

**CORRECTIVE ACTION PLAN
TO REDUCE COSTS
BY USING AN ALTERNATE
RESPONSE VEHICLE FOR CERTAIN EMS
INCIDENT TYPES**

A PLAN OF

THE LINCOLN FIRE & RESCUE DEPARTMENT

May 7, 2012

Problem Statement:

Lincoln Fire & Rescue currently dispatches the closest available Engine or Truck Company to a variety of incidents that do not require either type of vehicle. Many of these incidents require only the trained staff assigned to the unit and basic medical equipment.

Lincoln Fire & Rescue experiences a significant cost in the replacement, maintenance, and operation of aerial (Truck Company) apparatus. A more efficient deployment of LF&R resources will provide a reduction in operating expense while maintaining a high level of service.

Background Information:

Lincoln Fire & Rescue currently dispatches the closest available Engine or Truck Company to a variety of basic life support (BLS) or other incidents that do not require either type of vehicle. The practice has been to send personnel on the vehicle that they are normally assigned, so as to keep the entire crew and vehicle intact as a unit for subsequent potential dispatches. This current practice ignores the operating cost for these large inefficient vehicles which has increased dramatically over the past decade. With the ever increasing cost for vehicle purchase, maintenance and fuel consumption, the opportunity to match the call type with the vehicle should be considered.

During the reaccreditation internal and external stakeholders meetings, community conversations suggested that LF&R consider smaller more efficient vehicles whenever possible when planning for new vehicle purchase.

LF&R utilized GIS technology and LF&R EMS incident response records, to determine a suitable fire station for the placement for an alternate response vehicle (ARV).

Initial analysis of appropriate placement of the ARV was based upon unit hour utilization (UHU). The industry experts established benchmark of 5.15% is a goal for UHU as a UHU greater than 5.15% tends to decrease units reliability.

Truck 1 currently has a UHU of 5.71%. In theory, an ARV may decrease the UHU of that unit due to a decrease in; travel time, maintenance down time, fueling, and returning to quarters.

Another analysis that was utilized to determine the optimum location was the sheer number of calls or opportunities to utilize an ARV. It was determined that not only did Truck 1 run significantly more medical incidents than the other truck companies, but, the greatest number of BLS incidents as well.

Unit	BLS	ALS	ASSIST	TOTAL
T1	219	73	59	351
T5	70	55	95	220
T7	86	100	111	297
T8	81	50	50	181

T-1 responded to 1543 total calls in 2011 and 378 of them were for BLS, ALS or Assists. This amounts to 24% of their calls. T-1 traveled an estimated total of 1223 miles on these calls. (Source LF&R 2011 annual report)

Unit	1 mile	2 miles	3 miles	4 miles	>5 miles	Total
Truck 1	253	69	19	17	20	378
Round trip miles	506	276	114	136	200	1223

The cost per mile for LF&R ladder companies is estimated to be \$7.84 per mile. The cost to operate an ARV is estimated to be \$1.72 per mile, or a cost savings of \$6.12 per mile. This cost includes, fuel, repair & maintenance and vehicle depreciation/replacement.

LF&R Fleet operating costs	Ladder	ARV	Savings
Engine/Ladder/Medic/ARV		Cost	per
			mile
Cost per vehicle mile	\$7.84	\$1.72	\$6.12

For T-1 to respond to these calls and traveled 1223 miles it would have cost \$9,588. For an ARV the cost would have been \$2,104. If an ARV had responded to these same incidents the savings would have been \$7,484 in 2011. Over the

course of a 15 year useful vehicle life the cost savings would have been \$112,260 without adjustment for inflation.

This plan is not intended to increase the work load of T-1 but to reduce the costs associated with of operation and wear on an extremely expensive and difficult to replace apparatus. These are calls they are normally dispatched to, these are not additional calls.

Literature Review:

Departments across the country are experiencing similar fiscal challenges. Numerous agencies have developed alternative response profiles in an attempt to more efficiently maintain levels of service.

Rockford, IL is one such municipality that implemented an alternative response vehicle. They realized that through the equipping of two SUV type vehicles at a cost of \$49,000 each, saved the department \$25,000 annually in fuel costs in addition to wear and tear on an \$850,000 aerial apparatus (Green, 2011). Additionally, the Memphis Fire Department implemented a pilot program to evaluate the use of Ford Explorers that respond in lieu of larger Engine Company apparatus in areas of the City that have high incidences of EMS calls. After completing a feasibility study, they are proceeding with research that is intended to define a cost-savings related to maintenance and fuel versus replacement cost of full-sized apparatus. (McLoone, 2011) It is apparent that matching the appropriate-sized apparatus to lower acuity calls is a viable alternative that should be assessed.

