

# FRIEDMAN MEMORIAL AIRPORT AUTHORITY

Regular Meeting

February 9, 2012



**UNFINISHED BUSINESS**

# Replacement Airport

- City of Hailey Report

# Replacement Airport

- Blaine County Report

# Replacement Airport Airport Manager Report

- Washington D.C. Trip Report – Chairman Bowman, Vice Chairman Burke, Board Member McCleary and the Airport Manager traveled to Washington D.C. January 31- February 3 to update Idaho National Elected Delegation on activities since August 22, 2011, when the FAA suspended the Replacement Airport EIS process. Additional discussion items included:
  - FAA's Contract Tower Program
  - TSA-LEO reimbursement Program
  - Multiyear FAA Reauthorization
- Meeting schedule was included as Attachment #1
- Leave behind material was included as Attachment #2

# Replacement Airport Airport Manager Report

- City of Ketchum - FMAA Staff and Board members provided an information/update presentation to the Ketchum City Council February 6<sup>th</sup>. Sun Valley elected officials participated in the meeting as well. The power point presentation was provided to the Board via e-mail and it has been posted at [www.flyfma.com](http://www.flyfma.com) for public viewing.
- Questions and comments included subjects covering a broad range.
- While not all agreed, four themes seemed to dominate the discussion
  - Proceed to an Airport Layout Plan planning process ASAP
  - Negotiate a Letter of Agreement allowing RJ's to operate at FMA
  - Develop a Modernized GPS
  - Evaluate Long Term Airport Relocation

# Replacement Airport Airport Manager Report

- SMS Update – Safety Management System update
- The next step in the SMS process is for FMA Staff to develop a Change Proposal
- A Change Proposal appears to be similar to the Letter that Chairman Bowman sent to the FAA asking if other commercial aircraft could be included in the existing Letter of Agreement between the Airport and the air traffic control tower.
- Staff and Consultant team are developing the Change Proposal
  - The Board can anticipate an FAA Risk Management panel process sometime in March.
  - The FAA has indicated that the process completion goal should be less than 100 days.

# New Business

- Passenger Demand Analysis
  - Board authorized Staff to proceed with a Passenger Demand Analysis (PDA)
  - Draft PDA has now been completed
- Ms. Trina Froehilch, Mead & Hunt will discuss PDA in detail



# Replacement Airport Reliability Report

- Staff and Consultant team have been working on a report/memorandum for the Board since November, 2011
- Dave Mitchell of T-O Engineers will discuss the report and findings with the Board

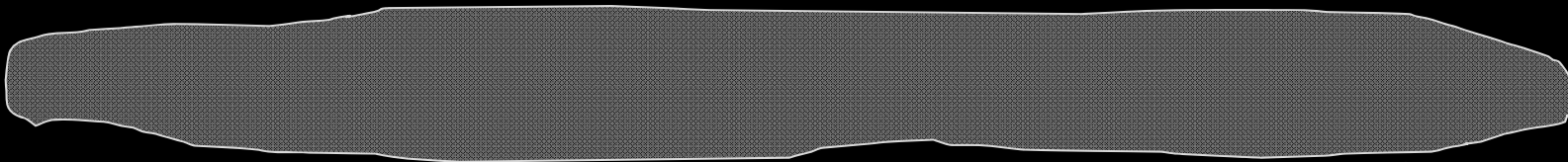
# RELIABILITY REPORT

- We have been analyzing possible improvements to the reliability of the airport.
- Four major efforts:
  - Discussions with FAA
  - Meetings with air carriers
  - Independent analysis of key factors affecting cancellations:
    - Weather
    - Runway length
    - Instrument approach procedures
  - GE analysis of performance-based navigation options

