| Items 2<br>Files 11-1288 | Department:<br>San Francisco International Airport (Airport) |
|---|---|

## EXECUTIVE SUMMARY

### Legislative Objectives

- The proposed ordinance would (a) waive the competitive procurement requirements of San Francisco Administrative Code Chapter 6, (b) approve a modified indemnification provision, and (c) authorize the Airport Commission to enter into a sole source agreement with the Engineering Arresting Systems Corporation (ESCO) to design an engineered material arresting system for two of the Airport's four runways.

### Key Points

- The Federal Aviation Administration (FAA) requires airports to have a runway safety area extending 1,000 feet beyond the end of each runway, where possible. The San Francisco International Airport (Airport), which was built prior to this FAA requirement, is unable to develop 1,000 feet of runway safety areas beyond the end of two of the Airport's four runways due to space constraints.
- In order to develop an alternative to the 1,000 feet of runway safety area required at the end of each runway, the FAA worked with a private firm, Engineering Arresting Systems Corporation (ESCO), to design engineered material arresting systems, using crushable concrete placed in beds at the end of each runway. These beds of crushable concrete would break down on impact and cause an aircraft to slow down at a higher rate of deceleration than with brakes alone.
- In 2005, the FAA prepared a runway safety area Improvement Plan, which mandated that all commercial airports that do not have a runway safety area of 1,000 feet beyond the end of each airport runway install an engineered material arresting system by December 31, 2015. The FAA has only approved ESCO's engineered material arresting system, which is a proprietary design, for use in airports.
- Because the FAA has only authorized ESCO to design the engineered material arresting system required by the FAA, the Airport is requesting that the competitive procurement requirements under the City's Administrative Code be waived and that ESCO be awarded a sole source agreement to design the FAA-approved engineered material arresting system.
- ESCO uses information provided by the Airport in designing the engineered material arresting system, such as the type of aircraft, number of landings, and other related information. Because ESCO is not able to independently verify some of this information, ESCO has not agreed to sign the standard indemnification provision contained in City agreements. According to Ms. Kathryn Luhe, Deputy City Attorney, the proposed modified indemnification provision limits ESCO's liability for any problems which may result from the design of the engineered material arresting system if problems were the result of the Airport having provided inaccurate information to ESCO. According to Ms. Luhe, this modified indemnification provision is reasonable based on the unique situation and is necessary to enter into the agreement with ESCO.

### Fiscal Impacts

- The proposed ordinance and the related agreement between the Airport and ESCO for ESCO to design the engineered material arresting system is for a not-to-exceed amount of $420,000. According to Mr. Jim Chiu, Manager of Civil Engineering at the Airport, the contract will be paid in three fixed amounts (see Table 1 on page 4) based on invoices submitted by ESCO as the work is completed. According to Mr. Chiu the cost of $420,000 for the proposed agreement was negotiated based on similar systems designed for other airports in California. Airport funds, previously approved by the Board of Supervisors, will be used to pay $420,000 for the design of the engineered material arresting system. However, the Airport will attempt to recuperate the cost of the ESCO agreement through future federal grant monies that are anticipated to be allocated to airports in order to meet the new FAA standards by building the engineered material arresting system.

### Recommendation

- Approve the ordinance.

## MANDATE STATEMENT / BACKGROUND

### Mandate Statement

San Francisco Administrative Code Chapter 6 states that professional services agreements should be competitively procured and that an indemnification provision be included to limit the liability to the City. The proposed ordinance would waive the competitive procurement requirements and approve a modified indemnification provision for the proposed agreement between the San Francisco International Airport (Airport) and Engineering Arresting Systems Corporation (ESCO), a private firm. Therefore Board of Supervisors approval is required to waive both the competitive procurement requirement and approve the proposed modified indemnification provision.

