



Federal Aviation  
Administration



# Construction Safety Phasing Plan

## New FAA SOP

Presented to: **MAMA Conference**

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# Why Emphasize Safety Planning?

## Construction Operations on Airfield:

- Disrupts the normal airport environment
- ❖ Introduces increased risk to operating aircraft
- Impacts aeronautical operations (i.e. Capacity, approach procedures, navigational aids etc.)

## Safety Planning:

- ❖ Balances construction and operational safety while maintaining acceptable level of aeronautical operations
- Identifies and quantifies risk as well as adverse effect
- Assists with establishment of mitigating actions and controls

**Failure to Plan is a  
Plan to Fail!**



# CONSEQUENCES

## Wingtip Conflict



**Failure to identify and mitigate risk introduced by construction activity can be costly and dangerous.**



# CONSEQUENCES

## WRONG RUNWAY TAKEOFF



Inadequate safety management controls  
can have deadly results  
Singapore Airlines, October 2000



# Addressing Impacts

2 primary processes addressing construction activity in the airfield environment

- 1. Construction Safety and Phasing Plans (CSPP)**
- 2. Part 77 Aeronautical Evaluation (7460-1)**

There is a 3rd process being implemented on an as necessary basis

- 3. Safety Risk Management (SRM) – New SOP**

These separate processes are complementary to each other



# Construction Safety & Phasing Plan

- A comprehensive safety management strategy that identifies and mitigates increased risk due to construction activity on an active airfield
- ❖ A CSPP establishes operational safety management strategies for *everyone* associated with the project:
  - Contractor/Subcontractor
  - Construction Inspector
  - ARFF Personnel
  - Airport Operations
  - FBO/ Airlines
  - FAA ATCT
  - FAA Technicians
  - FAA Flight Procedures



# CONSEQUENCES

## Wingtip Conflict



- Direct damage costs to aircraft and equipment can be extreme
- Indirect costs associated with airport operations and project delays may be indeterminate



# CSPP – **New SOP \*\***

## ➤ **Standard Operating Procedure**

- Effective October 1, 2013
- Available on the Sponsors Guide

[http://www.faa.gov/airports/northwest\\_mountain/airports\\_resources/sponsor\\_guide/](http://www.faa.gov/airports/northwest_mountain/airports_resources/sponsor_guide/)

## ➤ **Uniform Procedure Addressing**

- Receiving
- Evaluating
- Processing – could qualify CSPP earlier, if pressed for time
- Approving/Disapproving – After Air Space Case Study Cpl
- Archiving



# CSPP - Receiving

## ➤ **Must Conform to AC 150/5370-2**

- Submit once phasing and construction activities are known
- Include Appendix 3 Safety and Phasing Plan Checklist

## ➤ **FAA Project Manager Actions**

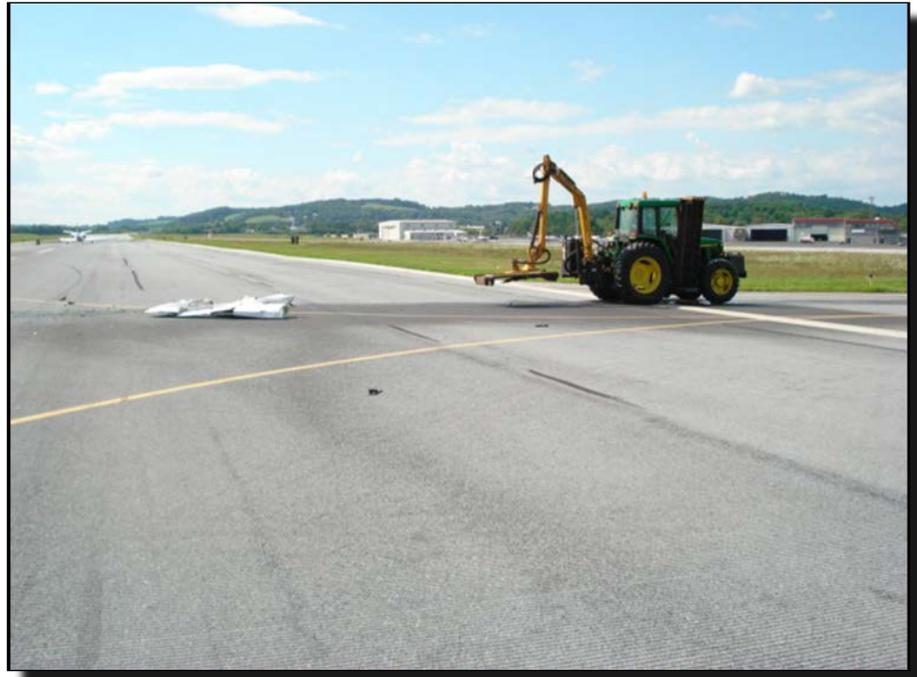
- Reviews for Conformance with AC
- Coordinates with other FAA Lines of Business (LOB)
- Submits to Airport Safety Inspector (ACSI) for project located within Aircraft Operation Area (AOA) of Part 139 Airports
- Initiate Safety Assessment Screening if Required
- Issues Approval, Conditional Approval, or Disapproval Letter



