AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
320 Terminal Drive, Suite 200 • Fort Lauderdale, Florida 33315 • 954-359-6100

MEMORANDUM

DATE: July 19, 2023

TO: Monica Cepero, County Administrator

FROM: Mark Gale, CEO/Director of Aviation

SUBJECT: Request for Emergency Procurement: EMAS Repairs and Replacement

---

The Engineered Materials Arresting System (EMAS) is a system which is designed to safely slow and stop an aircraft that has overrun a runway by utilizing crushable concrete blocks placed at the end of the runway. At Broward County's Fort Lauderdale-Hollywood International Airport (FLL), Runway 10L-28R (North Runway) has two EMAS beds (installed in 2019) and Runway 10R-28L (South Runway) also has two EMAS beds (installed in 2014). The EMAS beds are required by the Federal Aviation Administration (FAA) as part of our operating certificate, as FLL does not have the standard runway safety areas (RSA) dimensions as mandated by federal aviation regulations.

On April 9, 2023 a small aircraft overran the east end of the South Runway and damaged approximately 200 blocks of the EMAS bed. The FAA was notified and advised the Broward County Aviation Department (BCAD) that it had a 45-day window to complete the repair of that EMAS bed. BCAD received estimates from Runwaysafe (the EMAS block manufacturer) and Boland (the specialty installer).

On April 12, 2023, a "once in 1000-year" rain event dropped 25.91 inches of rain at FLL, which resulted in severe flooding across the area including FLL. The north side of the airfield, including the runway and roadways, was completely under water. FLL closed on April 12, 2023 and re-opened on April 14, 2023. The most extensive damage was to the North Runway EMAS beds. The east end EMAS was deemed damaged beyond repair and would need to be replaced. The west end EMAS was also damaged but was deemed repairable. Because of the close timing and devastating impact of these two separate events, the FAA waived the 45-day requirement to allow BCAD to perform the repairs in an appropriate manner.

This emergency procurement request will allow BCAD to purchase the blocks and services from Runwaysafe for the necessary EMAS repairs and/or replacement, and do so as quickly as possible/feasible. As previously mentioned, Runwaysafe is the sole manufacturer and provider of EMAS blocks. Additionally, this request will allow BCAD to procure the services of Boland, the specialty installer and Jacobs, the Engineer of Record for the EMAS. Lastly, it will also allow BCAD to enter into a Reimbursable Agreement with the FAA to address the impacts to the approach light system within the east end bed and the Instrument Landing Systems (ILS) localizer arrays located behind the bed.

BCAD is also evaluating the potential to raise the EMAS bed as a mitigation measure against future flooding.

Below is a breakdown of the costs for the repairs of each EMAS bed:

1. South Runway 10R-28L – Aircraft Incident (April 9, 2023)

10R Departure End EMAS Bed (East End) Repair (200 blocks to be removed and replaced)		
ITEM	COST	COMMENT
Purchase of 112 blocks, accessories and Services form Runway Safe	$313,123	Runwaysafe - Blocks to be shipped within one week of issuance of Purchase Order. BCAD will furnish the balance of the blocks – around 88.
Removal and Installation	$238,856	Boland will remove the damaged blocks and replace them.
Contingency	$40,000	
TOTAL	**$591,979**	
Duration of Repair: 12 nights with 8-hour shift		

2. North Runway 10L-28R – Flood Damage (April 12-13, 2023)

28R Departure End EMAS Bed (West End) Repair (74 blocks to be installed and Bed to be resealed)		
ITEM	COST	COMMENT
Purchase of 2 Blocks, accessories and Services form Runway Safe	$170,091	Runwaysafe – blocks and services for inspection and certification of installation. BCAD will furnish 72 blocks.
Installation and Resealing of Bed	$205,898	Boland will install the blocks and reseal the bed.
Contingency	$40,000	
TOTAL	**$415,989**	
Duration of Repair: 14 nights with 8-hour shift		

3. North Runway 10L-28R – Flood Damage (April 12-13, 2023)

10L Departure End EMAS Bed (East End) Replacement - (4,444 blocks to be demolished and replaced; EMAS bed base to be milled and raised with new asphalt from 2" to possibly 4" and potential coordination with FAA for localizer arrays and approach lights foundations)		
ITEM	COST ($)	COMMENTS
Purchase of blocks (4,444), accessories and services from Runwaysafe	$8,304,027	Fabrication of all the blocks will take about 30 weeks after the issuance of a PO or a commitment to Runwaysafe. The delivery schedule is not included. This puts the replacement of the EMAS Bed into the 1Q/2Q 2024.
Demolition and Installation of Blocks	$1,200,000	Cost is from Boland – Demolition and Installation may take 8 weeks.
Engineering Cost	$350,000	Design for EMAS – Survey, Plans and Specifications – Jacobs.
EMAS Base Replacement Cost	$1,800,000	Cost of demolition of 2" asphalt base and replacement with a thicker base of 4".
FAA Coordination for Localizer array foundation and approach lights foundation	$850,000	Raising the EMAS bed may impact the localizer array and the approach lights foundations – A Reimbursable Agreement will be needed.
Contingency	$625,000	For survey, regrading, additional impacts to roadway behind EMAS and others.
TOTAL	**$13,129,027**	
Items underlined are estimated and being negotiated		

The estimated total cost for the emergency procurement to implement the repairs and replacement of the EMAS beds is $14,136,996. The proposed funding source for these repairs and the replacement will be from BCAD Operating funds with the anticipation of FEMA/State Reimbursement for the flood event. Please advise if this request meets with your approval and if so, advise the Purchasing Director accordingly. Of course, I am available to answer any questions or concerns you may have.

C: Robert Gleason, Director of Purchasing
Christine Shorey, Senior Purchasing Manager
Michael Nonnemacher, Aviation Chief Operating Officer
Celina Saucedo, Aviation Chief Administrative Officer
Michael Pacitto, Aviation Chief Development Officer
Gasser Douge, Engineering Unit Supervisor, Aviation

MEG/CS/ml

G:\EXECUTIVE\Aviation Director\County Administration\Emergency Procurement EMAS Beds 7.23.docx