The Feasibility of Fire-Based Transports by the Albuquerque Fire Department

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Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

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Abstract

The problem is the City of Albuquerque has been experiencing a continuous decline in General Fund revenues, directly impacting the finances of the Albuquerque Fire Department. The purpose of this applied research project is to determine the plausibility of providing fire-based transports by the Albuquerque Fire Department in order to produce a self-sustaining revenue source for the General Fund. The descriptive method was used to answer the following research questions:

1) How many EMS 911 transports are produced in the City of Albuquerque each year and what are the associated charges from billing?
2) Does the Albuquerque Fire Department have the resources to provide fire-based transports to all EMS patients right now?
3) What are the circumstances of the Ambulance Services Contract between the Albuquerque Fire Department and Albuquerque Ambulance Services and what could prohibit the implementation of a fire-based transport service?
4) What oversight does the State of New Mexico have on ambulance transports in Albuquerque?
5) What patient(s) can the Albuquerque Fire Department transport for revenue?

Procedures used for this Applied Research Project included personal interviews, questionnaires, a national survey, written documents and figures, and internet searches on fire-based transporting. Results presented a linear relationship with literature review material—fire-based transports are a potential revenue source. Recommendations include directions for generating a fire-based transport service by the City of Albuquerque and the Albuquerque Fire Department.

Keywords: tariff, subset, peak hours, turnaround time, threshold value, net revenue

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Introduction

The Albuquerque Fire Department (AFD) was established as a volunteer fire brigade in 1882 and later became a paid professional municipal fire department for the City of Albuquerque in 1900. Today, AFD is an *all-hazard* fire-based emergency medical service (EMS) provider. As a fire-based EMS organization, AFD personnel respond with basic life support (BLS) and advanced life support (ALS) care; however, AFD is not the transport provider for the City of Albuquerque. The Albuquerque Fire Department began providing EMS care, through the use of first aid kits and bottled Oxygen in the 1920s and continued that way until 1957 when the first rescue was staffed, an old Panel Wagon, with two advanced first aid firefighters (H. Bishop, personal communication, July 9, 2013). Retired AFD Assistant Chief Herman Bishop is the Albuquerque Fire Department Historian and therefore his knowledge is important to this research paper. Two more advanced first aid AFD rescue units were added to the fleet in 1960 and 1964, and the first paramedic program, a nine week course, began in 1974 (H. Bishop, personal communication, July 9, 2013). The Albuquerque Fire Department has been responding to EMS calls with ALS rescues (ambulances with firefighting equipment) since 1975, and began using Emergency Medical Technician (EMT) Basics in the 1980s (H. Bishop, personal communication, July 9, 2013); however, AFD has never consistently transported patients. In reality, AFD only transports patients if the contracted transport company is not available, the patient has an immediate life threat and the contracted transport company is not on scene, or the patient is an on-duty city employee.

During the past 4 years the City of Albuquerque has made considerable budget cuts due to the poor economic times. In truth, City of Albuquerque expenses had exceeded their revenues by over $43 million between fiscal year 2010 (FY10) and fiscal year 2011 (FY11) ("10-Year Budget Trends," n.d., table 3). Budget cuts throughout all city departments has become the norm, with many taking pay cuts, others not receiving contracted raises, and even city wide hiring

freezes. Fortunately for the citizens of Albuquerque, the Mayor and City Council have worked together, making sure city services have not been adversely affected or neglected.

The time has come for the City of Albuquerque to look into a revenue generating service to off-set their poor economic environment. There have been revenue generating ideas that have been considered, such as cuts in service delivery by all city departments, brownouts, furloughs, and tax increases—none came to fruition. One idea, though, has recently come to the forefront due to the recent EMS transport contract that was signed in March of 2012 between the city of Albuquerque and a local nonprofit hospital-based transport service, Albuquerque Ambulance Services (ASS). It was at this time that City Hall began asking question about the uses and continuing costs of AFD's non-transport rescues. The problem is the City of Albuquerque has been experiencing a continuous decline in General Fund revenues, directly impacting the finances of the Albuquerque Fire Department. The concerns coming from City Hall are justified—the city is paying for the staffing and responses of transport capable rescue companies that do not transport. Worse, the transport contract has tied AFD into a non-transport revenue position for 2 years. Nonetheless, an opportunity has materialized to investigate further on the financial feasibility of providing fire-based transports.

The purpose of this applied research project (ARP) is to determine the plausibility of providing fire-based transports by the Albuquerque Fire Department in order to produce a self-sustaining revenue source for the General Fund. The descriptive methodology will be used to answer the research questions. The research questions are:

1) How many EMS 911 transports are produced in the City of Albuquerque each year and what are the associated charges from billing?
2) Does the Albuquerque Fire Department have the resources to provide fire-based transports to all EMS patients right now?

3) What are the circumstances of the Ambulance Services Contract between the Albuquerque Fire Department and Albuquerque Ambulance Services and what could prohibit the implementation of a fire-based transport service?
4) What oversight does the State of New Mexico have on ambulance transports in Albuquerque?
5) What patient(s) can the Albuquerque Fire Department transport for revenue?

Background and Significance

The City of Albuquerque is centrally located within Bernalillo County, New Mexico (NM) and is the State's largest city. The city is over a mile high with an elevation of 5,355 ft., encompasses an area of 188.8 sq. mi, and runs a mayor-council city government (CABQ Sunport, n.d., para. 4; AIS, 2013, p. 23). Albuquerque was founded in 1706 and is currently the 32nd largest city in the United States with a population of 555,417 (Ward, February 2013, p. 34; U.S. Census Albuquerque, 2012). The City of Albuquerque has urban and rural communities, including farms, ranches, wildland urban interface, the Rio Grande River and encompassing woodlands, and the Sandia Mountain foothills. The fire department provides fire protection and EMS responses to the citizens of Albuquerque with 22 fire stations (20 multiples—two or more staffed responding units) as well as providing aid to seven emergency response organizations throughout the Rio Grande Valley through the newly completed Metro Area Mutual Aid Agreement: Albuquerque Mountain Rescue Council, Albuquerque Ambulance Services, Bernalillo County Fire Department, Corrales Fire Department, Santa Fe City Fire Department, Sandoval County Fire Department, and the Rio Rancho Fire Department (City of Albuquerque [FY13 Budget], 2012, p. 181; AFD SOG, 2012, p. 2).

The Albuquerque Fire Department runs a two-tiered fire-based EMS system, responding with BLS units (engines, ladders, and squads) and ALS rescues to 911 emergencies. The mission of the Albuquerque Fire Department is *saving lives, and protecting property and the environment,*

while continuing to emphasize firefighter safety and survival (City of Albuquerque [About], n.d.). The Albuquerque Fire Department meets their mission by responding to emergency 911 calls with 22 engine companies, 19 rescue companies, seven ladder trucks, three brush trucks, two hazardous materials (HM) squads, one heavy technical rescue (HTR) squad, and one wildland urban interface (WUI) engine. The AFD staffing, as of September 2013, includes 692 full-time professional uniformed firefighters/EMTs, 488 at the basic and intermediate levels and 204 at the paramedic level. The AFD work schedules include a 48 hr on - 96 hr off field shift and a 40 hr work week for all administrative and support divisions.

The Albuquerque Fire Department is the first response agency for all emergency 911 calls in the City of Albuquerque and AAS is the partnering contract agency for EMS dispatches and transports. The City of Albuquerque signed an Ambulance Services Contract (ASC) with AAS on March 28, 2012, and it went into effect on April 28, 2012 (pp. 2, 15). The ASC contract is for 24 months and may be renewed at the City of Albuquerque's option (ASC, 2012, p. 6). Albuquerque Ambulance has been in operation since 1972 when they began transporting for the City of Albuquerque; however, AAS has never been under contract with the city in the past (Presbyterian Healthcare Services [PHS], n.d., para. 3). In fact, until recently, AAS has never had a competitor for the EMS transport contract in Albuquerque, but that has changed. On January 15, 2013, American Medical Response (AMR) requested, from the City of Albuquerque, any and all numbers and reasons AFD transports patients, any and all *level zero* (no ambulance available) AAS status, and any and all delayed responses by AAS for 2011 and 2012, as well as a final copy of the ASC contract; and on May 22, 2013 AMR received their ambulance transport certificate from the New Mexico Public Regulation Commission (PRC) for non-emergency medical transports between points and places in Bernalillo County, NM.

After the ASC contract was signed with AAS and the possibility of AMR becoming a future transport service, City Hall became increasingly concerned with the costs and future of

AFD rescues. Specifically, the city is paying 114 paramedics (three shifts) to staff 19 rescues that provide triage and treatment, but do not provide transport. Currently, there are times when AFD must transport a patient to the hospital (on duty city employees, life-saving immediate transports, or when AAS is unavailable); however, the patients are not charged and the transport numbers are very, very low. In 2012, AFD responded to 79,404 emergency 911 calls; with fire calls making up 1,718 or 2% of the total call volume—218 or 0.2% were actual structure fires (AFD Chief's Report, 2013, pp. 1-4, 7). However, EMS calls made up 80% or 63,272 of AFD's total 2012 call volume (AFD Chief's Report, 2013, p. 4). Simply put, EMS is AFD's primary response and future sustainability. Comparing current numbers with those of 2004—the year AFD began keeping statistical call records via *Zoll RescueNet FireRMS*—AFD's total call volume (67,837) and EMS responses (54,718) have risen significantly—and so has the cost of doing business (AFD 2004 Year End Report, 2005).

The Albuquerque Fire Department is financed four different ways: General Fund revenue, State Fire Fund revenue, Fire Debt Service Fund revenue, and Operating Grant Funds. Of these four funding budgets, only the General Fund impacts the City of Albuquerque financially, moreover, it provides almost the entire operating budget for the fire department. The General Fund is the city's primary operating fund and is used for all general operations and financial resources within the fund. The City of Albuquerque General Fund revenues for fiscal year 2012 (FY12) was $462 million (AIS, 2013, p. 36). The FY12 Operational Budget for AFD was 69.81 million, of which $68.81 million (98.6% of the budget) was bankrolled by the General Fund (City of Albuquerque [FY14 Proposed Budget], 2013, p. 87). In fact, 15% of the city's entire General Fund Budget financed AFD in 2012 (FY14 Proposed Budget, 2013).

The Albuquerque Fire Department's only major consistent source of revenue comes from the building inspection fees provided by the Fire Marshal's Office (FMO), which is deposited into the General Fund—not the fire department. The inspection fee revenue for the city in 2012

was $700,000 (FY13 Budget, 2012, p. 183). Other AFD revenue sources, not always consistent, in 2012 were: EMS support staff for special events; EMS training for outside departments; and the ASC contract; at $30,000; $20,000; and $200,000, respectively (FY13 Budget, 2012, p. 183; ASC, 2012). While AFD has achieved cost savings and some revenues for the city, more can be done to off-set the financial problem that began in 2008.

In 2008, the City of Albuquerque began experiencing the national economic slowdown and adjusted the fiscal year 2009 (FY09) Approved Operating Budget (AOB) accordingly—it was believed that with enough cuts, $65 million, including a 1/8th cent Gross Receipts Tax (GRT) break—the city would be financially balanced and still vital (Chavez, 2008, p. 1). Within the FY10 AOB, former Mayor Martin Chavez advised the City Council just how drastic the nationwide recession, which began December of 2007, was to the city's budget. "The FY10 budget has been the most challenging we have faced in modern times. The global and national economics have been in the deepest recession of the post WWII era . . . this is a 'no growth' budget" (Chavez, 2009, p. 1).

