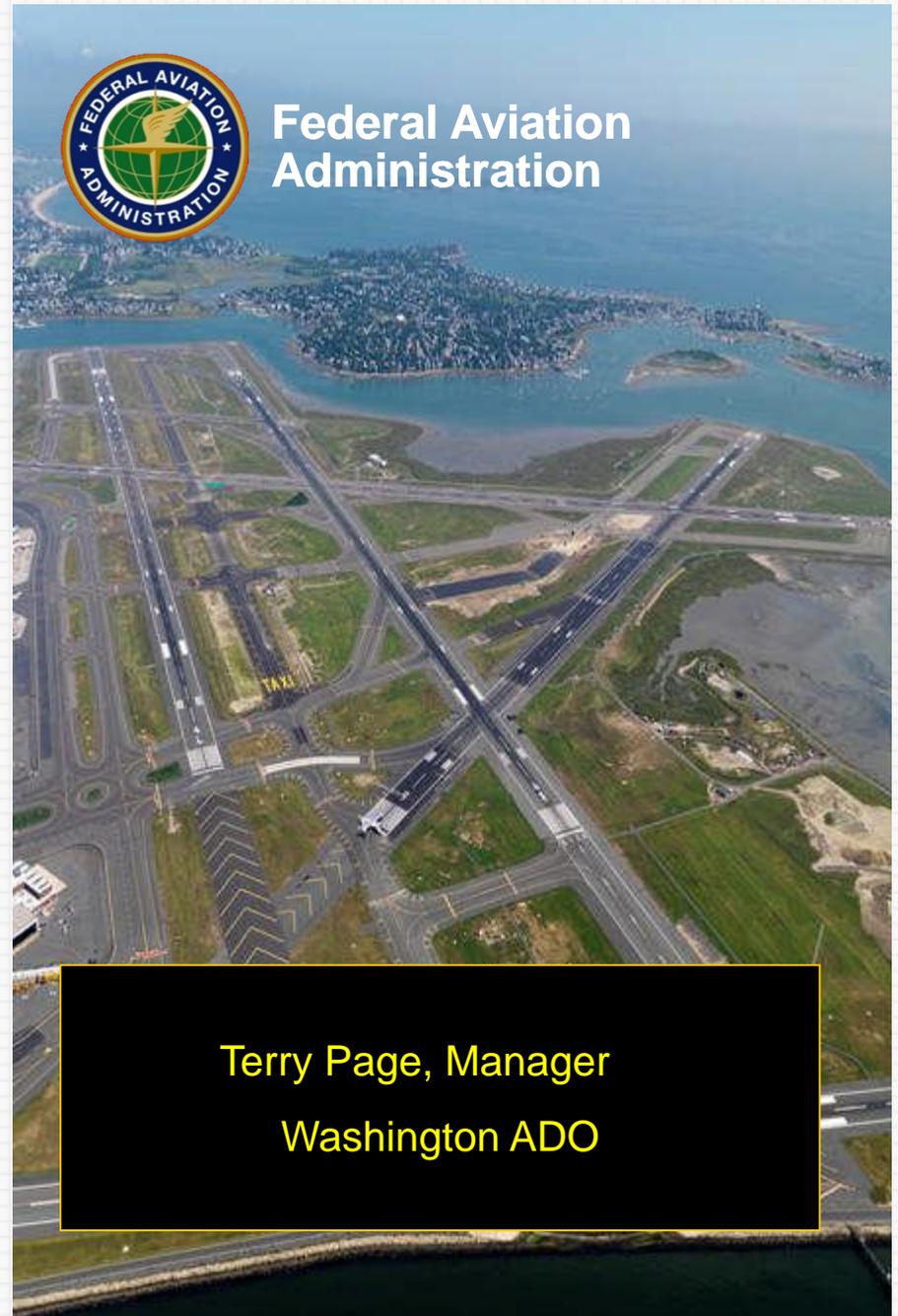


Airports Safety Management System (SMS)

