

 <p style="text-align: center;">Council Communication Office of the City Manager</p>	Date: June 25, 2012
	Agenda Item No. 32 Roll Call No. <u>12-991</u> Communication No. <u>12-355</u> Submitted by: John F. TeKippe, Fire Chief

AGENDA HEADING:

Approving application for U.S. Department of Homeland Security 2012 Assistance to Firefighters Grant Application.

SYNOPSIS:

Recommend the City Council authorize the Fire Department to submit a United States Department of Homeland Security 2012 Assistance to Firefighters Grant (AFG), approve pursuit of purchase of automated chest compression system, and approve City of Des Moines matching fund requirements consistent with the grant application. The Fire Department is requesting funding for the purchase of nine (9) LUCAS 2 automated chest compression systems.

FISCAL IMPACT:

Amount: \$125,545 (20% required match of the total estimated project cost of \$25,109).

Funding Source: 2013 Capital Improvement Project Budget FIR013 CP041 FIR990000, FY2013, page Fire Protection Improvements 5.

If awarded, expenses for this project are anticipated to be incurred in fiscal year 2013. The grant states awards will be made on or before September 10, 2012. The Fire Department will amend the CIP appropriately to reflect the funding of this project.

ADDITIONAL INFORMATION:

Roughly 400,000 people suffer out of hospital cardiac arrest in America every year. Survival from cardiac arrest is noted on national levels to be less than 8%. Survival from cardiac arrest without neurologic insult is around 1 %. The Des Moines Fire Department plays a vital role in a person's ability to survive from cardiac arrest. In order to maximize survival from cardiac arrest the chain of survival includes: bystander CPR, early notification of 911, prompt response of advanced level EMS, early quality chest compressions and early defibrillation.

In order for a patient to survive from cardiac arrest they must have quality CPR to restore circulation and oxygen delivery to vital organs. Without restoration of circulation via CPR in the field, the patient suffers irreversible brain damage from lack of meaningful perfusion. Chest compressions are the only way in the pre-hospital setting to provide cerebral and cardiac perfusion while the heart is not functioning. Chest compressions can be provided to a patient via human manual CPR or via a new automated compression device called the Lucas Device.

Human manual CPR has been shown in several studies to have several significant shortfalls that diminish the ability to survive from cardiac arrest that include inadequate compression rate, inadequate compression depth and tendency to limit the compression fraction - the amount of time during the cardiac arrest that the patient is getting chest compressions.

The LUCAS Device, on the other hand, delivers compressions consistently at the rate recommended by the American Heart Association (AHA). The depth of the compression meets AHA goals and it has been shown to enhance the compression fraction by delivering continuous compressions. The LUCAS device does not get fatigued and quality compressions can be maintained throughout the pre-hospital cardiac arrest. Simply put the LUCAS device delivers better chest compressions than manual human compressions and delivers them continuously without interruption while the patient is in cardiac arrest.

As stated, chest compressions play a significant role in a patient's survival. Also playing a role is making sure that the circulation is primed for antegrade flow. The Des Moines Fire Department currently deploys a respiratory device called the ResQPOD on all cardiac arrest victims. This device enhances circulation in cardiac arrest and has shown enhanced survival when the device is deployed early in cardiac arrest. The LUCAS device and the ResQPOD work together in a complimentary fashion to enhance coronary and cerebral blood flow. Together they can significantly enhance a person's chance of surviving cardiac arrest with intact neurologic function. Multiple trials throughout the country have shown that the rates of survival from cardiac arrest double when the 2 devices are used together.

PREVIOUS COUNCIL ACTION(S):

Date: February 13, 2012

Roll Call Number: [12-0210](#)

Action: US Department of Homeland Security and FEMA 2011 Assistance to Firefighter Grant (AFG) program award for the purchase of a new breathing air compressor and fill station, \$38,549. ([Council Communication No. 12-050](#)). **Moved by Hensley to approve. Motion Carried 7-0.**

BOARD/COMMISSION ACTION(S): NONE

ANTICIPATED ACTIONS AND FUTURE COMMITMENTS: NONE

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