The first annual budget presented to the City Council by current Albuquerque Mayor, Richard Berry, was the FY11 AOB. Unfortunately for the Mayor, the City of Albuquerque sustained a $39 million loss for FY10 ("10-Year Budget Trends," n.d., table 3). Mayor Berry's FY11 AOB stated:

> My goal for this budget was to preserve basic core city services and maintain fiscal responsibility. We still plan to maintain the same level of . . . firefighters for public safety. My intention for this budget was to have as little impact on our citizens as possible. It is evident that we are working through the worst economic downturn most of us have experienced in our lifetimes. During my first few months in office I implemented a $25 million savings plan for FY10. We are facing a $66 million shortfall in the FY11 budget. We were able to avoid

> furloughs, layoffs, and service cuts as we ended the FY10 budget. (Berry, 2010, para. 2, 3, 4)

When the Berry Administration took office it was noted that General Fund revenues had been declining for 19 consecutive months (City of Albuquerque [FY11 Budget], 2010, p. 52). Sixty-four percent of the General Fund budget comes from the GRT and the GRT had declined by 5.5% in FY09 and another 6% in FY10 (Berry, 2010, para. 3; FY11 Budget, 2010, pp. 12, 135). Even a reduction of a 1/8th cent GRT in FY09 could not help the City of Albuquerque keep its economy balanced or vital (Chavez, 2008, p. 1).

In order to help the City of Albuquerque through its financial crisis, the International Association of Fire Fighters (IAFF) Albuquerque Area Fire Fighters Union Local 244 (L244), led by President Diego Arencón, voluntarily proposed a Memorandum of Understanding (MOU) in order to adjust the current Collective Bargaining Agreement (CBA). As the L244 Union President, Arencón has first-hand knowledge of the labor negotiations with the City of Albuquerque and therefore his communication in this research is important. The MOU stated that AFD firefighters would give back six paid holidays and the next scheduled raise for a 2 year period, worth $6 million—the proposal was rejected (D. Arencón, personal communication, July 29, 2013). With 76% of the General Fund budget going to labor costs, Mayor Berry decided to eliminate 158 vacant positions, implement a 12 month delay in the hiring of 88 positions, eliminate pay raises for city employees and increase their portion of health, dental, and vision care, and finally, a 2.2% reduction in pay for all city employees (Berry, 2010, para. 7, 8).

In an attempt to cut further expenditures and streamline operations, the Matrix Consulting Group (MCG) was hired in 2011 to conduct an Organizational Design Project Study on the City of Albuquerque. "This study was designed to provide an assessment of the efficiency and effectiveness of City operations, identifying strengths and improvement opportunities relating to organization, staffing and management" (Matrix, 2012, p. 1). The MCG report was released to

the City of Albuquerque in December of 2012 and included recommendations for all city departments. The fire department received 18 recommendations, with only two involving cost savings: Staffing rescues with one paramedic and one basic and staffing fire dispatch with civilians (Matrix, 2012, pp. 314, 328, 333-334).

The overall city and fire department costs, combined with two possible transport companies competing for the ASC contract has led the City of Albuquerque and AFD to consider the plausibility of entering the patient transport business. New revenue from fire-based transports can give the City of Albuquerque a financial lift and put to good use the personnel and equipment already in service. By adapting to a new challenge—fire-based transports for revenue—the City of Albuquerque and AFD will achieve *solvency*; and indirectly improving upon their mission: saving lives of Albuquerque citizens (AFD Chief's Report, 2013, p. 4). "To retain and even enhance their future role in EMS delivery, fire departments need to be creative . . . to increase their operating revenues by providing nonemergency [and emergency] transport . . ." (Carter & Rausch, 2008, p. 248). Albuquerque Fire Department Fire Chief James Breen believes that a future in fire-based transports is both a challenge and a blessing. As the Fire Chief, Breen has administrative expertise and operational knowledge, therefore his communication in this research is paramount. "The fire department needs to be efficient, providing a high level of professionalism, and value to their citizens and system" (J. Breen, personal communication, August 9, 2013). Chief Breen also stated, "It is wise to expand our [AFD] stake in the EMS system, including community paramedicine and fire-based transports for revenue" (J. Breen, personal communication, August 9, 2013).

This ARP research correlates to three of the five U.S. Fire Administration (USFA) course goals: Improve local planning and preparedness; Improve the fire and emergency services' capability for response to and recovery from all hazards; and Improve the fire and emergency services' professional status (United States Fire Administration [USFA], 2010, p. 13). This

research will show the importance of improving fire-based EMS systems through the implementation of EMS transports. The application of fire-based EMS transports allows the full capabilities of a fire department to be used on all emergency responses. By implementing a fire-based EMS transport system, the Albuquerque Fire Department will improve local planning and preparedness for future disasters, thus fulfilling the second USFA goal: Improving local planning and preparedness (USFA, 2010, p. 13). Albuquerque Fire Department's ability to respond and recover from emergency scenes as a transport unit will improve and build the organization's services, thus fulfilling the USFA's third goal: Improve the fire and emergency services' capability for response to and recovery from all hazards (USFA, 2010, p. 13). By transporting a patient off an emergency scene and conducting continuous patient care to the hospital, AFD will improve on patient care skills, meeting their mission and fulfilling the USFA's fourth goal, Improve the fire and emergency services' professional status (USFA, 2010, p. 13).

The Executive Development (ED) class, the first Executive Fire Officer Program (EFOP) course, introduced several course goals throughout the two week class. At the end of the course, five goals were reflected on, and while all five goals apply to future Executive Fire Officers (EFOs), two really correlated with this research paper: Help EFOs to use adaptive leadership principles to manage change and Provide EFOs with an opportunity to use research to solve real-world problems in their work environments (Federal Emergency Management Agency [EFOP], 2012, p. SM 13-3). The Albuquerque Fire Department has been providing emergency responses without patient transports for over 113 years—a significant adaptive challenge. This ARP will provide AFD and the City of Albuquerque information and knowledge on their financial transport capabilities, while recognizing that a deep rooted culture change must be addressed, left alone, or reinforced. Change itself can be perceived as being done for no reason or for personal ambition, rather than to respond to real organizational needs (EFOP, 2012, p. SM 5-3).

Literature Review

The purpose of this literature review was to provide the foundation and background for this ARP through the careful examination of valid published manuscripts. The literary data collected and investigated was used to summarize the factors involved with fire-based transports.

Though patients have been transported for centuries, fire-based transports, as a whole, is still a new concept. One of the first fire-based ambulance transports can be traced back to 1937. The Locust Valley Fire Department (NY) transported composer-songwriter Cole Porter after his legs were crushed in a horse riding accident (McBrien, 1998, p. 210); however, it wasn't until the late 1950s that fire-based EMS and transports began to really develop.

The late 1950s through the early 1960s were a profound time in the advancement of fire-based EMS. The Baltimore Fire Department Ambulance Service worked directly with Dr. Peter Safar on studies involving mouth-to-mouth ventilation and Cardiopulmonary Resuscitation (CPR) (National Highway Traffic Safety Administration, 1996, p. 61); and the Chicago Fire Department was involved with the first prototype EMT-Ambulance course with Dr. Joseph Farrington and Dr. Sam Banks (Beebe & Myers, 2010, p. 24).

The Miami Fire Department was the first fire-based paramedic program established in 1968 with Dr. Eugene Nagel and Dr. Jim Hirschman—Miami Fire was also the first fire-based EMS system to successfully revive a patient using the newly introduced Life-Pak 33 defibrillator in 1969. Also in 1969, Dr. Leonard Cobb and the Seattle Fire Department established the Medic One Paramedic Program; and Battalion Chief James O. Page of the Los Angeles County Fire Department implemented and coordinated the department's first paramedic rescue services (Beebe & Myers, 2010, p. 24).

While out-of-hospital EMS was beginning to show successes through new innovations and interventions, the realization that transportation oversight was needed for both operators and vehicles came to fruition. In 1966, four different documents were released in order to provide

recommendations on the growing need for better traveling conditions. The Highway Safety Act of 1966, the National Traffic and Motor Vehicle Safety Act of 1966, and the Department of Transportation Act of 1966 were introduced by the United States Senate and House of Representatives; and the 1966 *Accidental Death and Disability: The Neglected Disease of Modern Society* was published by the National Academy of Sciences: Committee on Trauma, Committee on Shock, Division of Medical Sciences, and the National Research Council.

The Highway Safety Act (1966) was established to provide financial assistance and cooperation to the States in order to accelerate national highway safety programs. Congress set aside $267 million for States' safety programs from June 30, 1967 to June 30, 1969 (Highway Safety Act, 1966); and the National Traffic and Motor Vehicle Safety Act (1966) was established to reduce traffic accidents, traffic deaths, and traffic injuries by recommending the establishment of motor vehicle safety standards for all vehicles and equipment in interstate commerce. The Department of Transportation Act (1966) was created for bettering public safety and public interest, while coordinating and facilitating the development and improvement of transportation services at the federal, state, and local levels.

The 1966 *Accidental Death and Disability: The Neglected Disease of Modern Society* report provided information and recommendations on the needed change to practices and inadequacies at all levels of emergency care within the U.S.; including the inadequate areas directly involved with ambulance services. Problems and concerns within the ambulance service included a lack of uniformity of transport units and companies, and a lack of medical skills by the emergency provider. In fact, in 1966, approximately 50% of the country's ambulance services were provided by 12,000 morticians—not because they were medically trained, but because they could fit and transport patients on litters in their units (National Academy of Sciences, 1966, pp. 13-14). The remaining 50% of ambulances were maintained by private companies, volunteer groups, nonprofit groups, local groups, police departments, and fire departments.

Recommendations of note: across the board standards for the design, construction, equipment, and supplies of ambulances; policies and regulations of services provided; and qualifications and supervision of personnel (National Academy of Sciences, 1966, pp. 13-15).

In order to implement the recommended changes to ambulances and EMS training provided by the 1966 *Accidental Death and Disability: The Neglected Disease of Modern Society* report, a nationally acceptable set of standards needed to be developed. Two years later, in 1968, the *Medical Requirements for Ambulance Design and Equipment* was published by the Committee on Emergency Medical Services, the Division of Medical Sciences, the National Academy of Sciences, and the National Research Council. The paper report included specific standards on ambulance design and construction, security and rescue equipment, emergency care equipment and supplies, and communication and documentation (Division of Medical Sciences, 1968, pp. 3-4).

In 1973, the Emergency Medical Services (EMS) Systems Act was introduced by Congress. The EMS Systems Act of 1973 was established to administer assistance to State and local level providers by rewarding grants and contracts for the development of EMS systems. In all, 15 areas were identified as components of an EMS system and $185 million was set aside for EMS provider assistance from June 30, 1974 to June 30, 1976 (Emergency Medical Services Systems Act, 1973). With regard to EMS transport units, the EMS Systems Act (1973) states that the EMS system shall provide an adequate number of ground transportation and transportation of patients to medical facilities within the system's service area. Another important investigative analysis came out in 1973 that addressed the U.S. fire problem; however, it also touched on the future of fire-based transports. *America Burning*, a report on the American fire service by the National Commission on Fire Prevention and Control, was a study done on the Nation's fire problem and provided recommendations on how to reduce those significant losses (Neville, 1973, p. x). There are 90 recommendations within the report, with the 19th recommendation specific to

EMS systems (Neville, 1973, pp. 167-171). The 19th recommendation by the commission states that fire departments lacking emergency ambulances, paramedicine, and rescue services, should consider providing them (Neville, 1973, pp. 38, 167). In fact, the report also states: "The provision of ambulance services will enhance the value of the fire department in the eyes of the community that supports it" (Neville, 1973, p. 38).