What Airport Sponsors and Consultants Should Know

Hershey Conference
April 2012



Objectives

- **Quick SMS Overview and Refresher**
- **Airports SMS Implementation Status:**
 - **FAA Airports External SMS (Part 139 Airports Only)**
 - **FAA Airports Internal SMS**
- **ARP SMS Implementation Guidance Document**
- **FAA Responsibility under SMS**
- **Sponsor and Consultant Roles under FAA's SMS**





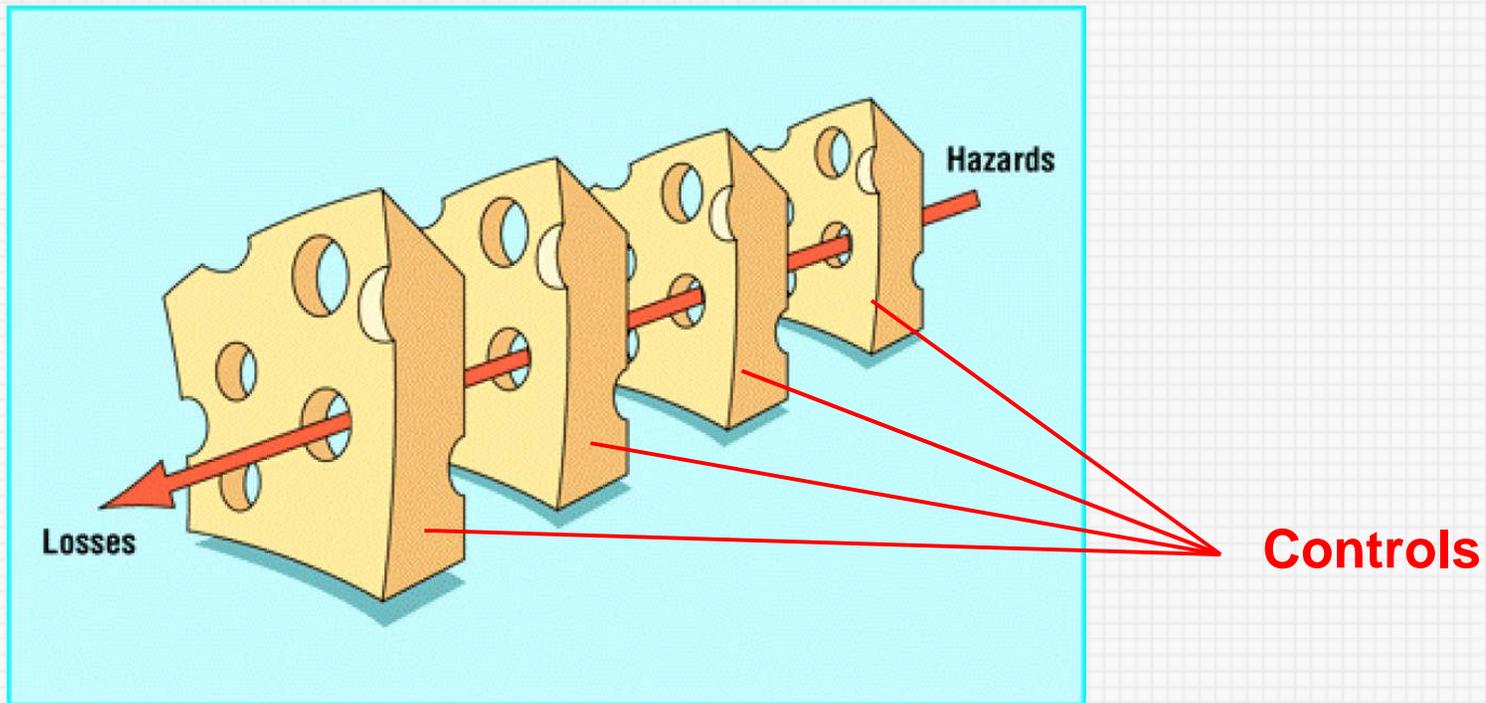
“Safety is like fighting a guerilla war in which you are never able to declare total victory.”