Research Questions:

1. Will the implementation of an ARV impact the quality of service provided to the public?
 - a. Response Time (Travel)
 - b. Turn-Out Time
2. Will the implementation of an ARV provide any operational savings?
 - a. Fuel
 - b. Maintenance
 - c. Normal Wear
3. What types of incidents should the ARV be utilized for?

4. Depending on what incidents the ARV is utilized for, how should the ARV be equipped?

Methodology:

In this trial phase, LF&R will send the ARV to the following call types only:

- Medical Calls (Excluding Motor Vehicle Accidents)
- Lift Assists
- Service Calls at the Discretion of the Company Officer

These call types typically do not require the use of additional equipment found on the truck company. If it is anticipated that the call may require equipment exceeding the capabilities of the ARV, the company officer should elect to use the truck apparatus.

There will be no changes in the method in which truck 1 is dispatched. It is the company officers discretion to choose the appropriate apparatus for the call type. In the event that the officer elects to respond in the ARV, the officer will advise the crew and dispatch that truck 1 will be responding in the ARV.

Dispatch will then transfer the call to the Mobile Data Terminal (MDT) in the ARV. The ARV will be designated in CAD as ARV-1. The company officer will utilize that MDT until the ARV is in service and in quarters. Dispatch will status truck 1 as "out of service" until the ARV is in service and in quarters.

The ARV will respond to all calls with the standard response code as defined by medical protocol.

The ARV will be equipped with the same medical equipment currently found on truck company apparatus. This will allow the ARV crew to afford full BLS patient care as defined in medical protocol.

In addition, the ARV will be equipped with forcible entry tools, safety equipment, and mobile and hand held radios, and other essential items. The equipment is defined in Appendix A.

Crew members will leave their structural firefighting PPE on the truck apparatus when responding with the ARV. All personal protective equipment for the call types in which the ARV will be sent will be supplied on the ARV.

If the crew is returning to quarters and is dispatched to another call, the company officer on T1 must evaluate if the ARV is equipped to handle the incident. If the

call is for a motor vehicle accident, fire, technical rescue, or other emergency in which the truck and its equipment will or may be needed, the company officer should defer the call to another unit or expedite return to quarters and to exchange vehicles.

If the company officer deviates from the test criteria the company officer will then notify the OIC via email with an explanation for the deviation. There may be some instances in which a deviation to the ARV may be in the best interest of our citizens. Success of the ARV will be judged based upon the following criteria:

Evaluation Criteria:

- Fuel Cost (Comparison last 5 years)
- Maintenance Cost (Comparison last 5 years)
- Turn-Out Time (Comparison last 5 years)
- Travel Time (Comparison last 5 years)
- Assembly of IAF, ERF (Comparison last 5 years)
- Number of Responses by Type (Comparison last 5 years)
- Concurrent Calls for Service Impacting Response
- Matching Call Type to Appropriate Vehicle Utilization
- User Feedback

Implementation:

The implementation date for this trial test will begin May 7, 2012. The test will run for a period of no less than three months before evaluation.

The company officers on truck 1 will prepare personnel for the test through a formal training session prior to the start date.

Battalion Chief Linke will be responsible to monitor the test throughout the evaluation period. Data will be reviewed on a monthly basis to ensure that no significant decrease in service level is observed.

Company officers are encouraged to provide immediate feedback to BC Linke related to the use and deployment of the ARV by email preferably on the day of occurrence.

At the end of the three month period the command staff may elect to extend the test or move the ARV to an alternate location for further evaluation.

Annex

Listed below is a list of what equipment would be necessary to operate a BLS ARV. This deployment option can be achieved with no capital outlay. To increase the functionality of the ARV to ALS utilizing the same vehicle is possible through the addition of an upgraded manual defibrillator and ALS bag.

BLS/ARV Vehicle

Gloves, masks, eyewear
Airway bag
C-collar bag
Long spine board
Pedi Spine board
Sager Splint
KED
Suction unit
Emergency Blanket
Burn Sheet
Splint kit
Spare O2 bottle
OB kit
LP-1000 AED
4 Flashlights
4 Radio's
Halligan bar
Flat Head Axe
8 lb sledge
Johnson Bar

To increase the functionality of the vehicle beyond BLS to include motor vehicle extrication or fire scene capability it would require the purchase of specific vehicle for that purpose. As this test is evaluated, if found successful, consideration should be given to expanding the role of the ARV concept.

