ATTACHMENT #2

U.S. Department
of Transportation

**Federal Aviation
Administration**

Alaskan Region Airports Division
222 W. 7th Avenue, Box 14
Anchorage, Alaska 99513-7587

February 3, 2005

The Honorable Bruce Botelho
Mayor, City and Borough of Juneau
155 South Seward Street
Juneau, Alaska 99801

Dear Mayor Botelho:

Juneau International Airport Environmental Impact Statement
Runway Safety Area Alternatives

I am writing in response to your request to the Federal Aviation Administration (FAA) to provide information addressing the concerns raised in the December 13, 2004 Juneau Chamber of Commerce (JCC) and the January 4, 2005 Alaska Committee letters to you and the other members of the City and Borough of Juneau Assembly.

Background:
The FAA is charged with aviation safety, and the implementation of sufficient runway safety area at our Nation's airports is one of FAA's top priorities. The purpose of Runway Safety Area (RSA) is to reduce the risk of damage to an aircraft that lands short or overshoots the runway ends, or veers off the sides of the runway. The FAA has developed national design standards and criteria for runway safety areas based on the size and types of aircraft that use an airport. The runway safety areas at Juneau International Airport (JNU) and many other airports do not meet the FAA's safety standard.

As you are aware, the FAA is preparing an Environmental Impact Statement (EIS) to assess impacts to the human environment associated with a number of safety and infrastructure projects at the Airport. A major effort of the EIS has been to determine if there are alternatives for runway safety area that could achieve the safety objectives while minimizing affects on habitat, wetlands, recreationists and so forth.

The EIS considers a wide range of options for runway safety area that include shifting runway thresholds, moving the runway, and the use of engineered materials arresting systems (EMAS) as an equivalent method of achieving the desired safety objective. The EIS will describe in detail five alternatives that FAA considers prudent and feasible to meet the needs for runway safety area at the Airport. These alternatives will have different operational characteristics, and each will present different environmental and economic benefits and possibly drawbacks.

Engineered Material Arresting Systems:
Both the JCC and the Alaska Committee letters identify a number of concerns regarding use of an engineered materials arresting system at JNU. The following information is provided to

address those concerns. Please understand that in providing this information, FAA is in no way stating its intention to select one RSA alternative over another. The information below outlines FAA's policy on the use of EMAS as well as data on its performance.

On March 15, 2004, the FAA published Order 5200.9 'Financial Feasibility and Equivalency of Runway Safety Area Improvements and Engineered Material Arresting Systems'. By publication of this Order, FAA issued a policy determination that EMAS can provide a level of safety that is generally equivalent to a standard RSA.

The following is a list the 12 airports nationwide where fifteen (15) EMAS beds nationwide have been installed as of January 1, 2005.

Airport Location	No. of EMAS Beds	Installation Date
JFK International Jamaica, NY	1	1996
Minneapolis St. Paul Minneapolis	1	1999
Little Rock Little Rock, AR	2	2000/2003
Rochester International Rochester, NY	1	2001
Burbank Burbank, CA	1	2002
Baton Rouge Metropolitan Baton Rouge, LA	1	2002
Greater Binghamton Binghamton, NY	1	2002
Greenville Downtown Greenville, SC	2	2003
Barnstable Municipal Hyannis, MA	1	2003
Roanoke Regional Roanoke, VA	1	2004
Poughkeepsie, NY	1	2004
Fort Lauderdale, FL	2	2004

Other than some initial problems associated with the affect of jet blast on the original coating used during the first EMAS installations, there has since been no discernable deterioration of the coating and no airport has been required to perform periodic re-coating. The jet blast problem was solved when ESCO, the manufacturer of EMAS, developed a new jet-blast resistant (JBR) coating in 2001. There are no other known durability issues for EMAS beds. ESCO has indicated that two of the oldest installations, Minneapolis (cold weather) and Little Rock, AR (freeze-thaw cycles) are representative of extreme weather conditions. Both of these weather conditions are similar to Juneau, Alaska. JFK, Rochester and Binghamton, NY are also examples of locations with freeze-thaw cycles and snow conditions where the EMAS beds are holding up extremely well. The FAA does not expect that the performance of EMAS at Juneau would be substantially different.

We acknowledge that EMAS installations are relatively expensive. FAA recognizes that installation costs are higher in Alaska and that the maximum feasible investment in RSA improvements, including EMAS, should reflect the higher cost of construction in Alaska. The initial life cycle cost estimates for installation of EMAS at JNU, which reflect the higher construction and maintenances costs in Alaska, indicate that it is within FAA's financial feasibility guidelines outlined in Order 5200.9.