James Reason



**Federal Aviation
Administration**

Why do we need SMS?



James Reason's Swiss cheese model of defenses. Reprinted from the BMJ [71] (copyright 2000) with permission from the BMJ Publishing Group Ltd.



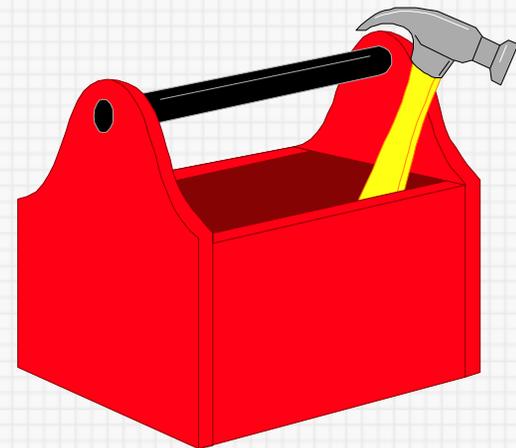
Isn't the US aviation system already the world's safest?

- **Existing safety controls:**
 - **Planning, engineering, construction, & safety/operations standards**
 - **CFR Part 139**
 - **Airspace review process**
 - **Construction safety phasing plans**
- **Yes, we have outstanding safety performance statistics, but...**
- **Further improvements in safety require proactive identification of risks and constant vigilance:**
 - **Changes in aircraft**
 - **Changes in navigational aids**
 - **Changes in air traffic control**
 - **Pressure to enhance capacity and efficiency**



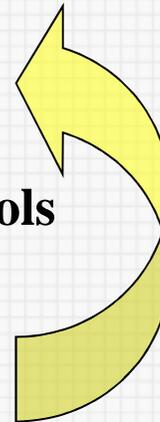
SMS Quick Overview: What is SMS?

- **A TOOLBOX** for project managers
 - Decision making tools
 - Data collection with methods for analysis
 - Means of continuous improvement
 - Means of documenting decisions
 - Requires ARP manager buy-in
- **A MANAGEMENT** system
- **Focus on OPERATIONAL** safety
- **Facilitates a PROACTIVE** approach to safety



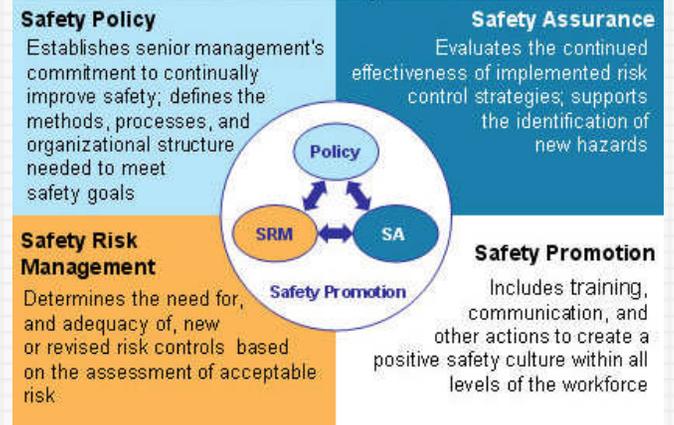
SMS Quick Overview

- **Safety Policy**
 - Commitment to continually improve safety
 - Defines methods, processes and organizational structure
- ✓ **Safety Risk Management**
 - Safety-related decisions
 - Assesses hazards, risks and controls
- **Safety Assurance**
 - Evaluates safety performance
- **Safety Promotion**
 - Promotes safety culture