While EMS in the U.S. has been maturing in since 1973, fire-based EMS has taken advantage, growing into a leading transport agency. In 1993, a fire department survey by the Phoenix Fire Department, *National Survey on Fire Department Operations,* stated that 30.55% of fire departments providing EMS also provide patient transports (pp. 1-33). Fifteen years later, a 2008 study on 273 EMS organizations conducted by the U.S. Department of Transportation (DOT), *Configurations of EMS Systems: A Pilot Study,* identified fire departments as both the first on scene emergency unit to arrive and as the primary unit for patient transports, 67.2% and 36.1%, respectively (Carlini & MacKenzie, 2008, p. 7). Though it appears there has only been 5.55% growth in transports during the 15 year period, the percentages are based off of a much larger volume of transports. "Emergency medical service calls have become the most frequent activity, accounting for 55% of fire company responses. In some fire departments, EMS calls represent 80% of a fire company's response workload (Stokes, Ward, & Holland, 2010, p. 15).

According to the *2011 National EMS Assessment*, fire-based EMS is the largest EMS transport provider in the U.S. with 40% or 6,388 fire departments located in 46 States, with private non-hospital ambulance services second at 25% (Federal Interagency Committee [FIC EMS], 2012, p. 31). Of note, specific data was unavailable from California, Illinois, Virginia, and Washington State—all large fire-based transport system States (FIC EMS, 2012, p. 31).

In January 2012, the U.S. Fire Administration's National Fire Department Census (NFDC) reported that 5,428 or 20.5% of registered U.S. fire departments provided EMS ambulance patient transports (U.S. Fire Administration [USFA Quick], 2012, table 3). The NFDC

also reported that there are currently, 26,482 fire departments registered with their census—about 88% of the fire departments estimated to be in the U.S.; the National Fire Protection Association (NFPA) estimated that there were 30,125 fire departments in the U.S. in 2010 (USFA Quick, 2012, para. 1).

Fire departments today are more involved than ever in fire-based EMS and patient transports; additionally, fire-based transport units respond during disasters, whereas private ambulances may not have the option to respond (Pratt, n.d., p. 25). Fire departments are an all-hazard service that are strategically placed throughout the U.S. and have seen their total fire responses between 1977 and 2011 decrease by 44% (Karter, 2012, pp. 9, 32). In 2011, EMS responses accounted for more than 66% of total U.S. fire department call volumes (Karter, 2012, p. 2); therefore the importance of having a fire-based transport service is paramount to the community it serves. With less fires and more EMS calls, over 90% of U.S. fire departments are involved in today's EMS system as first responders, BLS responders, ALS responders, and as transport agencies (Williams, 2007, p. 42). The merging of fire departments, EMS, and patient transports was just a matter of time.

The historical and current marriage between the fire service and EMS was not by accident. The advantage of using fire departments to deliver EMS care was a marriage of convenience and smart business. Strategically located fire stations throughout the United States, coupled with dependability and pride, provide fast responses and transport times. "Fire-based EMS . . . including transport [units] . . . should be strategically located for efficient deployment" (Pratt, n.d., p. 26). Data collected from more than 300 U.S. fire departments dispatched simultaneously with ambulance services, revealed that fire departments arrive to EMS calls prior to ambulance services 80% of the time—a direct reflection of fire station location and first responder pride in response times (Moore-Merrell et al., 2010, p. 10).

Many of today's fire departments may not provide fire-based EMS or transports by virtue of not knowing what is needed to provide those services. In 2013, the newest edition of *NFPA 450: Guide for Emergency Medical Services and Systems* was printed with specific instructions on the resources needed to build a fire-based EMS system. "The purpose of this document is to provide guide-lines, resources, and recommendations to assist those interested or involved in EMS systems design…This document also provides a frame-work for designing and/or evaluating a comprehensive EMS system" (NFPA 450, 2013, p. 5). Also printed in 2013 was *NFPA 1917: Standard for Automotive Ambulances* which states: "This standard defines the requirements for new automotive ambulances designed to be used under emergency conditions to provide medical treatment and transportation of sick or injured people . . ." (p. 5).

Another consideration that must be made during a transition to a fire-based transport system is fire department tradition. Changes to the fire service can come in two forms: *technical changes* and *adaptive challenges.* A change in the way a fire department operates business can be a technical change, where a past solution fixes the change without problems or concerns; however, an operational change can be something that a fire department has never done in its history, causing the change to be an adaptive challenge. An adaptive challenge can cripple a fire department—especially if it is treated like a technical change. In *Leadership on the Line,* Heifetz and Linsky (2002) explain that the single biggest failure with change is when an adaptive challenge is treated like a technical problem (p. 14). An adaptive challenge involves a deep rooted change that affects values, beliefs, attitudes, behaviors, and culture; requiring new innovations for successful transitions.

Successful transitions to change require buy-in from personnel, especially when working with labor unions. A significant change in fire department operations must meet the needs of the employee, the citizens, and the organization itself. Changing a fire-based EMS system into a transport for revenue service will require union leadership to organize employees to act

collectively and responsibly in the best interest of all parties involved (Brock & Lipsky, 2003, p. 125). A successful collaboration between administration and labor can lead to positive and rewarding changes. For example, in 1994, the tax revenues for the Indianapolis Fire Department had reached the maximum allowed by law and any further increase in fire department salaries, pensions, or significant needs would bust the statutory cap (Brock & Lipsky, 2003, p. 107). However, to the surprise of administration, IAFF Local 416, with Union leaders Tom Hanify and Tom Miller, chose to help the city and joined the fire chief and public safety director in presenting Mayor Stephen Goldsmith with a proposal that would enhance safety, reduce costs, and reward hardworking firefighters during their financial dilemma (Brock & Lipsky, 2003, p. 107). "Successful fire departments have a good relationship with their union, which makes them both stronger . . . [and] when a dysfunctional relationship characterizes union and management, both are weaker" (Edwards, 2005, p. 231).

Today, there are many types of U.S. Fire-based EMS systems that involve transport; the three most followed configurations are: a *cross-trained* fire department that responds, treats, and transports all 911 calls; a *non-cross-trained* fire department that responds, treats, and transports all 911 calls; and a *non-transport* fire department that responds and treats patients, but has a contract with a private, hospital-based, or *third party* (police, fire, EMS) transporting agency for patient transport (Pratt, Pepe, Katz, & Persse, 2007, p. 10).

A cross-trained fire department provides a community with a responding firefighter who is also a licensed EMT, saving time and money for the emergency response. For example, the Los Alamos Fire Department in Los Alamos, NM responds to all emergencies in their community and provides all EMS and transport. Los Alamos Fire Department provides a 'fire service based' EMS 911 transport system with six transport rescues, while also providing all fire service calls (Los Alamos Fire Department, n.d.).

A non-cross-trained fire department provides a community both a responding firefighter and an EMT, but not always at the same time; in fact, fire department personnel work as either a firefighter or an EMT. For example, the Fire Department of New York (FDNY) has a separate EMS Division that does not fight fires; their functions only include the treatment, triage, and transport of emergency 911 patients (FDNY, n.d., para. 1).

A non-transport fire department, cross-trained or not, provides a fire department response only; a transport company responds separately, and not always at the same time. For example, the Boston Fire Department (BFD) responds to all emergency calls as first responders only and does not provide EMS or transport. While BFD can only provide the most basic patient care, they can still support on scene EMTs and paramedics (City of Boston, n.d., para. 1).

While EMS response configurations are important for emergencies, how many actual 911 calls and transports occur in the U.S. yearly? In 2009, over 36 million 911 EMS responses occurred in the U.S. while 28 million resulted in transports; in 2010, over 10.7 million EMS patient transports occurred—unfortunately, only 17 U.S. States reported numbers in 2010 (FIC EMS, 2012, pp. xii, 429). In 2011, U.S. fire departments responded to over 19 million 911 EMS calls (Karter, 2012, p. 24); but how many were transported and who is paying for these transports? While the cost of a transport is defined by *tariffs* (table of charges), transport numbers are provided through more research. According to the *2004 JEMS 200-City Survey*, the average number of EMS responses and transports can be determined by population. Under the 2004 population for cities with 500,000 to 600,000 people, the average number of EMS responses by first responders was 46,617 and the average number of transports was 26,381 (Williams, 2005, p. 54). The *2006 JEMS 200-City Survey,* for cities between 500,001 to 600,000 people, stated averages of 53,651 for EMS responses and 44,133 for transports—both numbers grew by 15% and 67%, respectively (Williams, 2007, p. 42).

Most fire-based EMS systems charge fees to transport patients to the hospital—those that do not must seriously look into it. Public fire departments and their cities need transport revenue now more than ever. With mounting overtime costs, increasing fuel prices, and vehicle maintenance, city budgets are being overburdened. Fire departments need to increase their revenues in order to continue daily operations. For example, in 2012, the Folsom Fire Department began charging new fees to patients who called 911 for medical help in order to cover the increasing costs of gas, supplies, and paramedic personnel (Large, 2012, para. 6). Another much larger cost concern for fire departments is now on the horizon, *Obamacare*—the Patient Protection and Affordable Care Act of 2010 (PPACA). Current and future patients must be medically covered and cannot be turned away, creating a much larger call volume for EMS responders. While the PPACA will ensure all patients have better health care opportunities and outcomes, the EMS system—fire departments—will be taxed physically and financially. Nonetheless, the PPACA will provide future revenue opportunities for the proactive fire department seeking solvency through fire-based transports and community paramedicine. However, ambulance services will also be competing for future PPACA revenues as well. In fact, private ambulance services are fighting for their future by competing for transport contracts, and they are willing to pay large sums of money for them. Recently, the Shoreline Ambulance Service in Westminster (CA) competed and won the transport contract for their city, paying $2.6 million (Kopetman, 2012, para. 2). In San Diego, Rural-Metro Ambulance Service will be receiving the ambulance service contract this year for $10 million (Gustafson, 2013). Fire departments must be able to compete for future transports—too much money is at stake.

Patient transport fees can be determined in several ways. For example, level of care received (first responder, BLS, or ALS), the number of responding units (one medic rescue/ambulance or one engine company or both), equipment used on scene, and type of transport (Code 1- no lights or sirens or Code 3- lights and sirens). Fees for transports can also

be determined by ambulance tariffs, Medicare, Medicaid, and insurance companies. Payment of transport fees can come from Medicaid, Medicare, insurance policies, self-pay, local taxes, and monthly membership pay-plans (pre or post transport).

> EMS revenue may be generated by 'fee-for-service' systems, capitated agreements with health insurers, or subscription programs. Fee-for-service programs charge individual patients for care provided based on the services rendered. Capitated agreements may pay providers a negotiated rate per health organization member transported per month (both emergency and inter-facility). Some of these agreements may also allow payment for providing follow-up, patient education, or prevention services. Finally, subscription programs allow the public to prepurchase EMS services and avoid being charged additional fees when the service is used. (IAFF [Monograph 7], 1997, p. 8)

The possibility and sustainability of future fire-based transport systems are dependent on generated revenues. The funding for transports must sustain capital expenditures like vehicles, medications, and specialized EMS equipment; it must also sustain operating expenditures like personnel, training, single-use equipment, fuel and maintenance. For example, in January 2013, the Dearborn Fire Department (DFD) began to bill for EMS calls. The Dearborn Fire Department has been losing as much as $800,000 in annual EMS costs—DFD does not bill for 'treatment, no transport' calls (Carreras, 2013, para. 1-5). In 2012, DFD went on 2,000 EMS calls where 'treatment, no transport' occurred; now DFD will be charging a flat rate of $400 for 'treatment, no transport' calls (Carreras, 2013, para. 8). While every 911 call is not billable, every call costs money, like fuel, equipment, medicine, and total time involved with the call.

While tax increases and insurance claims can cover most costs, Medicaid and Medicare are other avenues of cost recovery. Funding is a huge concern for future fire-based transport systems and the citizens that they serve. For example, in 2012, FDNY increased the price of an

ambulance transport to $704, nearly a 40% increase over the current rate of $515—this was done to help defray the costs of their transport service (Hotz, 2012, p. 1). Another example of funding affecting the fire department and its citizens comes from the York County (VA) Fire and Life Safety Service Department. York County currently provides an EMS Transport for Fees Program to their citizens (York County, n.d.). It was developed by the fire department out of concern for the financial well-being of their residents, while still allowing for positive revenues. In order to minimize resident out-of-pocket expenses, the fire department bills the insurance companies; Medicare; and Medicaid; directly for transport services—with the remainder of the bill waived (York County, n.d., para. 2). Furthermore, uninsured residents will have options to pay their transport fees, while patients that are not transported pay no fees.