# CONSEQUENCES



## Loss of Situational Awareness



**Lack of attention puts people at risk for serious injuries!**



# CSPP – Approving/Disapproving

## ➤ **Approved/Conditionally Approved**

- Identifies action taken by the FAA
- Includes explicit language conveying conditions of FAA approval
  - May require the Sponsor's written annotated response indicating how conditions were resolved
- Identifies limitations of FAA actions
- Indicates the required Sponsor actions

## ➤ **Disapproved**

- Reasons for not approving will be provided and require correction by the Sponsor or Consultant.



# CSPP Elements

**CSPP is a self-contained document the Sponsor incorporates into their bid package**

**AC 150/5370-2 outlines required CSPP elements**

- Coordination
- Phasing
- Affected Areas
- Navaid Protection
- Contractor Access
- Wildlife Management
- FOD Management
- Hazardous Material
- Notifications
- Inspections
- Underground Utilities
- Penalties
- Special Conditions
- Visual Aids
- Marking/Signing Access
- Hazard Marking/Lighting
- Aeronautical Areas and Surfaces
- Limitations



# Coordination

## Introduce stakeholders to safety concepts early.

- ✓ Predesign Conference
- ✓ Preconstruction Conferences
- ✓ Prebid Conference

## Address safety and coordinate throughout development as necessary.

- ✓ Contractor Progress Meetings
- ✓ Air Traffic Operations Coordination
- ✓ Scope or Schedule Changes



# Phasing

## Balance between Construction and Airport Operations without compromising safety:

- ✓ Areas closed to aircraft
- ✓ Schedule/durations
- ✓ Critical work
- ✓ Constraints (i.e. work hours)
- ✓ Sequencing Information
- ✓ Work Areas
- ✓ Taxiway Routes
- ✓ Navaid Impacts

**Generally No One Solution  
for Every Situation!**

## Iterative Process

- Constraints may impact pavement design selection
- Reconstruct verse rehab
- Open verse closed



# Affected Areas and Operations

**Goal is to Identify all impacts to airfield operations due to construction activity**

**Compare existing state and temporary state conditions**

- Address both direct impacts (Taxiway closure) and indirect impacts (ARFF, Airport Maintenance, etc.)
- Establish mitigating measures (i.e. limit aircraft)
- Best Practice: Operational Impact Table
- ❖ Another set of Eye on the Situation



# Protection of Nav aids

## Identify existing navigational aid (NAVAID) equipment and temporary impacts due to construction activity

- ❖ Impacts to FAA owned equipment fall into 2 categories:
  1. Physical relocation of equipment (Reimbursable Agreement–1 Yr)
  2. Temporary Outage (Submit SEC form 45 days in advance)
- Protect of existing equipment and underground cables
- Pothole locations of possible conflict during design phase
- Flag limits of critical area if work activity is in close proximity to critical area boundary