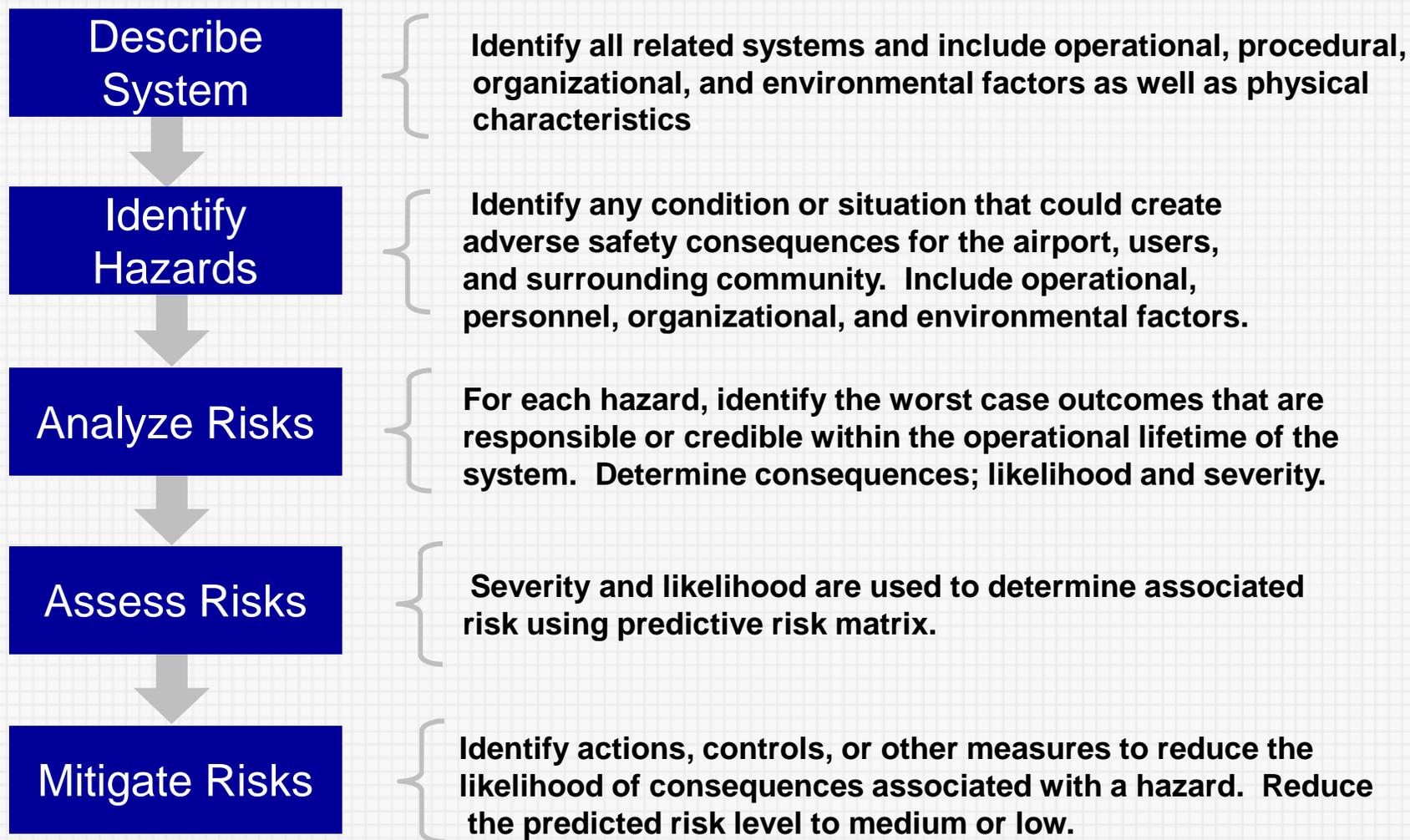


Feedback

The Four SMS Components



Safety Risk Management (SRM) 5-Steps



Risk Matrix (Initial/Residual)