Costs also affect whether a fire department transports all patients or a smaller *subset* of the patient population. For example, the City of Las Vegas, currently the 31st largest U.S. city with a population of 596,424, provides transport to the three 'sickest patients' per 24-hour shift, per rescue unit (U.S. Census Las Vegas, 2012; ICMA, 2012, pp. 2, 93). Between July 1, 2011, and June 30, 2012, Las Vegas Fire and Rescue (LVFR) transported 28% of total patient transports (14,577) while the private ambulance service, AMR, transported the rest, 72% (37,892) (ICMA, 2012, pp. 2, 111). In November of 2012 a report released to the City of Las Vegas from the International City/County Management Association (ICMA), *Final Report: Fire and Emergency Medical Services*, stated that the cost of transports by LVFR was losing too much money and the city needed to do one of two things: drop fire-based transports all-together or take over all transports for the City of Las Vegas.

> The city could discontinue the LVFR EMS transport service delivery model. By choosing this alternative, the city can realize substantial personnel and equipment savings (estimated at $14-$18 million) by discontinuing the current deployment of 21 rescue units (126 FTEs, maintenance and replacement costs of frontline and

> reserve ambulance fleet). Or, LVFR could engage the EMS transport service delivery model fully, with a goal of transporting all patients. If this service delivery model is chosen, substantial additional estimated revenues of $12–$14 million may be realized (dependent on collection rate and number of transports). (ICMA, 2012, p. 4)

While costs can affect how many subset transports can be made by fire departments, others have the ability to provide larger subset patient population transports. For example, the Orlando Fire Department (OFD) provides a large subset patient population transport system. The City of Orlando is currently the 78th largest U.S. city with a population of 249,562 (U.S. Census Orlando, 2012). In 2010, the transport contract in Orlando came up for bid and two ambulance services put in their bids: Rural-Metro and AMR. Since OFD responds to all emergency 911 EMS calls first, providing treatment with paramedic staffed ambulances, the City of Orlando decided to compete for the contract as well. In fact, after seeing millions of dollars in EMS transport fees going to out-of-state companies, the City of Orlando knew it was time to start transporting; and in February 2011, OFD began transporting a subset of the patient population (Orlando Sentinel, 2010). The Orlando Fire Department transports all ALS and motor vehicle accident (MVA) patients with 11 full-time rescues, plus four rescues during peak hours, and up to six reserve rescues when needed (Orlando Fire Department, 2012). A fire-based transport evaluation was conducted from May 2011 to April 2012 and revealed OFD responded to 36,194 EMS calls and transported 19,174 patients for just over $18.26 million in billing charges—as of April 2012, $4.8 million had been recovered ($250 per transport) (Florida Department of Health, 2012, p. 20; Orlando Fire Department, 2012).

Another example of fire-based transports involving a subset of the patient population comes from Lima, OH. In 2009, the Lima Fire Department (LFD) proposed to their City Council a need for fire-based transports. The proposal requested that the fire department begin providing and billing fire-based transports for MVAs. “Every state motor vehicle department requires

vehicle registrants to hold automobile insurance. Some of these insurance carriers allow for fire departments to charge for services rendered at the scenes of auto accidents" (IAFF [Monograph 4], 1997, p. 18). At the request of Fire Chief Mark Heffner, the patients were not charged for the transports, instead the insurance companies were charged using *soft billing*—taking what the insurance company will pay (Rutz, 2009, para. 4). Motor vehicle accident charges can also be applied to a patient's medical insurance or auto insurance. "For example, the bill goes to the person's auto insurance company after responding to a motor vehicle accident where rescuers used hydraulic rescue tools for extrication" (Monograph 4, 1997, p. 18). The proposal was accepted and by February 2010, LFD was transporting MVA patients to local hospitals. Through the end of 2011, LFD's 2 year average for transported MVA patients and associated revenues were 1,165 and $241,000; respectively (Lima FD, 2012, pp. 15-16). Fire- based subset patient transports by LFD has off-set LFD's total expenses for FY10 ($409,526) and FY11 ($514,245) by 49% and 55%, respectively (City of Lima, 2012, p. 19A). "In today's environment of increased responsibilities and decreasing budgets, local government and fire department leaders must constantly evaluate and justify current systems and be prepared to propose system design changes to protect the quality of publicly funded fire-based EMS [systems]" (Schaitberger, n.d., p. 3).

Procedures

This applied research project used the descriptive research methodology for the four personal interviews, three questionnaires, and a nationwide survey. Obtaining information and gathering data from a wide variety of sources was used for the purpose of answering the research questions and for the development of recommendations. Further information gathered to address the research questions came from the internet, fire service manuals and journals, economic textbooks, EMS journals, and technical reports. The information found was used to gain more knowledge, data, and insight on fire-based transports.

The procedures used to collect and support information for this ARP initially began at the Learning Resource Center (LRC) at the USFA National Emergency Training Center in March of 2013. Further information searches for the literature review took place at the University of New Mexico (UNM) Zimmerman Library, the East Mountain Public Library in Tijeras, NM, and the Fire Library at the AFD Training Academy. Besides fire science textbooks and medical journals, the internet was used to locate other forms of literature review information and provided areas and locations to continue gathering research. The literature review was used to gather as much comprehension and clues on the subject of transporting patients by fire-based EMS systems as possible. Actual original data, researched and gathered for this ARP, came from personal interviews, questionnaires, a national survey, and internet searches on fire-based transporting.

The personal interviews were conducted to gather more specific information on the research questions from leaders in their professional fields. While fire-based transports have been around the U.S. for some time, the City of Albuquerque has never transported patients and therefore, for this ARP, the need for professional insight, opinion, and information was needed. The questions selected for the interviewees were dependent on their professional field of work. The sample size, four, was determined and selected based on the need for representation from each applicable service: fire, ambulance, law, and finance. The first interview was with Public Regulation Commission (PRC) Transportation Division Director, Ryan Jerman. The purpose of this interview was to learn about the laws and rules of ambulance services and EMS transports, and its application to the fire service in the State of New Mexico. Several interviews took place by phone and email from June 17 – August 5, 2013. See Appendix A for a list of all questions and answers. The second interview was with Tucson Fire Department Captain Franchot Opela. The purpose of this interview was to learn about specific subset patient population transports by a fire-based EMS system. Several interviews took place by phone, text, and email from July 27 – August 30, 2013. See Appendix B for a list of all questions. The third interview was with Rio

Rancho Fire Department Deputy Chief of Operations Paul Bearce. The purpose of this interview was to learn about a fully functioning all transport fire-based EMS system. Several interviews took place over the phone, text, and email from August 6 - 29, 2013. See Appendix C for a list of all questions. The fourth interview was with two City of Albuquerque employees: Director of Finance & Administrative Services Lou Hoffman and City Attorney David Tourek. The purpose of this interview was to learn about the City of Albuquerque's financial and legal decisions and how they apply to AFD's future in the transport business. This interview took place in person on August 20, 2013. See Appendix D for a list of all questions.

During the literature review, this researcher found that additional information was needed to help answer the research questions. Therefore, questionnaires were developed with a purpose of providing statistical data for further discussion and possible recommendations for this ARP. The questionnaires were sent to three highly knowledgeable individuals that have valued information through education, experience, and insight. The sample size, three, was chosen and selected based on the need for statistical data by representatives directly impacting the current and future of fire-based transports in Albuquerque. Each questionnaire was developed around the research questions and each individual's profession.

The first questionnaire was sent to AFD Deputy Chief of EMS Karl Isselhard. The purpose of these questions was to gain statistical knowledge about AFD call volumes. The questions were sent via email and several communications occurred from June 17 – August 30, 2013. See Appendix E for a list of all questions. The second questionnaire was sent to NM Department of Health EMS Program Manager Charles Schroeder. The purpose of these questions was to learn more about fire-based transport laws and rules. The questions were sent via email on July 8, 2013. See Appendix F for a list of all questions. The third questionnaire was sent to AAS Executive Director Kurt Krumperman. The purpose of these questions was to learn about AAS transport revenues, call volumes, and transport numbers within the City of Albuquerque. The

questions were sent via email and several communications occurred from July 8 – August 16, 2013. See Appendix G for a list of all questions. All three questionnaires were received back with answers.

A nationwide survey, EFO EMS Transport Survey (EET), was developed and distributed by this researcher using Survey Monkey and email. The Survey Monkey was constructed using the "Create Survey" option, which allowed this researcher to customize the questions, format, privacy, and access time for the end user. The purpose of the survey was to determine the organization type, staffing, response, billing, and assumptions of current fire and ambulance service transport and non-transport providers. Sandia National Laboratories (government agency) EMS transport paramedics were used to review the EET survey questions for Content validity and Alternate-Form reliability—the questions were found to be both valid and reliable. During the literature review, this researcher was unable to find a specific survey to gain more valuable information about this ARP and so the EMS Transport Survey was developed. The sample size chosen by this researcher was 165 fire and ambulance service organizations throughout the U.S. The fire and ambulance services that received the EET survey included paid, volunteer, and combination organizations; transport and non-transport agencies; and ranged in sizes from small to large. This researcher wanted to receive a large enough response from survey participants in order to gain a wide variety of beneficial information on the research questions. The survey was distributed by email via Survey Monkey on June 17, 2013 and remained open until midnight, August 17, 2013. The survey samples were selected from three sources and included Stratified Sampling, Convenience Sampling, and Judgment Sampling. The PRC, in conjunction with UNM Hospital, provided this researcher with email addresses for NM EMS providers through the use of a Stratified Sample. The Convenience Sample came from prior email addresses collected by this researcher from past NFA courses at the National Emergency Training Center. The final source of email addresses came from Judgment Sampling, provided by this researcher through the use of the internet. Follow-up procedures used to encourage a good response included seven reminder

emails, weekly, to those participants that had not answered the survey. Noted limitations of this survey included: blocked surveys by email addresses, non-random selection of participants, participant response was anonymous, truthfulness of answers, and comprehension of the questions. In all, 104 or 63% of the fire and ambulance services emailed completed either all or portions of the EET Survey Monkey. A copy of the EFO EMS Transport Survey is located in Appendix H, and a list of the fire and ambulance services that participated in the survey is located in Appendix I.

The fire-based transport information gathered from personal interviews; questionnaires; and internet searches, allowed this author to develop two City of Albuquerque Total Patient Population Tables, located in Appendix J, two Projected AFD Fire-Based Transport Tables, located in Appendix K, and three Projected AFD EMS Budget Option Tables, located in Appendix L.

Results

The research questions were answered using the descriptive methodology. The answers came from several different sources and are supported by the data retrieved from personal interviews, questionnaires, a national survey, and document analysis of written reports.

The results for the first research question, *How many EMS 911 transports are produced in the City of Albuquerque each year and what are the associated charges from billing?,* came from questionnaires, written sources, the EET survey, and an informational table providing EMS run numbers. The presence of a competitive market for EMS transports in Albuquerque is an important factor in determining the feasibility of fire-based transports by the Albuquerque Fire Department. In the future there may be as many as four transport capable organizations (one public and three private) bidding for the EMS transport contract in the City of Albuquerque, such as: AFD, AAS, AMR, and Superior Ambulance. "The private sector is not inherently more efficient or more responsive than the public sector; it is the competition that is found . . . [that]

creates incentives to increase efficiency and lower costs" (Aronson & Schwartz, 2004, p. 347). Today, AAS is the contracting and billing transport service for the City of Albuquerque.