# Work Site Access and Use

## Emphasize V/PD avoidance (Part 139)

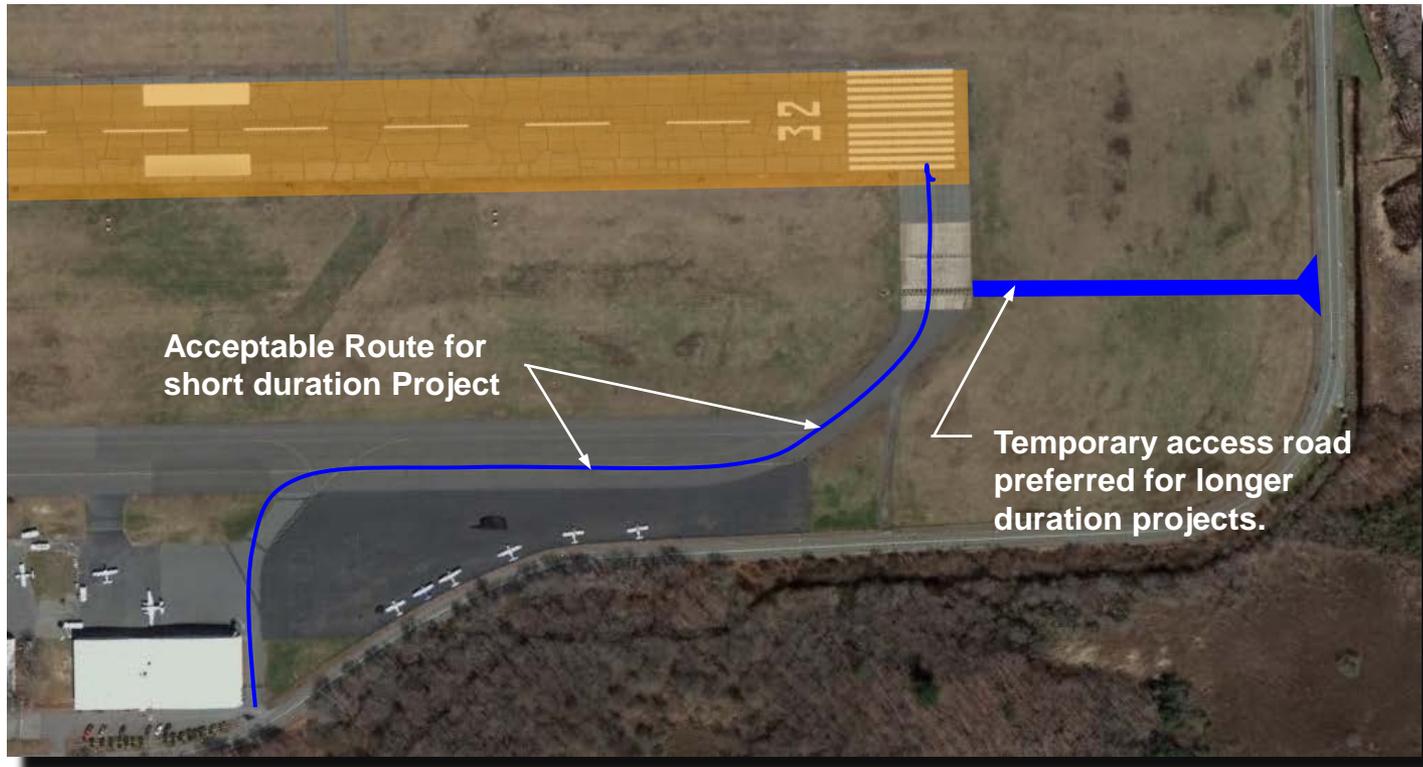
**V/PD** - Unauthorized access by a vehicle or pedestrian

**Incursion** – Incorrect presence of vehicle/person in landing area

**Surface Incident** – Unauthorized access onto active taxiway



# Access Routes



**Minimize interaction of construction equipment and aircraft**



# Work Area Limits

Demarcate allowable work area boundaries with Flags, Fencing, lathes,



Supplement with  
Warning Signs



## Airport Operator Actions to Reduce the Potential for Pedestrian and Ground Vehicle Deviations



On construction projects, install signs to prevent inadvertent entry onto active portions of the movement area by construction vehicles and pedestrians.



# Communication/Security



**Maintain operating radios  
when working on active airfield**

**CSPP should establish  
protocols for contacting ATCT**

**Only authorized personnel  
should have access to the  
airfield construction site**



# Employee Parking



**Set aside space for employee parking at a location outside of the AOA fence**



# Wildlife

## Construction activity should not create wildlife attractants

- Grass height
- Food/Debris
- Ponding water



## Maintain integrity of wildlife fence

- Require contractor to notify Airport Operations of wildlife sightings



# Debris Management

## Monitor and remove debris from airfield pavement due to a construction operations

- Sweepers/brooms
- Tarp trucks
- Water truck
- SPCD Element (How?)