Severity → Likelihood ↓	Minimal - 5	Minor - 4	Major - 3	Hazardous - 2	Catastrophic - 1
Frequent - A	Green	Yellow	Red	Red	Red
Probable - B	Green	Yellow	Red	Red	Red
Remote - C	Green	Green	Yellow	Red	Red
Extremely Remote - D	Green	Green	Green	Yellow	Red
Extremely Improbable - E	Green	Green	Green	Green	Yellow/Red



Two ARP SMS Initiatives

- **SMS for Airports we regulate under 14 CFR Part 139, Certification of Airports**
 - FAA oversight as regulator
 - Notice of Proposed Rulemaking
 - *External* SMS
- **SMS for FAA airport planning and development services, including airport standards and airport project review, coordination, and approval.**
 - Product/service provider in partnership with airport sponsors
 - Implement through internal FAA Order (5200.11) and Implementation Guidance (Version 1.0)
 - *Internal* SMS (and the subject of this presentation!)



ARP Internal SMS Guidance Document



ARP SMS Implementation: Guidance

- **FAA Order 5200.11, FAA Airports Safety Management System, signed August 30, 2010**
 - ✓ – ARP SMS requirements
- **FAA Office of Airports Safety Management System Implementation Guide**
 - How-to guide
 - Draft for industry outreach/review: April 2011
 - Finalize internal SMS guidance (version 1.0)
- **SMS requirements will be added to applicable Advisory Circulars as they are updated over time**



FAA ARP SRM – Implementation Phase-In

- **Key Point to Remember:**

FAA ARP requirement to conduct SRM DOES NOT always mean a panel is required!

- **FAA ARP staff complete a ‘checklist’ form to determine if a panel is required for each trigger**
- **If a panel is not required, FAA ARP staff file the checklist, and no further action needed**



SRM Requirements –Triggers for FAA SRM

- ARP airport standards, approvals and determinations that could impact airport safety: **The Big ‘3’**
 1. FAA **approval** of new or updated Airport Layout Plans (ALPs),
 2. FAA **approval**/or airspace **determinations** for construction safety plans,
 3. FAA **approval** of requests for project-specific Modifications of Standards.



SRM Requirements – ‘Triggers’ for FAA SRM

- **ARP airport standards, approvals and determinations that could impact airport safety:**
 4. **Airport planning, environmental, engineering, construction, operations, and maintenance standards in new or revised FAA Advisory Circulars.**
 5. **FAA approval of FAR part 150 Noise Compatibility Plans that could affect aviation safety (i.e., noise abatement procedures)**
 6. **FAA airspace determinations of airport sponsor requests for non-construction changes, including runway and taxiway designations, airfield pavement marking and signage, runway categories (design aircraft), and approach/departure procedure changes.**
 7. **Modification or material changes to a previous SRM**



FAA ARP SRM – Implementation Phase-In

Airport Type	SRM becomes applicable:
Large, Medium, and Small Hub Airports*	June 1, 2011
Remaining airports certificated under 14 CFR Part 139	* Per FAA Order 5200.11, Change 1, phase-in of other airports will depend on future resources
Remaining FAA and contract tower airports	*phase-in of other airports will depend on resources
Remaining NPIAS airports	*phase-in of other airports will depend on resources



FAA ARP SRM – Implementation Phase-In

- SRM requirements apply to projects, approvals and standards started after June 1, 2011.
- Encourage application of SRM in advance of the June deadline to:
 - Enhance airport and project safety
 - Address objections or concerns from other FAA LOBs
 - Get ‘practice’ on the future SRM process
 - However, SRM is not mandatory until projects are started after June 1, 2011



ARP SRM – Implementation Phase-In

- **SRM requirements apply to projects and new FAA standards started after June 1, 2011.**
- **Project starting after June 1 means:**
 - **Engineering contracts issued after June 1 should include coordinating the Const. Safety Phasing Plans through the SRM process in the scope of work**
 - **Planning contracts issued after June 1 should include coordinating the ALP through the SRM process in the scope of work**
 - **Modification of Standards identified and requested after June 1 must follow the SRM process before FAA approval**



FAA ARP SRM – Implementation Phase-In

- **Key Point to Remember:**

FAA ARP requirement to conduct SRM DOES NOT always mean a panel is required!