In the State of New Mexico all billed ambulance transport charges are based off approved tariffs by the PRC; however, the PRC has also established a general State approved tariff if an ambulance service does not have their own. Ambulance tariffs are broken down into eight billing categories. These billing categories include: BLS non-emergency, BLS emergency, ALS 1 non-emergency, ALS 1 emergency, ALS 2 emergency, specialty care transport, patient evaluation, and dedicated stand-by charges—each category also includes a transport mileage charge (PRC Tariff, n.d., pp. 1-2). In fact, the EET survey confirms the nationwide use of tariffs with 67.8% (63) of participants using one (see Figure 1).

22. What type of Tariff does your organization use for transport charges?		
Answer Options	Response Percent	Response Count
State Tariff	44.1%	41
Modified State Tariff	2.2%	2
Organization's Personal Tariff	21.5%	20
We provide transport, BUT do not Bill	6.5%	6
N/A, we do not provide transport, nor Bill	17.2%	16
Other (please specify)	8.6%	8

Figure 1. EFO EMS Transport Survey - Question 22, (Survey Monkey [S.M.], 2013)

The Ambulance billing rates in the City of Albuquerque are based off the PRC approved AAS transport tariff. The AAS Tariff billing charges includes the following: BLS non-emergency - $393.75, BLS emergency - $625, ALS 1 non-emergency - $437.50, ALS 1 emergency - $670, ALS 2 emergency - $750, specialty care transport - $846, patient evaluation - $100, dedicated stand-by - $115, medical team transport - $100 and mileage - $12.81 per mile (AAS Tariff, n.d., p. 1).

The first half of the research question, how many EMS 911 transports are produced in the City of Albuquerque each year, is answered with the following: The City of Albuquerque is currently averaging *45,578 transports a year*—based on the last 3 years, 2010 – 2012 (see Appendix J, Table 1A) (AFD Chief's Report, 2013, p. 4; K. Krumperman, personal communication, August

8, 2013; K. Isselhard, personal communication, June 17, 2013). Table 1A displays the average number of EMS calls and transports in the City of Albuquerque.

Table 1A

City of Albuquerque Total EMS Call Volume and Transports for 2010 – 2012

Year	EMS Calls	AAS Trx	AFD Trx	Total Trx
2010	59,429	43,489	200	43,689
2011	60,917	45,034	250	45,284
2012	63,272	47,622	139	47,761
Yearly Averages	**61,206**	**45,382**	**196**	**45,578**

Note. Transport has been abbreviated as Trx, (Soto, 2013)

The second half of the research question, what are the associated charges from billing transports, *could not be answered.* Unfortunately, AAS could only provide a final 2012 year-end financial statement with one total revenue amount for all transports in Bernalillo County, which includes more than just Albuquerque (see Figures 4 and 5 for views of Bernalillo County).

The results from personal interviews, written reports and documents, the EET survey, and one standard provided information to answer the second research question: *Does the Albuquerque Fire Department have the resources to provide fire-based transports to all EMS patients right now?* Presently, AFD responds to specified 911 calls with 19 Type I Medium Duty rescue ambulances, staffed with two paramedics (57 Lieutenants and 57 Drivers), on three shifts, and does not transport; but can AFD provide transports to all their patients with those numbers? Today, more and more fire departments are being asked to join the public marketplace in order to help their cities over-come financial difficulties. Currently, ". . . management [is] thrusting public service-delivery organizations into the private marketplace, where they must function as business enterprises . . ." and research suggests that fire departments are filling the revenue need with transports (Osborne, 2007, p. 6). Conferring with the EET survey, 51% (49) of fire department participants are providing patient transports right now (see Figure 2).

15. Does your organization provide EMS transport?		
Answer Options	Response Percent	Response Count
Yes, Fire-Based EMS	51.6%	49
No, Fire-Based EMS	25.3%	24
Yes, Private Ambulance Service	6.3%	6
Yes, Hospital-Based Ambulance Service	3.2%	3
Yes, Municipal Third-Party Ambulance Service (city owned	13.7%	13

Figure 2. EFO EMS Transport Survey - Question 15, (S.M., 2013)

Presently, the contracted EMS transport service, AAS, responds to over 100,000 calls a year, for all EMS services, with a fleet of over 55 ambulances and a staff of more than 250 paramedics and EMTs (PHS, n.d., para. 3). On average, AAS has 26 ambulances, 14 during slow hours and 38 during *peak hours* (busiest hours), deployed strategically throughout the City of Albuquerque to efficiently respond to calls for services (PHS, n.d.). Theoretically, using the number of AFD rescues, 19, and the average number of patient transports in Albuquerque each year, 45,578, one can assume AFD's rescues would each average 2,398 transports a year—a large number (see Appendix K, Table 1B) (AFD Chief's Report, 2013, p. 4; K. Krumperman, personal communication, August 8, 2013; K. Isselhard, personal communication, June 17, 2013). However, using the average number of AAS units, 26, and the average number of AAS emergency 911 transports in the City of Albuquerque, 45,381, one can infer that the AAS average number of transports a year per unit is 1,745—still a large number (see Table 1B).These large transport numbers are important to resource numbers by virtue of time out-of-service or *turnaround time* (TAT). Simply put, a small resource pool equals longer TAT times, and vice-versa. Turnaround time begins when a transport ambulance, with patient, arrives at the emergency department (ED) and ends when the ambulance is back in service (Flomenbaum, 2013, page 4). Studies have shown that TAT time is between 30 and 45 min—this does not include response, scene, or transport times (Flomenbaum, 2013, page 4; Hammill, 2013). For the purpose of projected outlooks, 1hr will be used to represent the average TAT time. Therefore, one EMS transport is equal to 1 hr of TAT time (1 transport = 1 hr TAT). Taking AFD's theoretical transport number and TAT time of

2,398 (2,398 transports = 2,398 hr TAT) and dividing it by one calendar year (365) will equate to each rescue potentially being out-of-service for 6 hr 34 min a day (2398/365 = 6.56 = 6 hr 34 min) (see Table 1B). Six and a half hours a day out-of-service is a long time, so how does that affect response times?

Table 1B

AFD Projections on Providing All Patient Transports

	AFD Proj. All Transports	versus	**ASS Current Average**
Time	*Using the 3 Year Av. 2010-2012		*AAS 3 Year Av. 2010-2012
Population	555,417		555,417
Total Transports (Trx) 2012	45,578		45,381
Average Trx Units on the Streets	19		26
Total EMS Calls	63,272		63,272
Percentage of Transports	100%		99.70%
Average Yearly Trx per Unit	2398.84		1745.42
Average Daily Trx per Unit	6.57		4.78
Average TAT per Unit (using 1hr)	6hr 34min		4hr 47min

Note. Transport has been abbreviated as Trx, (Soto, 2013)

Fire-based transports require the right amount of resources strategically placed throughout a response area. A *2012 Geographic Information System (GIS) Emergency Services Response Capabilities Analysis* was completed for the Albuquerque and Bernalillo County Fire Departments by the IAFF at the request of L244. The GIS analysis map, Figure 3, uses current street and road systems in Albuquerque, and displays the AFD ALS rescue response areas. The blue areas meet the recommended 8 min or less response time per *NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, 2010 Ed*; however, the small red pocket areas do not. Specifically, the travel times for ALS units to EMS 911 calls must be 8 min travel time or less, 90% of the time. "When provided, the fire department's EMS . . . ALS

shall be deployed to provide for the arrival of an ALS company within a 480-second [8 min] travel time to 90 percent of the incidents . . .” (NFPA 1710, 2009, p. 10).

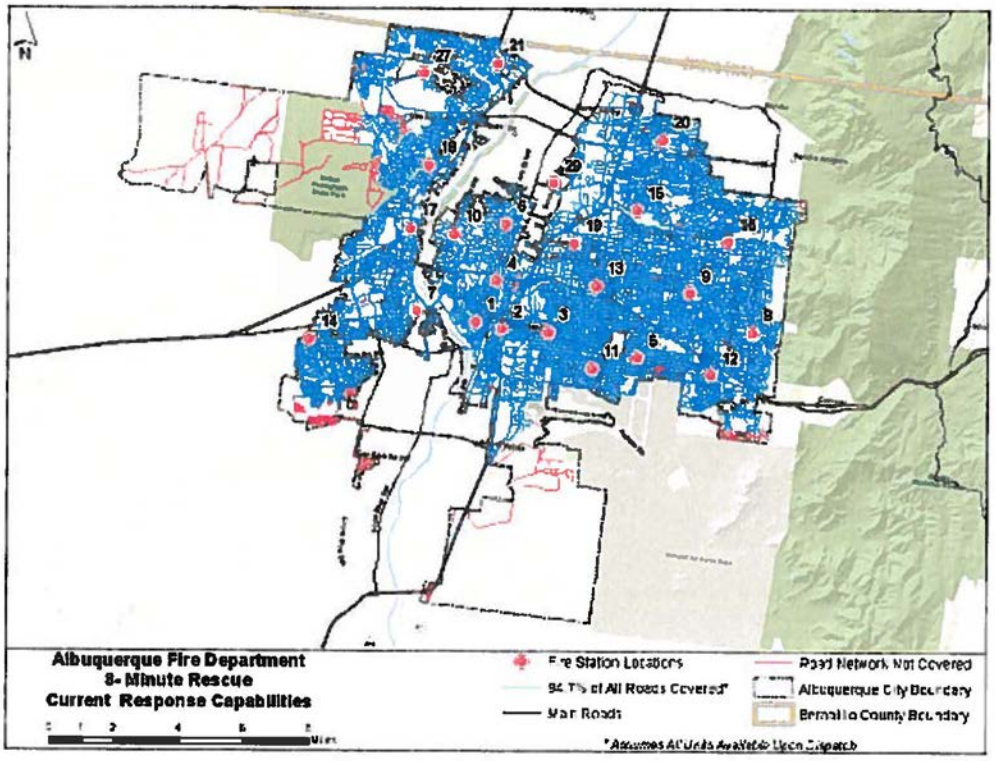

Figure 3. AFD 8-Minute Rescue Current Response Capabilities, (IAFF GIS, 2012, p. 72)

Currently, AFD meets the NFPA 1710 ALS response time with Code 3 responses and mutual aid; however, responses can still be affected by traffic, weather, multiple 911 calls, time of day, or unforeseen conditions.

An additional GIS was provided in 2012 from the Matrix Consulting Group. The *2012 Final Report on the Organizational Design Project* was requested by the City of Albuquerque and displays a GIS map, Figure 4, with 4 min (yellow) and 8 min (gray) NFPA 1710 response times in comparison to current and projected AFD fire stations. The red pocket areas on the IAFF GIS map match the same non-colored areas on the Matrix Report GIS; together, both maps conclude that additional AFD rescues are needed in those areas.