ALS/ARV Vehicle

Gloves, masks, eyewear
 Airway bag
 C-collar bag
 Long spine board
 Pedi Spine board
 Sager Splint
 KED
 Suction unit
 Emergency Blanket
 Burn Sheet
 Splint kit
 Spare O2 bottle
 OB kit
 LP-15 Defib/Monitor
 Drug Bag
 Hot Sack
 4 Flashlights

 4 Radio's
 Halligan bar
 Flat Head Axe
 8 lb sledge
 Johnson Bar
 Fire Extinguisher
 Miscellaneous tools

Technical Rescue ALS/ARV Vehicle

Gloves, masks, eyewear
 Airway bag
 C-collar bag
 Long spine board
 Pedi Spine board
 Sager Splint
 KED
 Suction unit
 Emergency Blanket
 Burn Sheet
 Splint kit
 Spare O2 bottle
 OB kit
 LP-15 Defib/Monitor
 Drug Bag
 Hot Sack
 4 Flashlights
 4 Spare sets of bunker gear
 4 SCBA's
 4 Radio's
 Halligan bar
 Flat Head Axe
 8 lb sledge
 Johnson Bar
 Fire Extinguisher
 Miscellaneous tools
 Rope bag
 Chain Saw
 K-12 saw
 Hydraulic extrication tools
 Air bags
 TIC
 Swift water gear

Leasing EMT SUVs a new step for Rockford

By Corina Curry

RRSTAR.COM

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ROCKFORD — By January, you might call 911 for low-level emergency medical assistance and see a Chevy Suburban roll up the street.

In a move that could radically change the way a small number of firefighters respond to emergency medical service calls in Rockford, aldermen voted 10-2 last week to lease four of the SUVs.

Two would be used for general operations. The other two would be deemed alternative response vehicles to get paramedics and emergency medical technicians to emergencies, rather than using a fire truck.

The idea is so foreign to Rockford's fire operation that the city's leadership and fire union are trying to figure out how the SUVs will fit into a labor contract written for fire suppression and ambulance companies.

It's an idea born of necessity, Chief Derek Bergsten explained.

The city's fleet of five ambulances, nine fire engines, four aerial units and 10 back-line/reserve vehicles, is barely able to maintain services, Bergsten said. That means the front-line fleet is breaking down so often that the reserves typically spend all of their time in daily rotation.

"We have to find a way to make do with the resources we have and do the best with what we have. We still need to respond to calls," he said. "We don't have an alternative way to deploy resources, and that is something we need to have now. It's gotten that far."

A new lease

it's not just the SUVs that are a radical departure from the norm.

The City Council approved a five-year lease Monday with PNC Bank to obtain the vehicles.

Leasing vehicles instead of owning them is another much-talked-about measure the city is exploring as it struggles to balance its budget each year.

The annual payment for the five SUVs will be \$42,008.87. For now, the money will come from the Fire Department's operating budget. Bergsten asked that lease payments be worked into future budgets.

Using the SUVs when they can will help save wear and tear on an aging and difficult-to-maintain fleet. The department doesn't have enough ambulances for all of the medical calls it receives, so it tends to send firefighters, who are trained as paramedics, on fire trucks to medical emergencies. If all of the ambulances are busy on other calls, a fire truck can get immediate help to a person in need faster, Bergsten said, and an ambulance can transport the patient when it arrives.

The use of SUVs will let the department continue that practice but keep the fire trucks in their bays until they're needed.

Despite being a step in a direction that many leaders have been advocating for years, Aldermen Ann Thompson-Kelly, D-7, and Venita Hervey, D-5, voted against the lease deal.

"It's piecemeal. ... The entire picture is not there," Hervey said. "I felt like I was being painted into a corner. ... I'm saying 'Let's do this as a package.' Maybe they need five rather than four.

"I'm not criticizing people. I just wanted to see more of a complete analysis before we asked for something like this. We really don't know what the full use of these vehicles will be."

Still fine-tuning

Bergsten was able to share some of those plans Friday.

Station 1, 528 Woodlawn Ave., and Station 2, 1004 Seventh St., would get one SUV apiece because they have two of the busiest call volumes.