- **FAA ARP staff complete a ‘checklist’ form to determine if a panel is required for each trigger**
- **If a panel is not required FAA ARP staff file the checklist and no further action needed**

(Yes, this slide was duplicated on purpose!)



SRM Roles & Responsibilities: FAA

- **SRM is an *internal* FAA requirement**
 - It is not imposed by the FAA on the sponsor (however sponsors must play a role)
 - The airport sponsor must support FAA to get project approvals
 - FAA offices are obligated to participate with no cost to the airport sponsor (reimbursable agreement is not required for SRM participation)
- **SRM is mutually beneficial for the FAA and the airport**
 - SRM requires early planning, early coordination
 - SRM requires coordination with other FAA offices and airport users
 - Early planning reduces project workload, delays and costs



SRM Roles & Responsibilities: Airport Sponsors

- **Requires additional funding, resources and planning**
 - **Airport sponsors must provide project information**
 - **Airports (usually the consultant) prepares the ‘Project Proposal Summary’ which describes the project’s safety impacts**
 - **If a formal SRM panel is required, airports sponsors may have to provide a qualified SRM panel facilitator, and panel logistics (meeting room and note taker)**
 - **Airport sponsors must participate in SRM panels**
 - **Airport sponsors must sign the final Safety Assessment document (SAS)**
 - **Airport sponsors must implement any risk mitigation measures identified by the SRM panel**



SRM Roles & Responsibilities: Airport Consultants

- **Consultants should learn the SMS/SRM process in order to help guide sponsors through the process**
 - **Consultants should identify early when a project will trigger the FAA requirement for SRM**
 - **Consultants will usually prepare the ‘Project Proposal Summary’ as part of the engineering design or planning project scope**
 - **If a formal SRM panel is required, the sponsor may need help with finding a qualified SRM panel facilitator, and panel logistics (meeting room and note taker)**
 - **Consultants will usually participate in SRM panels**
 - **All panel participants must sign the final Safety Assessment document (SAS)**
 - **Consultants must incorporate any risk mitigation measures identified by the SRM panel in their planning or design**



SRM Roles & Responsibilities: Everyone

- **SRM is mutually beneficial for the FAA, airport sponsors, consultants and airport users:**
 - **SRM triggers early planning, early coordination**
 - **SRM requires coordination and participation of other FAA offices (free of charge) and airport users**
 - **Early planning reduces project workload, delays and costs**
 - **Identifying safety issues during planning (ALP) or design (const. safety and phasing plans) prevents project delays and change orders**
 - **SRM is similar to a ‘peer review’ of major projects to proactively anticipate problems, make changes to improve airport planning and construction**
 - **Most of all, SRM can enhance airport safety**



Quiz Time!

- The ADO is going to issue a grant to a large hub airport for a Master Plan/ALP update after June 1, 2011. Is a ARP SRM required before the AIP grant can be signed?



Quiz Time!

- The ADO is going to issue a grant to a large hub airport for a Master Plan/ALP update after June 1, 2011. Is a ARP SRM required before the grant can be signed?

Answer: **NO!** Who said anything above about grant signing? Were you listening or playing with your phone?

ARP must conduct SRM before the FAA approval action of approving an ALP, or approving CSPP, but not before approving a grant.



Quiz Time!

- **The ADO is reviewing a revised ALP at a large hub airport for approval. The ALP update work started by the consultant in October 2010, and was completed, ready for FAA airspace coordination and approval in December 2011. (Assume major changes are proposed to the airport layout.) What level of ARP SRM required before the ALP can be approved?**



Quiz Time!