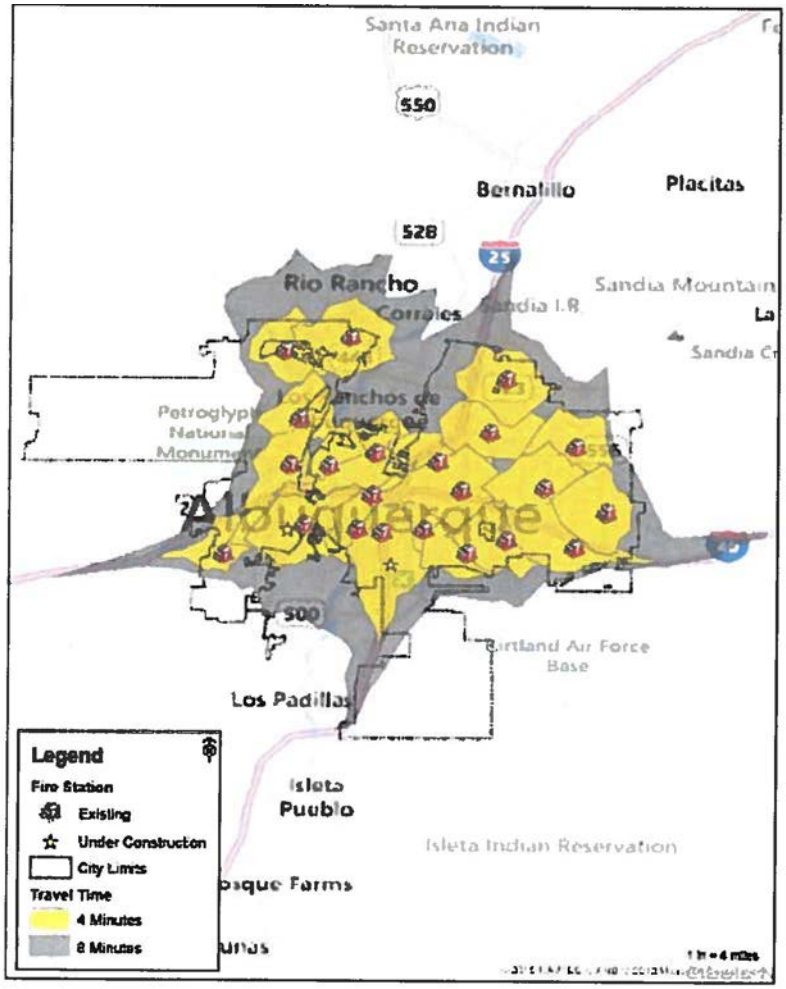

Figure 4. Travel Time Capability - Existing & Future AFD Fire Stations, (Matrix, 2012, p. 323)

The Matrix Report also provides important data on the amount of resources needed for EMS responses based on call numbers. Specifically, there are industry benchmarks for the capacity of unit effectiveness; the benchmark number is 3,500 calls for service annually for a single unit, at which point an agency must make critical decisions regarding the ability to effectively provide services to the community (Matrix, 2012, p. 320). Using response numbers for 2011 and 2012, AFD has five rescue units exceeding the 3,500 calls per year *threshold*—Rescues 3, 5, 11, 12, and 13 (Matrix, 2012, p. 320; AFD Chief's Report, 2013, p. 2). In 2012, two AFD rescues, 5 and 11, surpassed the 110% threshold value—3,850 calls per year (AFD Chief's Report, 2013, p. 2). The Matrix Report used the Commission on Fire Accreditation International

(CFAI) system's solution guide based on call volumes for service thresholds. The solutions for units at their threshold value (3,500 calls) are: increasing the capacity of adjacent units, increasing-decreasing mutual aid, implementing peak staffed units, redeploying resources to problem areas, and relocating existing fire stations (Matrix, 2012, p. 320). The solutions for units above the 110% threshold value (3,800 calls) are: adding new resources to stations, adding new resources to adjacent stations, and adding new stations (Matrix, 2012, p. 320). Of note, in 2011 and 2012, AFD Engine Companies 5, 11, and 12 were also over the threshold values.

In order to learn more about the resources needed for fire-based transports two interviews were conducted. The first interview was with Tucson Fire Department (TFD) Captain Franchot Opela. Captain Opela was asked how TFD initially discovered how many resources were needed to provide fire-based ALS transports (a subset of the patient population). Captain Opela explained that a GIS study of the City of Tucson was used initially to discover the resources needed for transport (F. Opela, personal communication, July 27, 2013). He went on to state that GIS studies are used continually in order to meet the NFPA 1710 standard (F. Opela, personal communication, July 27, 2013). He also stated that once a unit's response numbers are above 3,500 calls per year, an additional rescue must be staffed in the same area—this has occurred twice at TFD (F. Opela, personal communication, July 27, 2013). Currently TFD transports all ALS patients while the contracted ambulance company, Southwest Ambulance (SA) transports all BLS patients. In 2012, TFD transported 19,378 times (46%) with 18 rescues and SA transported 22,451 times (54%) with 22 units; that is 1,076 transports per TFD rescue and 1,020 transports per SA ambulance, respectively (see Appendix K, Table 2B) (F. Opela, personal communication, July 27, 2013). The TAT time is 2 hr 57 min and 2 hr 48 min per TFD rescue and SA unit, respectively (see Appendix K, Table 2B).

The second interview on the resources needed for fire-based transports was conducted with Rio Rancho Fire Department (RRFD) Deputy Chief Paul Bearce. The City of Rio Rancho is

populated with 90,818 residents and Chief Bearce was asked how many rescues were needed to provide transport to all RRFD 911 patients (U.S. Census Rio Rancho, 2012). Chief Bearce stated that RRFD uses historic run data to determine where and when units are needed for daily operations; if RRFD needs more than their standard five transport rescues during peak hours, they have the resources to put four more rescues into service (P. Bearce, personal communication, August 6, 2013). In 2012, RRFD transported 4,677 times with five to nine rescues; that is 935 to 520 transports per rescue, respectively (see Appendix K, Table 2B) (P. Bearce, personal communication, August 6, 2013). Based on RRFD's five rescues, the TAT time is 2 hr 34 min per unit (see Appendix K, Table 2B).

The information gathered to answer the research question was quite compelling. A fire-based transport system requires the right number of front-line resources strategically placed throughout a response area. Finding the right number of response units depends on a GIS, NFPA response times, and low turnaround times (TAT). Currently, AFD has ALS response areas above the 8 min NFPA 1710 time frame, plus five rescues above the 100% call number threshold value (two above the 110% threshold value), and a TAT time for all transports that would exceed 6 hr 34 min a day per unit. Right now, the Albuquerque Fire Department *does not* have the resources to provide fire-based transports to all EMS patients.

The results from the ASC contract, personal interviews, written documents, and the EET survey provided information to answer the third research question: *What are the circumstances of the ASC contract between AFD and AAS and what could prohibit the implementation of a fire-based transport service?* "An often overlooked aspect of EMS privatization is the profit enhancement or service subsidy that municipalities provide to private ambulance corporations . . . in the form of system essentials provided to private companies by local fire departments" (IAFF [Monograph 1], 1997, p. 8). System essentials include: decreased response times (10 to 12 min responses 90% of the time), reduced overhead (less ambulances needed), and enhancing profits by

reducing costs of service (using fire department personal and equipment) (Monograph 1, 1997, p. 8). Today, several fire departments still use ambulance services for EMS transports. According to the EET survey, 42 ambulance service organizations currently provide patient transports for fire departments—the *other* option was investigated, those responses were also ambulance service organizations (see Figure 5).

16. If your organization does not transport then who does?		
Answer Options	Response Percent	Response Count
Private Ambulance Company	45.2%	19
Hospital-Based Ambulance	7.1%	3
Third Party Ambulance (city owned and operated)	9.5%	4
Other (please specify)	38.1%	16

Figure 5. EFO EMS Transport Survey - Question 16, (S.M., 2013)

In order to answer the research question, some background and future information was needed on the ASC contract and the City of Albuquerque. Consequently, an interview was conducted with both the City of Albuquerque Director of Finance & Administrative Services Lou Hoffman and City of Albuquerque Attorney David Tourek. While the current contract was the first of its kind, further contracts, conceded by the interviewees, will require significant financial changes (L. Hoffman, & D. Tourek, personal communication, August 20, 2013). The interviewees also stated that the city needs to begin the process of negotiating a new contract with AAS right now, laying out the expectations the city aims to receive with a *Request for Proposal* (RFP) (L. Hoffman, & D. Tourek, personal communication, August 20, 2013). If the city is not satisfied by the negotiations with AAS, then the city will open up contract negotiations, and the RFP, to all ambulance transport services in order to receive the best offer (L. Hoffman, & D. Tourek, personal communication, August 20, 2013). At this time, the interviewees believe the city can acquire more revenues from a new ASC contract and *not through fire-based transporting*. However, the City of Albuquerque must be careful to follow the current ASC contract for the sake of avoiding legal issues.

In the past, government agencies provided EMS but contracted out patient transports to private ambulances (IAFF [Monograph 3], 1997, p. 7). Today, EMS is provided by most fire departments across the country, parallel to the EET survey, where 97% (98) of all participants currently provide EMS services to their communities (see Figure 6). Nonetheless, government agencies have decided to take back revenue making patient transports and must consider the ramifications when contracts are in place. In recent years, three types of litigation have been filed to prevent a municipality from taking back its own EMS and patient transports—antitrust litigation, jurisdictional right to provide, and qui tam suits (Monograph 3, 1997, p. 8). So where does this information leave AFD in regard to the ASC contract?

5. Does your organization provide emergency medical services (EMS)?		
Answer Options	Response Percent	Response Count
Yes	97.0%	98
No	3.0%	3
Other (please specify)	0.0%	0

Figure 6. EFO EMS Transport Survey - Question 5, (S.M., 2013)

The first half of the research question, circumstances of the AFD ASC contract with AAS, is answered with the following: the ASC (2012) is between the Bernalillo County Health Care Corporation (Presbyterian-AAS), and the City of Albuquerque (p. 6). The contract went into effect on April 28, 2012 and shall continue for 24 months, unless altered by a subsequent agreement or terminated due to the failure of contracted terms (ASC, 2012, p. 6). Termination of the contract can occur in two ways: 1) *Material Breach*, willful failure of services or willful falsification of any data required from the contract, or 2) giving 180 days advanced written notice of termination with no cause (ASC, 2012, pp. 7-8). The contents of the ASC contract covers: Recitals; Definitions; Agreement Provisions; and Sections A, B, and C; Section A applies to AAS' responses and performance standards, Section B concerns the AAS fees for utilization of the City of Albuquerque's Computer Aided Dispatch (CAD) System, and Section C covers reimbursements by AAS for the use of AFD personnel riding along to the hospital.

Financially, AAS is contracted to pay a fee to the City of Albuquerque for services rendered by AFD and specified penalties. Penalty fees ($1,000 - $20,000) include costs associated with *Non-Compliance*—a failure to maintain a 90% or better emergency 911 response time for Priority 1 (10 min) and Priority 2 (13 min) dispatches (ASC, 2012, pp. 2, 4, 10). The AAS ASC contract service charges include: $37,357 for annual maintenance costs associated with use of the CAD; medical supplies used on emergency scenes by AFD that would have been used by AAS are to be replaced on a monthly basis by AAS; $500 for each AFD transport above 1% of the total volume of calls for EMS responses received by AFD in a *Reporting Period*—one calendar month, beginning on the first day and ending on the last day of the same month (ASC, 2012, pp. 2, 4, 13). Further financial reimbursement from city paramedics or EMTs accompanying AAS personnel on patient transports will be received on a quarterly basis ($36.44 up to $52.55, depending on rank); and finally, a one-time payment of $2,000 for licensing rights and software (ASC, 2012, pp. 14, 16). Based on the ASC contract, potential yearly revenue can be as high as $200,000 for the City of Albuquerque (ASC, 2012).

The second half of the research question can be answered with the following: prohibitions with the ASC contract affecting the implementation of fire-based transports by AFD surround AAS' transport certificate, *Certificate of Convenience and Necessity (CCN),* No. 1168, issued by the NM State Corporation Commission in 1974 (ASC, 2012, p. 1). The NM State Corporation Commission is now the NM PRC and since 2007 the use of the title, Certificate of Convenience and Necessity, has ceased. The CCN is now simply titled, *Certificate* (R. Jerman, personal communication, June 20, 2013). However, for the purposes of this paper, CCN will continue to be used as the acronym for both the old and new titles of the ambulance transport certificate. The CCN owned by AAS authorizes them to provide emergency 911 ambulance transport services throughout New Mexico, but specifically in Bernalillo County and Sandoval County—their primary response areas (ASC, 2012, p. 1). The ASC contract stipulates that emergency 911

transport units must follow the guidance of the City of Albuquerque EMS Authority Ordinance (EMS Ordinance). The City of Albuquerque EMS Ordinance; Ordinance No. 25 – 1999, Chapter 9: Health, Safety, and Sanitation; Article 4: Public Safety Police, Fire and EMS; Part 4: EMS Authority; prohibits emergency and non-emergency patient transports by ambulance services without a CCN. The Albuquerque Fire Department does not have a CCN, but is allowed to transport patients, free of charge, when medically necessary, when determined by medical control, or by previously written protocol (EMS Authority Ordinance [1999]).