# MINIMUMS REVISITED

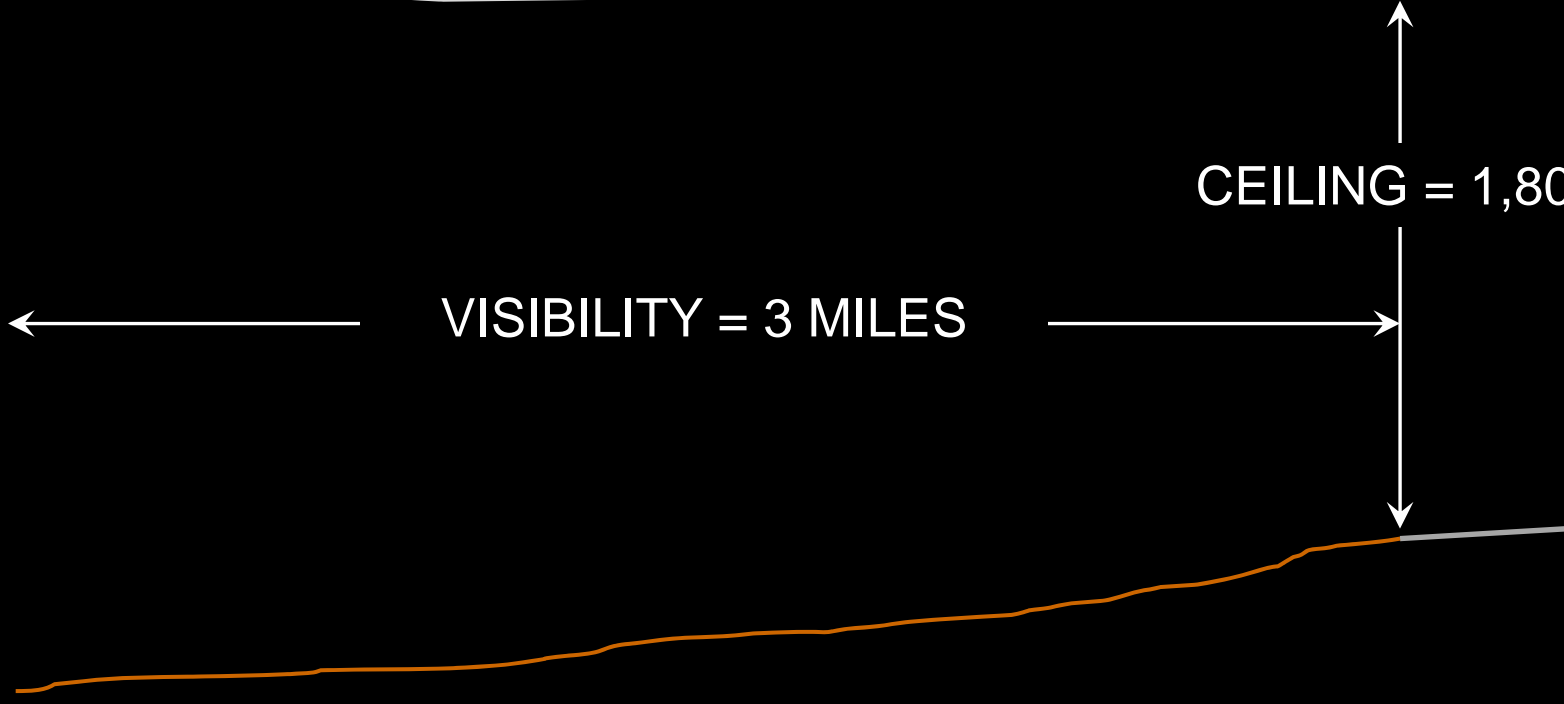
- Minimums = Minimum atmospheric conditions that must be in place before a pilot begins an instrument approach.
- Two components:
  - Ceiling = Height of obscuring clouds above ground (expressed in feet, e.g., 1,800')
  - Visibility = The distance objects can be clearly seen along the ground (expressed in miles, e.g., 3)
- These numbers are not necessarily an indication of the plane's elevation above the ground at any given point.

# MINIMUMS REVISITED



CEILING = 1,800'

VISIBILITY = 3 MILES



1,800'/3.0 MILES

DECISION  
ALTITUDE

MISSED  
APPROACH

1,800'

GLIDE PATH

300'/1.0 MILES

GLIDE PATH

MISSED APPROACH

DECISION ALTITUDE

300'

## DISCUSSIONS WITH FAA

- Airport Staff, Board members and consultants visited with the FAA October 17 and 18, 2011
- FAA attendees included management and technical staff
- Main discussion points:
  - It will be necessary to work together to develop a feasible solution that may not be “the ideal” solution but one to “live with” for now.
  - The goal: Incremental and continuous improvement toward full compliance with FAA design standards.
  - Before committing to significant funding at the existing site, the FAA would like to see if reliability can be improved to improve the long term viability of commercial service.

