- Due to COVID-19, the project was delayed approximately two years
- The overall system PCI increased 3 points over the 2016 evaluation
- As part of the project, a web application was developed to provide a visual display the PCI that shows a prediction of the pavement's deterioration in the future
- The web application and final reports will help Aeronautics and the individual airports make informed decisions regarding preventive pavement maintenance, future planning for capital improvements and project sequencing



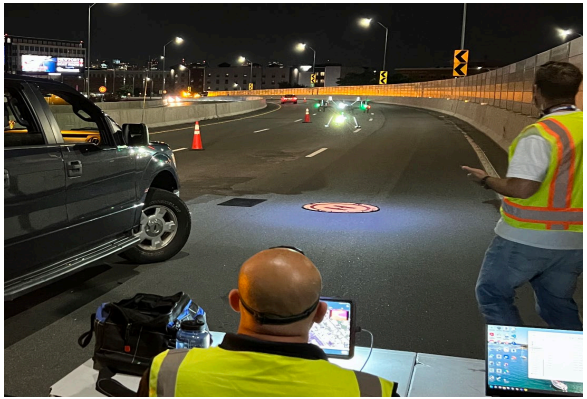
Overall and Branch PCIs for 2012, 2016, and 2021 Evaluations



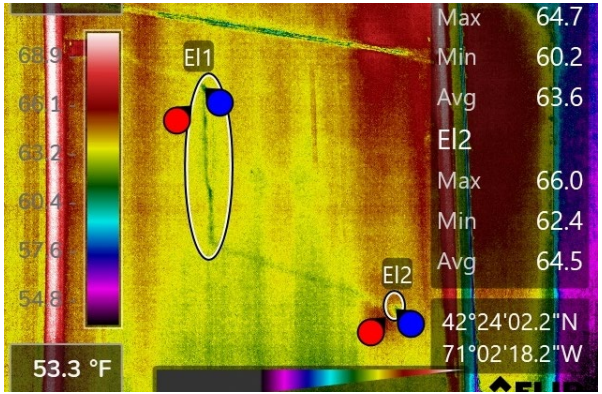
2022 PCI Study Executive Summary

Drone Data Collection Supports Pavement Analysis of Chelsea Viaduct

- Collected Infrared (IR) data overnight (on 9/26/22) to support pavement analysis of Chelsea Viaduct
- Data will be used by the MassDOT Highway Division to understand pavement condition and presence of water under pavement surface enabling decision making on condition and possible solutions
  - Analysis builds from a FHWA funding grant for culvert research work accomplished with UMass Lowell
- Aerial collected data will potentially save time, cost and deliver improved data quality to detect degraded pavement conditions
- Additionally, stakeholders will be provided with highly accurate significant data for enhanced decision making



MassDOT Aeronautics Drone Captures Data



Infrared Data for Analysis