Operation and maintenance costs are somewhat speculative at this point. We have little data to determine an accurate estimate of annual maintenance costs. However, the costs presented in The Alaska Committee's letter appear to be excessive and they are higher than maintenance costs outlined in Order 5200.9. ESCO now estimates that periodic re-coating of the EMAS bed will be needed every 3 to 5 years based on actual experience (not 2 to 3 years as suggested in The Alaska Committee's letter).

Snow removal can be problematic at airports like JNU. Even though FAA does not require snow to be removed from RSA, it may be necessary at times to clear snow to provide space for snow storage and other reasons such as prevention of ice build up from the EMAS bed following a significant snow event. It is worth noting however, that the Minneapolis Airport is required to remove snow from their EMAS bed about 3-5 times per year compared to about 70 annual snow removal operations on the runway.

There is no evidence that water infiltration causes EMAS blocks to deteriorate when the manufacturers recommended installation procedures are followed. Water in the blocks is a concern and testing and evaluation of moisture effects is on going. However, there is no evidence that moisture causes deterioration when EMAS blocks are properly installed. In fact, real world incidents indicate that EMAS continues to perform as designed even in the presence of water in the blocks.

It is not correct that EMAS causes damage to aircraft landing short of the runway and touching down in the EMAS bed. FAA Advisory Circular 150/5220-22, *Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns*, requires "EMAS to be designed so as not to cause control problems for aircraft undershoots touching down in the arresting system." Extensive simulation testing of ESCO's material has demonstrated this and there is no evidence from actual aircraft runway under shoots that indicate otherwise.

Aircraft overruns normally result in a temporary runway closure, whether an EMAS bed is involved or not. In fact, an overrun without an EMAS bed might result in a seriously damaged aircraft that could take considerably longer to remove compared to an aircraft that remains in tact because of EMAS. Runway 04R at JFK airport was returned to service in less than 12 hours after the May 30, 2003 overrun into the EMAS bed. An out-of -service EMAS bed by itself would not require a runway closure. The January 22, 2005 overrun at JFK took about 30 hours to clear the aircraft from the bed and return the runway to service. However, some logistical problems at the airport, including a snowstorm and confusion over who would actually remove the aircraft, contributed to at least some the delay. It is also relevant to point out that the EMAS blocks that were destroyed during the January 22, 2005 overrun were inspected and found to be dry. Those blocks had been in-place since 1996 and had not been re-coated since the JBR coating was installed in 2002.

The air carrier's insurance company normally pays for blocks damaged by an overrun or other inadvertent entry into the EMAS bed.

Acquisition of Mendenhall Wetlands State Game Refuge Property:
Regarding the timing of the land transfer JNU is pursuing from the Mendenhall Wetlands State Game Refuge referred to in the Alaska Committee and the JCC letters, the following is an excerpt from an August 10, 2004 addressed to Allan Heese, JNU Airport Manager to clarify the requirements of Federal Department of Transportation 4(f) as they relate to the timing of this acquisition.

"The FAA's Airport Environmental Handbook FAA Order 5050.4A, addresses this topic in paragraph 47e. (7) 4: "Where the use of a property changed by a state or local agency from a section 4(f) type use to a transportation use in anticipation of a request for FAA approval, section 4(f) shall be considered to apply, even though the change in use may have taken place prior to any FAA action on the matter. This is especially true where the change in use appears to have been undertaken in an effort to avoid the application of section 4(f)." Our handbook provisions mirror positions taken by various federal courts that government entities cannot avoid

the statutory requirements of DOT section 4(f) by interagency or inter-unit transfers of property for conversion to transportation use.

Therefore, a resolution that is currently under consideration by the CBJ assembly and other actions associated with acquisition of refuge property through transfer of the Refuge to Airport ownership and management to facilitate actions being evaluated in the Airport EIS would not change the applicability of DOT section 4(f) in FAA's analysis under the EIS or in the FAA's Record of Decision. The FAA's determination has considered both the Federal DOT section 4(f) statute and the provisions contained in the state statute establishing the Mendenhall Wetlands State Game Refuge."

I appreciate the opportunity to clarify FAA's perspective regarding EMAS as well as the timing of the resolution being contemplated by the City and Borough of Juneau Assembly.

I look forward to meeting with you and other members of the City and Borough of Juneau Assembly on February 10, 2005.

Sincerely,

for Byron K. Huffman
Airports Division Manager

Cc:
CBJ Assembly Members
Marc E. Wheeler
Johan Dybdahl
Jeff Bush
Merrill Sanford
David G. Stone
Randy Wanamaker
Stan Ridgeway
Daniel Peterson
Rod Swope, City Manager
Donna Pierce, Deputy City Manager
Laurie Sica, Municipal Clerk
Allan Heese, JNU Airport Manager
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