# DISCUSSIONS WITH FAA

- Main discussion points, continued:
  - Improving reliability is the first step, which requires lower minimums.
  - Technical areas with potential benefit identified:
    - Improved weather monitoring/reporting
    - RNP approach procedures
    - Dual localizer system for approach/missed approach
    - Approach lighting
  - No “silver bullet” was identified or suggested
  - FAA encouraged the airport to seek input from the air carriers
  - The near term potential of regional jets was discussed, which would trigger:
    - Re-evaluating Letter of Agreement
    - SMS review



## AIR CARRIER INPUT - SKYWEST

- Meeting was held November 22, 2011 in St. George, UT.
- In 2010, SkyWest's reliability at SUN was 75%, with 178 flights diverted.
- SkyWest aircraft performance:
  - Currently operate the EMB-120 Brasilia
  - Nearly all aircraft are single-RNAV equipped, with plans to transition to dual-RNAV.
  - They do not have any RNP capabilities, at this time. (Performance-based navigation procedures will not benefit SkyWest.)

## AIR CARRIER INPUT - SKYWEST

- SkyWest has evaluated operating the RJ 700 at SUN, and feels they can successfully operate that aircraft.
  - Minimal load reductions only during the hottest months
  - Aircraft climb gradient requirements restrict them to a minimum ceiling of 700' (Minimums lower than 700' will not help)
- Navigation Infrastructure:
  - Currently dependent on conventional ground-based navigational systems
  - RJ crews are not trained to fly NDB approaches. A VOR would be more helpful at SUN
  - Dual-approach localizers would be beneficial

# AIR CARRIER INPUT - SKYWEST

- Approaches (SkyWest's opinions):
  - Approach procedure from the north would produce the lowest minimums
  - For approaches from the south, a missed-approach turn to the east seems better
- Cancellation/busing decisions
  - Made several hours in advance, using the Terminal Area Forecast (TAF)
  - Use of Ramtaf (a fee-based weather forecasting service) to supplement the TAF could help

## SKYWEST SUMMARY

- Not equipped to fly RNP approaches. Any improvement there will not help them
- Improvements to ground-based navigational aids will have the biggest impact
  - VOR
  - Dual-localizers
- If the RJ 700 operates at SUN, reduction of ceiling below 700' will not improve their reliability
- Supplementing weather information with Ramtaf could help reduce cancellations

## AIR CARRIER INPUT - HORIZON

- Meeting with Horizon Air was conducted on December 22, 2011
- Operates at SUN using the Q400, equipped with WAAS and inertial navigation
- Horizon uses RNP extensively
- They do not use the RNAV (RNP) Y approach at SUN, however.
  - Long missed approach in confined terrain
  - They feel a climbing right turn in the missed approach is better than the existing left turn

# AIR CARRIER INPUT - HORIZON

- Potential for Improvements:
  - GE's analysis indicates minima from the south could get to 800'/2.5 miles, which would reduce Horizon's cancellations/diversions by 15 flights per year
  - Minimums of 300'/1.0 mile would increase their reliability to 99%.
    - Not possible to Runway 31, under current criteria
    - According to Horizon's analysis in 1999, these minimums could be achievable from the north
  - Any RNP-based solution should not require site-specific training – the associated costs are not warranted for a market like SUN
  - Ground-based NAVAIDs will not make any significant improvement – the problem is the missed approach

## AIR CARRIER INPUT - HORIZON

- Weather: They see the use of “prevailing visibility” as a problem
  - Weather in one direction may be better than another, but the decision to divert/cancel must be made based on the visibility through at least half of the horizon circle
  - A “quadrant-based” reporting system would be more beneficial, but this would require a change in national flight policy

# HORIZON SUMMARY

- Horizon Air is equipped to operate using performance-based navigation procedures
- They feel RNP is potentially a good solution at SUN.
- Horizon believes the best benefit would be achieved with an approach from the north
- They are interested in improvements to the RNAV (RNP) Y procedure, specifically in the missed approach
- Ground-based improvements are not as important to Horizon

