

# AAPTTP

The logo consists of the letters 'AAPTTP' in a bold, gold-colored, sans-serif font. A white silhouette of a commercial airplane is positioned inside the second 'P', appearing to fly through the letter.

## Airport Asphalt Pavement Technology Program

# Objectives

1. To re-establish the Airport Asphalt Pavement Technology Program (AAPTP)
2. To identify airport pavement issues and problems that could be eligible for funding
3. To coordinate FAA and industry efforts to implement technologies and to solve problems identified through the program as important to FAA and industry
4. To pursue the technology transfer of new solutions, practices, and recommendations as needed



# Management

1. Program Coordination Group (Identifies Projects to Complete)
  - Airport Consultants Council
  - NAPA Producer Member
  - Aircraft Manufacturer
  - Federal Aviation Administration
  - Department of Defense
  - State Asphalt Pavement Association
  - Aggregate Industry Representative
  - Openings (ASCE APC Member, Airport Council International, American Association of Airport Executives)



# Management

1. Project Technical Panel (Anyone can serve)
  - Develop request for proposals/qualifications for projects
  - Select project team
  - Monitor project progress



# Asphalt Mixture Paving Handbook - Revision

- Objective:
  - Update 2000 Transportation Research Board Publication
  - Will also include building an interactive website for field access
- Principal Investigator: Mark Buncher (Asphalt Institute)
- Project Completion: July 1, 2024
- Funding: \$200,000 + \$100,000 for website
  - RFP for website development in process



# Guidance on Selection of Asphalt Binder Grade

- Objective:
  - Aid engineers on selecting and specifying proper asphalt binder grade for airfields
  - Develop a tool to aid in proper binder grade selection
- Principal Investigator: Raquel Moraes (Auburn University)
- Project Completion: March 31, 2024
- Funding: \$200,000
  
- Tool begins beta testing soon.



# Balanced Mix Design: Cracking Tests

- Objective:
  - Evaluate current cracking tests for use in mixture design to resist cracking in airfields
- Principal Investigator: Imad Al-Qadi (University of Illinois at UC)
- Project Completion: August 14, 2025
- Funding: \$1,000,000



# Balanced Mix Design: Rutting Tests

- Objective:
  - Harmonize rutting requirements in the current FAA specifications
- Principal Investigator: Elie Hajj (University of Nevada at Reno)
- Project Completion: June 30, 2024
- Funding: \$500,000





# Improving Performance of Longitudinal Joints in Airfield Asphalt Pavements

- Objective:
  - Synthesize best practices for maintaining longitudinal joints
  - Evaluate new technologies which could be used to improve joint performance
- Principal Investigator: Randy West (Auburn University)
- Project Completion: December 31, 2023
- Funding: \$200,000 ~~± \$100,000 (potential Phase 2)~~
  - Phase 2 was cancelled because of the lack of field data. PCG is discussing next steps for investigation



# Mitigation of Plastic Flow and Delamination at High-Speed Exits

- Objective:
  - Understand mechanism causing failures at high-speed exits
  - Develop solutions to prevent failures from occurring
- Principal Investigator: Hao Wang (Rutgers University)
- Project Completion: August 14, 2024
- Funding: \$500,000

# Feasibility of Cold Central Plant Recycling Asphalt Mixtures for Airports

- Objective:
  - Assess feasibility and potential benefits of using CCPR in airfields
- Principal Investigator: Dave Jones (University of California Pavement Research Center)
- Project Completion: December 31, 2023
- Funding: \$500,000+ \$100,000 (Potential Phase 2)
  - Phase 2 would be to develop standard for new technologies



# Validation of Gyration for Superpave Gyrotory Compactor for Mix Design of Airport Asphalt Mixtures

- Objective:
  - Synthesize research comparing Marshall and Superpave mix design methodologies
- Principal Investigator: Randy West (Auburn University)
- Project Completion: January 17, 2023 (Phase 1 completion)
- Funding: \$75,000 + \$225,000 (Phase 2 Approved)
  - Phase 2 is laboratory analysis



# P-401 Mixtures: Aggregate Gradation Bands

- Objective:
  - Assess impact of adjusting aggregate gradation bands on mixture performance
- Principal Investigator: Nam Tran, Auburn University
- Project Completion: March 31, 2025
- Funding: \$1,000,000



# Airfield Asphalt Pavement Resilience

- Objective:
  - Synthesis and state of the practice on resilience practices for airport asphalt pavements
  - Develop research needs
- Principal Investigator: Ben Bowers, Auburn University
- Project Completion: October 1, 2025
- Funding: \$1,250,000



# Use of RAP in P-401 Mixtures

- Objective:
  - Assess the impact of using RAP in airfield asphalt mixtures
  - Understand potential impact for carbon reduction
- Principal Investigator: Adam Hand – University of Nevada at Reno
- Project Completion: Phase 1 – April 2025
- Funding: \$400,000 – Phase 1 (Phase 2 with panel approval is \$850,000)



# Asphalt Airfield Video Series

- Objective:
  - Develop a series of videos to pair with paving handbook for technology transfer
- Principal Investigator: Qualifications due October 24
  - Setting up finalist video interviews
- Project Completion: TBD
- Funding: TBN





# Current State of the Budget

- First Cooperative Agreement
  - Total Budget: \$9,500,000
  - Total Funds Allocated to Projects: \$7,210,000
    - Note: \$1.75 million QC Database Project put on hold
    - NAPA now must pay construction costs for CCPR and RAP Project (Holding \$1.5 million)
- Second Cooperative Agreement
  - Total Budget: \$3,000,000
  - Video Project to be in this budget



# Panels Being Assembled

- Carbon Reduction Roadmap - \$200,000
- Harnessing Advanced Technologies - \$200,000
- PFAS in Airfield Pavements - \$500,000



# What Else Should Be Considered?

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<https://www.asphaltpavement.org/expertise/engineering/airports>