### Background

According to the Code of Federal Regulations (14 CFR 139) and the Federal Aviation Administration (FAA) Airport Design Advisory Circular 150-5300-13, the FAA has required airports to have a runway safety area extending 1,000 feet beyond the end of each runway and 500 feet wide where possible since 1989. The San Francisco International Airport (Airport), which was built before this FAA requirement, cannot develop 1,000 feet of runway safety area beyond the end of two of the Airport's four runways, Runway 1L-19R and Runway 1R-19L, due to space constraints including the San Francisco Bay in the northeast and the 101 Freeway in the southwest. Currently, the runway safety areas range from 156 Feet (Runway 19R) to approximately 1,700 feet in length (Runway 10R).

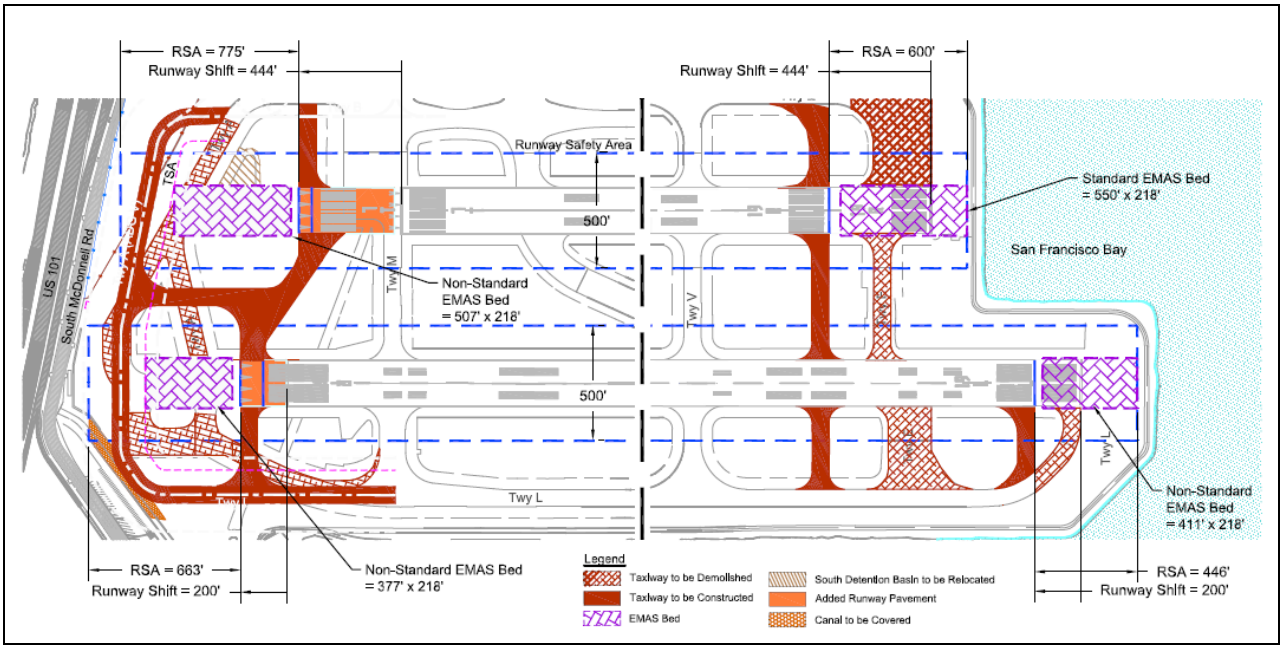
In 2005, the FAA prepared a runway safety area Improvement Plan, which mandated that all commercial airports that do not have a runway safety area extending 1,000 feet beyond the end of each runway must install an engineered material arresting system by December 31, 2015. This was codified in Public Law 119-105.

The FAA worked with ESCO to develop and design engineered material arresting systems, using crushable concrete placed in beds at the end of a runway, for use in airports with less than 1,000 feet of clearance beyond the runway. ESCO's engineered material arresting system, which is a propriety design, is the only such system which has been approved by the FAA for use in airports.

Of the Airport's four runways, the Airport is able to modify its two longer runways, Runway 10L-28R and Runway 10R-28L, to achieve 1,000 feet of runway safety area in compliance with FAA regulations. However, the two shorter runways, Runway 1L-19R and Runway 1R-19L, do not have sufficient space at the end of those runways, due to the San Francisco Bay in the northeast direction and the 101 Freeway in the southwest direction. Therefore, to meet the FAA's requirements, the Airport is entering into an agreement with ESCO to design four engineered material arresting system beds, one for each end of Runway 1L-19R and Runway 1R-19L.