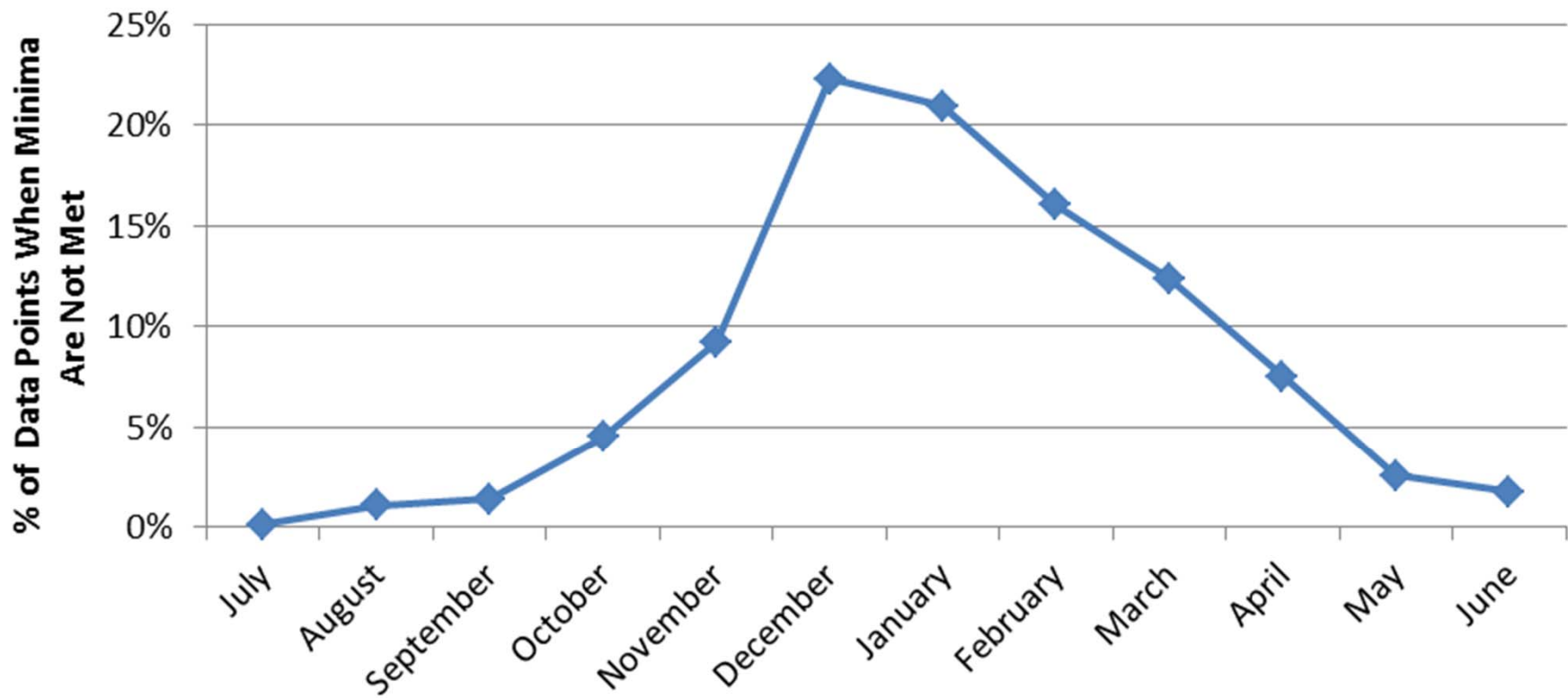


# INDEPENDENT ANALYSIS - WEATHER

- The question: If we can bring minimums down through better approaches, what percentage of improvement in reliability will that give?
- Data obtained from Jan. 1, 2004 to Sept. 1, 2011
  - AWOS
  - Tower