- The ADO is reviewing a revised ALP at a large hub airport for approval. The ALP update work started by the consultant in October 2010, and was completed, ready for FAA airspace coordination and approval in December 2011. (Assume major changes are proposed to the airport layout.) What level of ARP SRM required before the ALP can be approved?
- Answer: **None**. The work started before June 1, 2011. FAA does not require sponsors to modify contracts already in place to include SRM. (May be a good idea to conduct SRM voluntarily, but it is not required.)



Quiz Time!

- **The airport sponsor at a large hub airport decided they need to revise their entire taxiway naming system for about half the airport. The planning and change was initiated after June 1, 2011. AEA-620 concurs with the signage plan. The sponsor will not use AIP grant funds, and does not require an ALP change. Is ARP SRM required?**



Quiz Time!

- **The airport sponsor at a large hub airport decided they need to revise their entire taxiway naming system for about half the airport. AEA-620 concurs with the signage plan. The sponsor will not use AIP grant funds, and does not require an ALP change. Is ARP SRM required?**
- **Answer: Yes! Trigger 6 above, not one of the ‘big 3.’ FAA airspace determinations of airport sponsor requests for non-construction changes, including runway and taxiway designations, airfield pavement marking and signage, runway categories (design aircraft), and approach/departure procedure changes.**



Quiz Time!

- The airport sponsor at a large hub airport decided they need to revise their entire taxiway naming system for about half the airport. AEA-620 concurs with the signage plan. The sponsor will not use AIP grant funds, and does not require an ALP change. Is ARP SRM required?
- Answer: **Yes!** Trigger 6 above, not one of the ‘big 3.’ FAA airspace determinations of airport sponsor requests for non-construction changes, including runway and taxiway designations, airfield pavement marking and signage, runway categories (design aircraft), and approach/departure procedure changes.
- **Follow up question:** Is a formal SRM panel required?



Quiz Time!

- The airport sponsor at a large hub airport decided they need to revise their entire taxiway naming system for about half the airport. AEA-620 concurs with the signage plan. The sponsor will not use AIP grant funds, and does not require an ALP change. Is ARP SRM required?

Answer: Yes! Trigger 6 above, not one of the ‘big 3.’ FAA airspace determinations of airport sponsor requests for non-construction changes, including runway and taxiway designations, airfield pavement marking and signage, runway categories (design aircraft), and approach/departure procedure changes.

- Follow up question: Is a formal SRM panel required?

Answer: Maybe. ARP staff must review the SRM checklist



Quiz Time!

- **Sponsor of a large hub airport is constructing new high-speed exits to a runway, exactly as depicted on the existing ALP. Engineering will start in 2012. There will be no AIP funds in the project. Is there an approval action that requires SRM?**



Quiz Time!

- Sponsor of a large hub airport is constructing new high-speed exits to a runway, exactly as depicted on the existing ALP. Engineering will start in 2012. There will be no AIP funds in the project. Is there an approval action that requires SRM?

Answer: Yes. Trigger 2 above, FAA **approval**/or **airspace determinations** for construction safety plans.

(Note, any mention of funding source (AIP, PFC, etc.) is a red-herring and has nothing to with SRM decisions.)



Quick Summary of Important Points for ARP SMS

- **External airport SMS (under rulemaking for part 139 airports) has not been finalized, and not required at this time.**
- **Internal FAA/ARP SMS has been finalized and is required now!**
- **FAA/ARP SMS is only required for large-hub airports, actions started after June 1, 2011, and certain triggers.**
- **Big 3 SRM triggers: ALP, CSPP, MOS**
- **Early coordination with the FAA ARP project manager is key to determining the level of SRM required! (ARP project manager must determine if a panel is required)**



QUESTIONS on FAA/ARP SMS?