- Wind blown material
- Tracked on mud and rock
- Slurry dust



# Hazardous Material

## Identify hazardous materials sources and establish protocols for spill recovery

- Fuel/Lube trucks operation
- ❖ Restrict areas for fueling and equipment maintenance
- Spill Notification
- Containment protocol
- MSDS Sheet readily available
- Discovery of USTs
- SPCD Element



# Notifications

## ➤ **NOTAM issuance**

- Advance Coordination and Procedures

## ➤ **Part 77 Notification (Cranes)**

- Equipment not studied during design phase notification

## ❖ **NAVAID Outages**

- 45-day **Strategic Event Coordination (SEC)** notice,
- 7-day notice
- 72-hour confirmation

## ➤ **Airport Operations Protocols**

- Phase transition

## ➤ **Emergencies**

## ➤ **ARFF Operations**



# Inspection

## Maintaining Safety requires VIGILANCE!

### Address inspection responsibilities for both the contractor and the airport

- Identify responsible individuals
- Frequency of Inspections
  - Daily and evening checks, storm events, Shutdown periods
- Appendix 4 Checklist
  - Barricade placement, Flasher operation, FOD, Idle equipment outside of OFA, NOTAMS, Drop-offs, Communications....
- ❖ Requirement for immediate corrective action (Safety first)
- Re-opening pavement to aircraft operations



# Inspection – Problem Identification

**Construction activity cannot occur within an active RSA**



**Idle equipment cannot reside within an active ROFA**



# Inspection – Problem Identification

## Inoperative Hazard Warning Device



## Dislodged surface closure marking



# Underground Utilities

## There may be multiple utility owners or parties responsible for utility locates

- Explain how existing utilities will be located
- Identify procedures required for their protection

## Be prepared for the unexpected

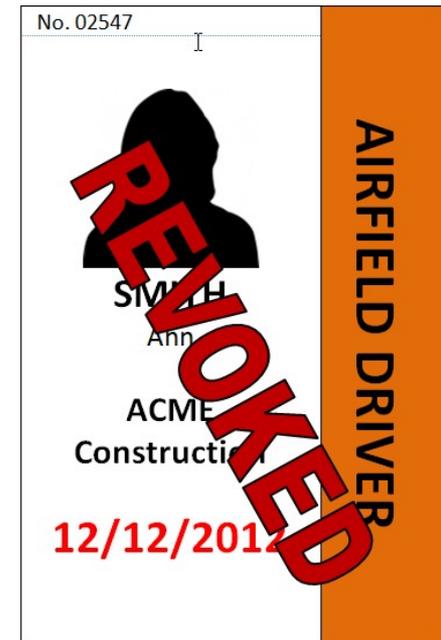
- ❖ Develop master list of owners and contacts for each utility
- Address emergency response procedures



# Penalties

## Impose penalties for non-compliance with safety requirements

- Not necessarily a monetary fine
- Immediate removal from work area
- Loss of driving privileges
- Revoke their SIDA badge
- ❖ Suspend all construction activities
- Detention by Airport Security/LEO



# Special Conditions

## CSPP should address provisions for special circumstances that may occur during Construction

- Low visibility (heavy fog)
- ❖ Rain/Snow Events
- Aircraft emergency
- Life safety emergencies



# Visual Aids – Runway/Taxiway

## Provide temporary marking, lighting and signage for affected airfield pavements

- Closed Runway
  - Partially Closed Runway
  - Displaced Threshold
  - Closed Taxiway
- De-energize lights and signs that do not serve a purpose during temporary state
  - Establish maintenance requirements



# Access Route - Marking & Signing

## Demarcate airfield access routes

- Channelizer
- Signage

## Limitations

- Safety Area & Object Free Area



# Access Road – Taxiway Crossing

## Establish Positive Control

- Flag-person
- Stop, Observe, Yield/Proceed



# Approach and Departure Surfaces

## Runway approach/departure surfaces

- Must be clear of all objects (equipment, material, etc.)
- Closure of Runway - Preferred approached



# Material & Equipment Storage



**Material may not be stored in active RSAs**

**Limited storage may occur in ROFA based upon necessity**

**Idle Equipment must be parked outside of OFA and lowered.**



# Discussion