# WEATHER – MONTHLY TREND

## Monthly Trend for Minima of 1,800' and 3 Miles



# WEATHER – RESULTS

December - February			
Ceiling and Visibility	Minima Met	Minima Not Met	Improvement from Existing RNAV
1,800'/3 <sup>(1)</sup>	87.4%	12.6%	
1,000'/3 <sup>(2)</sup>	91.1%	9.0%	29.8%
1,000'/1	93.7%	6.3%	50.7%
800'/1 <sup>(3)</sup>	95.3%	4.7%	63.2%
500'/1	97.0%	3.0%	76.4%
300'/1	97.6%	2.4%	81.7%
200'/0.5 <sup>(4)</sup>	99.4%	0.6%	95.6%

(1) Existing RNAV (GPS) W

(2) Existing RNAV (RNP) Y

(3) TLS

(4) CAT I

# WEATHER ANALYSIS SUMMARY

- Reducing minimums to CAT I standards (200'/0.5 mile) would increase weather reliability to 99.4%
- Reducing minimums to 1,000'/3.0 improves reliability approximately 30% during the winter months
- Reducing the visibility minimum to 1 mile (1,000'/1.0) would result in a 51% improvement
- There is not a direct correlation between weather reliability and diversions
  - Minimums are not met 12.6% of the time
  - Diversion rates are reported to be as high as 30%

# INDEPENDENT ANALYSIS – RUNWAY LENGTH

- A runway length analysis was completed, mainly to consider what runway length would be necessary to accommodate regional jets (RJs)
- Primary factors:
  - Elevation
  - Temperature
  - Aircraft operating weight
  - Stage length

# RUNWAY LENGTH

- Looked at a series of aircraft in the RJ family, with several possible destinations.

Aircraft	Seat Capacity	Maximum Useful Load (pounds)	Estimated Useful Load Percentage for Departures to...			
			SLC (200 NM)	SEA (412 NM)	DEN/SFO (500 nm)	LAX/PHX (600 nm)
CRJ 200 ER	50	20,100	68%	73%	76%	78%
CRJ 700 ER	70	31,500	58%	67%	69%	73%
CRJ 900 LR	90	37,250	45%	57%	59%	63%
ERJ 135 ER/LR	37	18,737	73%	78%	81%	83%
ERJ 145 LR	50	21,795	69%	75%	78%	82%

Sources: Aviation Week & Space Technology Aerospace Sourcebook, Mead & Hunt, Inc.

Note: These useful load percentages are approximate; consult airline for specific operating procedures.

## REGIONAL JET COMPARISON

AIRCRAFT	WINGSPAN	LENGTH	WEIGHT
Global Express XRS	94' 0"	99' 5"	99,500
G-650	93' 8"	99' 9"	99,600
G-V	93' 4"	96' 5"	90,500
Q400	93' 2"	107' 8"	64,500
CRJ 900	81' 6"	119' 4"	80,500
CRJ 700	76' 3"	106' 8"	72,750
ERJ 145 LR	66' 9"	98' 0"	53,131

# RUNWAY LENGTH

Calculated runway lengths:

Aircraft	Seat Capacity	Temp.	Runway Length Requirement for Departures to...			
			SLC	SEA	DEN/SFO	LAX/PHX
			(200 nm)	(400 nm)	(500 nm)	(600 nm)
CRJ 200 ER	50	76° F	7,000'	7,400'	7,600'	7,800'
CRJ 700 ER	70	85° F	6,250'	7,200'	7,300'	8,000'
CRJ 900 LR	90	85° F	6,250'	7,600'	7,750'	8,200'
ERJ 135 ER/LR	37	67° F	6,800'	7,200'	7,500'	7,600'
ERJ 145 LR	50	67° F	5,800'	6,900'	7,400'	7,600'

Sources: Airport Planning Manuals published by aircraft manufacturers, Mead & Hunt, Inc.  
 Mean max. daily temperature in July: 86.1° F



## RUNWAY LENGTH - SUMMARY

- Existing runway length of 7,550' is a limitation for RJ departures to some destinations during the hottest days
- To accommodate all aircraft to all destinations, the “ideal” runway length would be 8,200'
- Shorter runway lengths do not mean that aircraft can't operate, only that they must reduce their loads when temperatures are high

# INDEPENDENT ANALYSIS – APPROACH PROCEDURES

- Intent: Determine the feasibility of lower approach minimums at the current site
- Existing approach conditions:
  - Primary constraint = Mountainous terrain in the missed approach area (north of the airport) requires positive course guidance on missed approach
  - Secondary constraint = High terrain in the approach area (south of airport) limits options from the south
- Increasing the climb gradient required on the missed approach could help significantly, but this depends on aircraft performance and airline policy