Results from NM statutes, governing bodies, personal interviews, an ordinance, and a questionnaire provided information to answer the fourth research question: *What oversight does the State of New Mexico have on ambulance transports in Albuquerque?* There are several NM laws and governing bodies with oversight on ambulance transports in Albuquerque, including: NM State Statutes: Motor Carrier Act of 1978, Ambulance Standards Act of 1978, and the Emergency Medical Services System Act of 1978 (EMS Act); governing bodies include: NM Public Regulation Commission; NM Department of Health, and the City of Albuquerque. Each NM law and governing body, as it applies to ambulance transports in Albuquerque, will be covered more specifically, thus answering the research question.

The NM Motor Carrier Act of 1978, Chapter 65, Article 2A, states that it is the policy of NM to foster the development, coordination and preservation of a safe, sound and adequate motor carrier system, requiring financial responsibility and accountability on the part of motor carriers through state licensing and regulation of motor carriers. The NM Motor Carrier Act (1978) is broken down into 35 sections and covers all intrastate (land and water) transportation concerns and needs. Within the NM Motor Carrier Act (1978), references to ambulance statutes (the generic name for all patient transport vehicles) are covered in Sections: 2 – Definitions, 7 – Certificate for Passenger Service, 9 – Permits, 12 – Protests, and 18 – Financial Responsibility.

While the areas covering compensated ambulances in the NM Motor Carrier Act (1978) do not apply to AFD, statute oversight *does* apply to ambulance transports in Albuquerque.

The NM Ambulance Standards Act (1978), Chapter 65, Article 6, applies to all motor vehicle and watercraft ambulances designed and used for the compensated transportation of sick or injured persons in NM. There are six sections within the NM Ambulance Standards Act (1978) and all cover ambulance statutes, including: 1 – Short Title, 2 – Definitions, 3 – Legislative Purpose, 4 – Corporation Commission [PRC] Duties, 5 – Applicability of Act, and 6 – Exceptions. The NM Ambulance Standards Act (1978) was implemented in order to provide uniform standards of design, equipment, and operation of compensated ambulances; and to ensure high standards of competence by the service providers in NM. Section 6 – Exceptions, applies to ambulances used primarily for gratuitous (free) transports during an emergency or for the transport of its sick or injured employees (Ambulance Standards Act, 1978). At this time, the Ambulance Standards Act (1978) does not apply to AFD, as they are an exception; however, the NM statute *does* provide oversight to ambulance transports in Albuquerque.

The PRC, Transportation Division, Applications / Compliance Bureau, is the governing body of all compensated Ambulance Services in NM—land, air, or water. Their authority comes from the Ambulance Standards Act (1978), Section 4 – Corporation Commission [PRC] Duties. Since all compensated ambulance services in NM falls under the PRC, they also fall under the Ambulance Standards Act (1978). With the authority to make policy, the PRC has issued transportation rules for compensated ambulance services in NM, specifically: Title 18 – Transportation and Highways, Chapter 3 – Motor Carrier General Provisions, Part 14 – Ambulance Services; which establishes the requirements for ambulance services in NM (Motor Carrier Rules, 2002/2005). The PRC processes all compensated transportation services in the State, including operating authorities based on certificates; *permits* (transport contracts); *endorsements* (updating

transport CCN or contract changes); *temporary authorities* (temporary transport CCN); and tariffs.

Title 18 regulates common carriers with: standards on vehicle design, health and safety equipment, operational procedures, annual inspections, and licensures of all ambulance drivers and attendants (Motor Carrier Rules, 2002/2005). While a CCN is not needed to transport, it is needed to charge for the transport. Simply put, an Ambulance service, fire-based or not, cannot charge for a transport without a transport certificate (CCN). A fire department (AFD) that does not bill for a patient transport does not need a CCN and therefore does not fall under the PRC. Instead, non-compensated fire departments fall under the NM Department of Health (NM DOH) and must follow the NM EMS Act (1978). The interview with PRC Transportation Director, Ryan Jerman, answered the research question more thoroughly. Director Jerman explained that the CCN is only issued to Ambulance services or fire departments that transport patients for compensation, stating:

> No one can provide compensated transport ambulance services without getting approval from the Commission and that is in the form of a certificate, it tells them where they can work and what they can do. For example, if the certificate is only for emergency transports then the holder of the certificate can only transport that type of patient; they cannot transport inter-facility patients or non-emergencies. (R. Jerman, personal communication, June 20, 2013)

At this time, the PRC does not apply to AFD, as they cover compensated ambulances; however, the NM governing body *does* provide oversight to ambulance transports in Albuquerque.

The NM EMS Act (1978), Chapter 24 – Health and Safety, Article 10B, is the EMS Service Certification Program that establishes operational, health, medical, equipment and safety standards for EMS agencies not regulated by the PRC. The NM EMS Act (1978) was implemented with the purpose of providing uniform standards of design, equipment, and operation of non-

compensated ambulances and to ensure high standards of competence by the service providers in NM. Currently, AFD must comply with the NM EMS Act (1978) and the NM statute *does* provide oversight to ambulance transports in Albuquerque.

The NM Department of Health (NM DOH), Division of Epidemiology and Response, EMS Bureau, is the governing body of all non-compensated Ambulance Services in NM. The NM DOH is granted the authority to establish all standards for non-compensated EMS agencies by the NM EMS Act (1978). With the authority to make policy, the NM DOH has issued the rules for non-compensated EMS agencies in NM, specifically: Title 7 – Health, Chapter 27 – Emergency Medical Services, Part 10 – Certification of Emergency Medical Services Agencies. Title 7 establishes standards, processes, and procedures for the certification and enforcement of EMS agencies that conduct non-compensated operations within NM (Emergency Medical Services [DOH], 2010). Non-compensated organizations in NM include: fire departments, transport and non-transport capable medical rescues, search and rescue units, EMS dispatch services, and special event EMS agencies. In a questionnaire completed by NM DOH EMS Program Manager Charles Schroeder, Manager Schroeder stated that Title 7 applies to any EMS Agency not covered under the PRC Ambulance Service rule; this includes non-billing fire departments (C. Schroeder, personal communication, July 8, 2013). EMS Program Manager Schroeder went on to state, "EMS Agency oversight (medical rescues) moved to the Department of Health, EMS Bureau in 2003, under the Emergency Medical Systems Act. The Emergency Medical Systems Act cites the duties of the EMS Bureau under Section 24-10B-4, NMSA 1978" (C. Schroeder, personal communication, July 8, 2013). Currently, AFD falls under the direction and law of the NM DOH and the governing body *does* provide oversight to ambulance transports in Albuquerque.

The City of Albuquerque was given authority to implement city laws (ordinances) in 1917, by the State of NM, and therefore has direct oversight on the billing and non-billing of

ambulance services in its jurisdiction (American Legal, n.d., para. 2). The EMS Ordinance was established to protect the safety and health of the public through pre-hospital emergency care, to ensure the consistency of ambulance transport services, and to enact reasonable rates for the costs of dispatch, consumable medical supplies, and staff in the performance of transport duties (EMS Authority Ordinance [1999]). The direct need for a CCN to transport patients applies to all transport providers working in the City of Albuquerque; "Ambulance Transport Provider – Any vehicle, including motor vehicles, watercraft, and aircraft, assigned, used, or intended to be used to transport sick or injured persons, . . . [with] an ambulance service certificate. . ." (EMS Authority Ordinance [1999]). The Albuquerque Fire Department is currently under the jurisdiction and authority of the City of Albuquerque and the EMS Ordinance. Ordinance oversight *does* apply to ambulance transports in Albuquerque.

The results from personal interviews, questionnaires, written sources, the EET survey, and an information table provided an answer to the fifth research question: *What patient(s) can the Albuquerque Fire Department transport for revenue?* There are several different subset patient populations that can be transported to local hospitals, but they generally surround one of three types: ALS, BLS, and MVA. According to the EET survey only a very small portion of transport organizations provide transport to a subset patient population. In fact, 63.8% of surveyed organizations transported every patient; while only 3.2% transported a subset population (see Figure 7). However, a fire department that transports a subset patient population can still be a successful transport organization based on the revenue generated from services rendered.

19. Does your organization transport all EMS calls or just a specified population? (MVA, AMI, etc.)		
Answer Options	Response Percent	Response Count
Yes, every call	63.8%	60
No, we only transport a specified population	3.2%	3
N/A, we do not provide transport	19.1%	18
Other (please specify)	13.8%	13

Figure 7. EFO EMS Transport Survey - Question 19, (S.M., 2013)

For example, the City of Tucson is the 33rd largest U.S. city with a population of 525,295 and TFD provides transport, successfully, to a subset patient population (U.S. Census Tucson, 2012). Tucson Fire Department's 18 paramedic transport units, staffed with two paramedics, transport all ALS patients (City of Tucson, n.d.). During the interview with Captain Opela, he stated that TFD started transporting for better quality control over equipment and personnel, and to recover EMS costs. Since the inception of ALS transports, TFD's cost recovery for their city's General Fund has been $6 - $8 million, on average, per year ($361 a transport) (F. Opela, personal communication, July 27, 2013). In 2012, TFD responded to 70,993 EMS calls and successfully transported 19,378 patients (F. Opela, personal communication, July 27, 2013).

While not specifically transporting a subset of the patient population, or large numbers of patients in general, the City of Rio Rancho, NM is very successful in generating revenue for their General Fund. The RRFD provides almost all EMS transports for its residents except inter-facility transports. In 2012, RRFD responded to 6,159 EMS 911 calls, and transported 4,677 patients for $1.6 million in General Fund revenues ($342 a transport) (P. Bearce, personal communication, August 6, 2013). Most fire department revenues are streamlined into their individual city's general funds. According to the EET survey, 42.7% (38) of participating organizations provided their General Fund with their transport revenue (see Figure 8).

27. Who receives the transport revenue money?		
Answer Options	Response Percent	Response Count
General Fund	42.7%	38
Fire Department	18.0%	16
N/A, we do not Bill	25.8%	23
Other (please specify)	13.5%	12

Figure 8. EFO EMS Transport Survey - Question 27, (S.M., 2013)

Over the last 3 years EMS calls have grown in the City of Albuquerque, more importantly, the call volumes have been consistent, providing a future in fire-based transport revenue (see Appendix J, Table 2A). In fact, the 2010 – 2012 AFD call volumes and transport averages for ALS, BLS, and MVA calls are 24,390; 36,682; and 5,513, respectively (see Table 2A) (K. Isselhard, personal communication, June 17, 2013). While AAS could not provide a better breakdown of their ALS and BLS transports, the 3 year transport average for all EMS calls is 75%, with MVA patients transported 50% of the time (see Table 2A) (K. Krumperman, personal communication, August 6, 2013). With three-fourths of patients going to the hospital, AFD has great opportunity to transport a subset of the patient population to for revenue, but which one(s)?

Table 2A

City of Albuquerque Subset Patient Population Totals for 2010 – 2012

Year	BLS Calls	ALS Calls	MVA Calls	MVA Trx	Total Trx
2010	35,429	24,000	5,424	2,659	43,689
2011	36,127	24,389	5,305	2,672	45,284
2012	38,491	24,781	5,809	3,068	47,761
Yearly Averages	**36,682**	**24,390**	**5,513**	**2,800**	**45,578**

Note. Transport has been abbreviated as Trx, (Soto, 2013)

Transporting a subset of the patient population requires the right number of patients, transports and transport units, as well as consistent revenues and availability. Combining the overall transport revenues of TFD and RRFD ($7M = $1.6M = $8.6M) and dividing it by their overall transport number (19,378 + 4,677 = 24,055) reveals an average *net revenue* of $357 per

transport ($8.6M/24,055 = $357)—clearly indicating revenues can be made with subset patient population transports (see Appendix K, Table 2B).