"Even if we find some money to purchase or lease to purchase, it takes 10 to 12 months for these companies to build your truck," Bergsten said. "Our need is now. ... We need to start decreasing our fuel expenses and improving our response times. ... Yes, it's never been done here before, but we are exploring new and different ideas."

City leaders are excited to see what becomes of the alternative response vehicle.

"It is somewhat of a breakthrough," City Administrator Jim Ryan said. "It's a creative way to meet service needs at a lower cost. ... It's encouraging conversations."

Fire union leaders aren't sure how it will work.

The city will have to maintain a daily staffing level of 64 firefighters as prescribed by the firefighter union contract. The department typically sends four firefighters on each fire truck run, but the SUVs will carry two or three.

“They’re still fine-tuning this,” said Lt. Brad Walker, president of the International Association of Fire Fighters Local 413. “If it helps with coverage, that’s great. If it helps with response times, that’s great.

“Would I rather it be an engine? Yes. An engine can be deployed for multiple purposes. These vehicles will be limited in the level of assistance they can provide.”

Reach staff writer Corina Curry at ccurry@rrstar.com or 815-987-1371. Read more at her [blog](#) and [webpage](#) or follow her on [Twitter](#).

http://www.rrstar.com/news/x1408091127/In-Mondays-paper-Leasing-EMT-SUVs-a-new-step-for-Rockford?zc_p=0

Rockford Fire Department unveils 1 of 2 quick-response SUVs

By Chris Green

RRSTAR.COM

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ROCKFORD — Reduce the Rockford Fire Department personnel from four-man to three-man engine companies? Not if the Rockford fire union has a say.

Redeploy existing personnel to staff two new SUVs with three firefighters each and reduce the wear and tear on a couple of aging fire trucks? Why not?

Fire Chief Derek Bergsten invited the media Friday to kick the tires of one of two new GMC Yukon XLs, the centerpieces to the Fire Department's new quick-response program.

One of the vehicles will be housed at Station No. 1, 528 Woodlawn Ave., and the other at Station No. 2, 104 Seventh St.

Price lower, MPG much higher

Bergsten said the department's aging fleet of vehicles is becoming more prone to breakdowns and increased out-of-service time. Meanwhile, the Fire Department's yearly calls for service continues to rise. This year, the calls for service totaled nearly 24,000, the vast majority on health emergencies.

"In order to prolong the life of our current fleet and continue to provide a quality service to our citizens, we are going to take a different response approach," the chief said of the SUVs.

Bergsten described the SUVs as "smaller, more agile, and they'll carry everything an engine would except for hoses, a water supply and ladders."

The Yukons cost about \$40,000 each, \$49,000 when detailed and loaded with equipment.

A new fire truck, on the other hand, costs about \$300,000 and a ladder truck costs about \$850,000, Bergsten said.

The Yukons, according to the sticker, will get 14 miles per gallon, whereas an engine truck will get seven to eight miles per gallon and a quint (a fire truck equipped with a water tank, a pump, hoses, aerial devices and ground ladders) will get four to five miles per gallon.

“We’ll save \$25,000 in diesel fuel as well as wear and tear on tires, brakes and parts,” Bergsten said.

Different duties for each

While the Yukons are exactly the same model, they differ in name, how they will be deployed and the amount of equipment.

The Yukon at Station No. 1 will go by the radio designation Rescue 1. The personnel normally assigned to Ladder 1 will respond in the SUV primarily to medical and lift assist calls. The ladder truck will be left in the fire station unmanned. If a fire truck should be needed, one will be dispatched from a different fire house.

Rescue 2, the Yukon housed at Station No. 2, will be staffed with three firefighters at all times and will be the first to respond to nearly all types of emergency calls, Bergsten said, with the exception of car and Dumpster fires. In addition to advance life support medical equipment, Rescue 2 also will carry the firefighters’ self-contained breathing apparatus, an oxygen tank and mask.

Bergsten said the two methods of deployment will be examined over the coming weeks and the findings will be presented at a monthly RockStat meeting.

Reach staff writer Chris Green at cgreen@rrstar.com or 815-987-1241.

<http://www.rrstar.com/news/x1015652058/Rockford-Fire-Department-unveils-1-of-2-quick-response-SUVs?photo=0>

Rockford Fire Department unveils 1 of 2 quick-response SUVs

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Rockford fire Chief Derek Bergsten stands with the Rockford Fire Department's new GMC Yukon XL SUV on Friday, Dec. 30, 2011, at the department headquarters in Rockford.



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