# INDEPENDENT ANALYSIS – APPROACH PROCEDURES

- Options:
  - Ground-based (localizer)
  - RNP or other performance-based navigation procedure
  - “Hybrid” (combination of the two above)
- Localizer
  - Dual localizers would likely be required (one each for approach and missed approach).
  - Installation complicated by the proximity of Highway 75 and the City of Hailey north of the airport.
- RNP was not evaluated in detail by our team
- Hybrid approach could work, but would require significant coordination with FAA

# GE PRELIMINARY ANALYSIS

- General Electric Aviation – Performance Based Navigation(PBN) attended the FMAA meeting on January 3 to discuss their preliminary analysis regarding approach options at SUN
- Their goal: Build on the existing approach infrastructure at SUN
- Two focuses:
  - Improve the missed approach on the existing RNAV (RNP) Y.
  - An approach to Runway 13 (from the north).
- Initial analysis shows some promise

# GE PRELIMINARY ANALYSIS

- The following PBN solutions were mentioned as possibilities:
  - Enhanced public RNP SAAAR/AR (Special Aircraft and Aircrew Authorization Required/Approval Required) Approach Procedure
  - WAAS LPV Approach with RNP AR (Approval Required) Missed Approach
- Extensive further analysis and coordination with FAA would be required to write an approach

# FINDINGS

- With the existing minima, weather prevents instrument landings a significant amount of time. Improvements in minima should have a corresponding effect on reliability
- Some level of improvement seems plausible, the best opportunity being procedures from the north
- Approaches from the south can likely be improved to a lesser degree
  - Best opportunity appears to be a missed-approach procedure turn to the east instead of west.

# FINDINGS

- Ground-based navigational aids will be difficult to install, due to limited land available for installation of equipment and the associated clear areas
- PBN approach procedure improvements are possible, but...
  - Analysis and approval process may be costly and time consuming.
  - Air carriers and other users have not indicated a desire to participate financially
  - May require special training and approvals, which may limit their use
- PBN improvements will only benefit one current air carrier.
- Further analysis is necessary in order to determine the exact level of improvement that is feasible

# FINDINGS

- Based on preliminary analysis only, it appears that the best minima possible for an approach from the south are approximately 1,000'/3
  - Beneficial and would reduce the number of cancellations and diversions.
  - Overall reliability would remain comparably low.
- The “ideal” runway length is 8,200’
  - Accommodates all RJs to all likely destinations.
  - Current length will work most of the time, particularly for RJ 700.
- Changes in weather reporting, if possible, would be beneficial





# Replacement Airport Roadmap Toward Future – High Priority Items

- Replacement airport south of Bellevue along Highway 75

# Replacement Airport Roadmap Toward Future – High Priority Items

- Incremental improvements at Friedman Airport (ALP?)

# Replacement Airport Roadmap Toward Future – High Priority Items

- Retain/Improve/Develop Air Service

# Replacement Airport Roadmap Toward Future – High Priority Items

- Other

# Replacement Airport Gallatin Public Affairs Government Relations Agreement

- The Board has been working to change and improve communication
- It has been anticipated that the agreement between the Authority and Gallatin would change once a local arrangement could be developed
- A local arrangement has been developed
- Staff included as Attachment 4, a newly negotiated agreement with Gallatin for consideration

**NEW BUSINESS**

# New Business

- '11 Idaho State Grant – SUN-2011
  - \$20,000.00 Grant to be applied to projects already completed
    - Snow Removal Equipment including a ¾ ton truck with articulating V plow
    - Backup power generator for the ATC facility
    - Relocation of operations and maintenance equipment paved parking area with electrical power
  - Staff requests that the Board ratify the Grant Agreement and Resolution and authorize the Chairman and Secretary to sign both documents

# Approve Friedman Memorial Airport Authority Meeting Minutes

- January 3, 2012 Regular Meeting Minutes
- October 25, 2012 Special Meeting
  - Approval



# Airport Staff Brief

- Questions



# Public Comment



Thank You