The diagram, shown below, depicts Runways 1L-19R and 1R-19L and the proposed location of the engineered material arresting system beds.

**Diagram of Runways 1L-19R and 1R-19L and the Proposed EMAS (Engineered Material Arresting System) Beds**




## DETAILS OF PROPOSED LEGISLATION

The proposed ordinance would (a) waive the competitive procurement requirements of San Francisco Administrative Code Chapter 6, (b) approve a modified indemnification provision, and (c) authorize the Airport Commission to award a sole source agreement to ESCO for the design of a runway engineered material arresting system at the not-to-exceed cost of $420,000 for two of the Airport runways, 1L-19R and 1R-19L, in order to comply with FAA regulations.

The FAA worked with ESCO to develop and design engineered material arresting systems, using crushable concrete placed in beds at the end of a runway, for use in airports with less than 1,000 feet of clearance beyond the runway. These beds of crushable concrete would break down on impact and cause an aircraft to slow down at a higher rate of deceleration than with brakes alone. ESCO's engineered material arresting system, which is a propriety design, is the only such system that has been approved by the FAA for use in airports.

*Sole Source*

Because the FAA has determined that ESCO is the only firm that develops such engineered material testing systems that conform to FAA regulations, the Airport is requesting that the competitive procurement requirements be waived and that the agreement with ESCO for the design of the engineered material arresting system be awarded on a sole source basis.

*Indemnification Provision in the Agreement*

ESCO uses information provided by the Airport in designing the engineered material arresting system, such as the type of aircraft, number of landings, and other related information. Because ESCO is not able to independently verify some of this information, ESCO has not agreed to sign the standard indemnification provision contained in City agreements. According to Ms. Kathryn Luhe, Deputy City Attorney, the proposed modified indemnification provision limits ESCO's liability for any problems which may result from the design of the engineered material arresting system if problems were the result of the Airport having provided inaccurate information to ESCO. According to Ms. Luhe, this modified indemnification provision is reasonable based on the unique situation and is necessary to enter into the agreement with ESCO.

Additionally, according to Ms. Luhe, the proposed agreement contains a copyright infringement provision due to the proprietary nature of ESCO's engineered material arresting system.

## FISCAL IMPACTS

The proposed ordinance and the related agreement between the Airport and ESCO for ESCO to design the engineered material arresting system is for a not-to-exceed amount of $420,000. According to Mr. Jim Chiu, Manager of Civil Engineering at the Airport, the contract will be paid in three fixed amounts (see Table 1 on page 4) based on invoices submitted by ESCO as the work is completed. According to Mr. Chiu the cost of $420,000 for the proposed agreement was negotiated based on similar systems designed for other airports in California. Airport funds, previously approved by the Board of Supervisors, will be used to pay $420,000 for the design of the engineered material arresting system. However, the Airport will attempt to recuperate the cost of the ESCO agreement through future federal grant monies that are anticipated to be allocated to airports in order to meet the new FAA standards by building the engineered material arresting system.

The following table details the costs for the three fixed amounts to be paid to ESCO for the design of the engineered material arresting system for the Airport.

**Table: Costs of the Engineered Material Arresting System Design**

| Stages of the Design | | Cost |
|---|---|---|
| Initial and Preliminary Arrestor Bed Design | | |
| 1. | Performance Modeling Lump Sum Fee (4 Beds at $75,000 each) | $300,000 |
| 2. | Preliminary Design Support Lump Sum Fee (4 Beds at $17,500 each) | 70,000 |
| 3. | Final EMAS Arrestor Bed Design Work | 50,000 |
| | **TOTAL CONTRACTOR FEE** | **$420,000** |

Airport funds will be used to pay for the design of the engineered material arresting system. However, the Airport will attempt to recuperate the cost of the agreement with ESCO through future federal grant monies that are anticipated to be allocated to airports in order to meet the FAA engineered material arresting system standards.

## RECOMMENDATION

Approve the proposed ordinance.