Future AFD transport numbers and revenues can be projected in order to find the best subset patient population to transport. By multiplying the combined average TAT time of TFD; SWA; AFD; AAS; and RRFD (2 hr 40 min or 2.67) with AFD's 19 rescues, reveals that AFD can transport up to 18,516 patients per year (2.67 x 19 x 365 = 18,516) without being out-of-service for too long. However, by providing all MVA patient transports (2,800) and at least two ALS rescue transports a day, AFD can transport 16,670 patients a year [(2 x 19 x 365) + 2,800 = 16,670] and have a minimal TAT time of 2 hr 24 min (see Appendix K, Table 2B).

Right now, AFD *can transport MVA and ALS subset patient populations for revenue.* The projected transport revenue for all MVA patients and two ALS patients a day are $1.87 million and $9.29 million, respectively (see Appendix L, Table 3C). The AFD Tariff used in the equations are the same ALS 1 transport charge ($670) from the AAS Tariff.

Table 3C

Projected AFD MVA & ALS Transport Revenues, Based on ALS 1 Emergency Transport Cost

Option 3 – MVA & ALS Patient Transports	NM Tariff ($494)	Average Tariff ($582)	AFD Tariff ($670)**	Currently No Tariff
Projected MVA Transport Gross Charges*	1,383,200.00	1,629,600.00	1,876,000.00	
Projected ALS Transport Gross Charges***	6,851,780.00	8,072,340.00	9,292,900.00	
Projected Net Revenues from Transports added to CABQ General Fund****	5,352,737.00	6,306,261.00	**7,259,785.00**	267,524.61
Cost of 1 Rescue (unit plus all Fire & EMS equipment) per year for replacement	267,524.61	267,524.61	267,524.61	138,831.45
Total Yearly EMS Expenditures for 19 Rescues	138,831.45	138,831.45	138,831.45	30,000.00
EMS Division Revenues	30,000.00	30,000.00	30,000.00	200,000.00
ASO Revenue ≈ $200,000 **(have not recovered any ASC reimbursement from AAS)**	200,000.00	200,000.00	200,000.00	6,468,396.48
Salaries for all assigned Rescue Personnel	6,468,396.48	6,468,396.48	6,468,396.48	3,686,985.99
Fringe Benefits for all assigned Rescue Personnel	3,686,985.99	3,686,985.99	3,686,985.99	172,602.46
Average Total Yearly Maintenance Costs for all 19 Rescues	172,602.46	172,602.46	172,602.46	141,426.31
Average Total Yearly Fuel Costs for all 19 Rescues	141,426.31	141,426.31	141,426.31	($10,506,935.85)
Net Gain/Net Loss	($5,293,030.30)	($4,339,506.30)	**($3,385,982.30)**	**($10,506,935.85)**
Unit Cost per AFD 911 Incident for 2013			$889.00	
Current Total AFD Budget for 2013			$70,390,000.00	
Current Total AFD EMS Budget for 2013			$320,000.00	
*50% of the MVA emergency 911 calls- 147 transports per year per Rescue				
**Projected AFD Tariff - Identical to AAS Tariff				
***2 mandatory ALS transports a day per Rescue- 730 trx per year per Rescue				
****16,670 total yearly AFD transports - 877 trx per year per Rescue				

Note. Transport has been abbreviated as Trx, (Soto, 2013)

By providing 16,670 transports a year (877 transports per rescue a year), AFD can produce $11.17 million in *gross charges* for the city's General Fund ($1.87M + $9.29M = $11.17M) (see Table 3C).

Discussion

The purpose of this research project was to determine whether fire-based transports by the Albuquerque Fire Department could be a possible future source of revenue for the City of Albuquerque's General Fund. Projected transports and associated revenues were created using a cost versus time versus revenue analysis. The answers accumulated through new research are supported by the literature review and have provided many factors that must be considered, discussed, and resolved further, before any actions can be approved. The research can only provide a guide to what is possible and what is not. The City of Albuquerque must consider their role in the future of EMS and whether financial value can be accomplished using the results of this research paper. City officials must also forecast the after-effects of possible EMS changes to current EMS service providers and taxpayer expectations. The interpretation of the research provided in this paper is clear—the Albuquerque Fire Department *can feasibly* provide fire-based transports.

The data provided by the first research question revealed consistent EMS transport numbers in the City of Albuquerque; however, the billing fees for those transports could not be answered factually. With 45,578 transports a year, there is certainly room and possibilities for future fire-based transports. The correlation between Albuquerque's yearly transport numbers and those presented by the *2006 JEMS 200-City Survey* for the same sized cities, 44,133 transports, signifies a consistent and dependable number of transports to begin fire-based transport operations (Williams, 2007, p. 42). In fact, comparing the percentage of yearly transports versus EMS calls in Albuquerque, 75%, with the 2009 U.S. percentage, 78%, one can assume that transport numbers will remain consistently high (FIC EMS, 2012, pp. xii, 429). Plus,

a future involving Obamacare tends to lead this author to believe that transport percentages, already in the 75% to 78% range, will continually grow in the years to come.

Since AAS could not divulge their exact transport charges (or revenues), causing this portion of the first research question to go unanswered, this author has chosen to forecast AAS' transport revenues in order to provide a probable answer to this portion of the research question. The AAS 2012 financial spreadsheet for Bernalillo County indicated that AAS produced 93,414 transports in 2012 with a gross charge of $37.62 million, a *net charge* of $30.49 million, and net revenues of $19.25 million (K. Krumperman, personal communication, August 6, 2013). Simply put, AAS' gross charges and net revenues per transport are $402 and $206, respectively (see Appendix K, Table 2 B). Using AAS' transport revenue numbers with the yearly Albuquerque transport number, 45,578, and the projected transport revenue for AAS' is revealed: $18.36 million in gross charges and $9.4 million in net revenue (see Appendix K, Table 2B). A correlation between Albuquerque's yearly projected transport charges (and revenues) and those gathered from the Lima Fire Department (LFD) and the Fire Department of New York (FDNY) can be affirmed. The Lima Fire Department's yearly soft billing gross charges and net revenues per transport unit is $207 (Lima FD, 2012, pp. 15-16); and in 2012, FDNY provided 983,247 patient transports for a gross charge of $515 per transport and net revenue of $205 per transport (Hotz, 2012, p. 1; FDNY, n.d.). Overall, transport numbers and associated billing charges will definitely bring the City of Albuquerque needed revenues.

The evidence gathered from the second research question indicated that the Albuquerque Fire Department does not have the resources to transport all patients right now in the City of Albuquerque. A fire-based transport system requires the right number of front-line resources strategically placed for standard response times and TAT time. Current AFD ALS response areas are above the 8 min NFPA 1710 Standard, five rescues are above the call volume threshold value (two above the 110% threshold value of 3,850 calls), and a projected TAT time would exceed 6

hr 34 min a day per unit. The City of Albuquerque's inability to transport all patients with current resources correlates with those presented by the ICMA's Final Report: Fire and Emergency Medical Services on Las Vegas Fire and Rescue (LVFR). The ICMA report states that LVFR is not transporting enough patients to warrant continued transports. That conclusion is backed by findings within the ICMA report that complement this research paper. Specifically, LVFR is not meeting the NFPA 1710 standard for response times. In fact, using a sample size of 60,583 of their 77,185 EMS calls, LVFR is averaging 9.2 min per responses—obviously above the BLS 4 min and ALS 8 min NFPA 1710 response times (ICMA, 2012, p. 88). Furthermore, 10 of LVFR's 21 rescues are way over the 110% threshold value with an average of 4,740 calls; however, they do have great TAT time, 1 hr 54 min, for their patient transports (ICMA, 2012, p. 81). Similarities between AFD and LVFR indicate that the City of Albuquerque must have the right resources in place prior to providing fire-based transports.

The information collected from the third research question uncovered the circumstances and prohibitions of the Ambulance Service Contract (ASC). In short, AFD is bound by the ASC contract with AAS until April 28, 2014, unless a subsequent agreement is made or the contract is terminated pursuant to ASC provisions (ASC, 2012, p. 6). The 2012 ASC contract provides an opportunity for revenues and they can be upwards of $200,000; collected from late response penalties, level zero penalties, service charges, medical supply reimbursement, licensing rights reimbursement, and personnel reimbursement. Municipalities facing budget shortfall, must search for opportunities to enhance revenue production; providing a transport service can generate such revenue (Monograph 4, 1997, p. 1). The lone prohibition to the ASC contract is the contract's agreement provisions; specifically the Albuquerque EMS Ordinance is the guiding document for the ASC. Simply put, a CCN is required for transports in Albuquerque, regardless of compensation; however, all is not lost. As the CCN owner, AAS can lease out a subset patient population (ALS, BLS, and MVA) or all of its transports by contract to AFD. Transport changes

to AAS' CCN must meet the approval of the PRC through the issuance of a permit and an endorsement change. Even though AFD is the *authority having jurisdiction* (AHJ) in Albuquerque, they cannot take away AAS' legal right to transport 911 patients within Bernalillo County; more importantly, the CCN owner has the right to fight for their transports by appearing and appealing before the PRC (R. Jerman, personal communication, June 20, 2013; Motor Carrier Act, 1978/2013).

The circumstances involving the revenue from the City of Albuquerque's ASC contract is quite contrary to other ambulance service contracts. For example, the Shoreline Ambulance Service received the City of Westminster (CA) ambulance service contract for $2.6 million over 3 years (Kopetman, 2012, para. 2); and the City of San Diego will be receiving $10 million a year from their recent ambulance service contract with Rural-Metro (Gustafson, 2013). Clearly, the City of Albuquerque does not receive revenues from the ASC contract anywhere near what other private ambulance services are paying. In fact, dividing ASC revenues by AAS' projected net revenue for City of Albuquerque patient transports and the conclusion is the city is making about 2% of possible net transport revenues ($200,000/$9.4M = 2%). Whether the City of Albuquerque chooses to transport or not, it is time to negotiate for significant revenues on the next ASC contract.

The findings compiled from the fourth research question disclosed the oversight provided by the State of New Mexico on ambulance transports in Albuquerque. The State of New Mexico provides ambulance oversight through statute law: Motor Carrier Act of 1978, the Ambulance Standards Act of 1978, and the Emergency Medical Services System Act of 1978; and governing bodies: NM Public Regulation Commission; NM Department of Health, and the City of Albuquerque. There are only two paths for transport services in NM, compensated and non-compensated. The ultimate requirement for becoming a compensated transport service is the ambulance transport certificate (CCN); awarded by the PRC. Of note, the Albuquerque City

Council has the authority to change the EMS Ordinance, opening up the door for a possible CCN or allowing transport changes for AFD (L. Hoffman & D. Tourek, personal communication, August 20, 2013). However, a key change in the CCN process has already occurred during the writing of this research paper.

As of July 1, 2013 the NM Motor Carrier Act (1978) enacted a specific change, directly affecting an organizations ability to receive a CCN. Prior to July 1, 2013, the CCN applicant (AFD) was required to present the PRC with three pieces of key information (a *need*, inadequate patient transports, and be fit and capable to transport); and the current CCN holder was given an opportunity to defend their right to transport. Subsequent to July 1, 2013, the CCN applicant (AFD) is only required to present a *need* to the PRC; the current CCN holder is given 20 days to fix that need (Motor Carrier Act, 1978/2013). If the current CCN holder cannot fix the need, both parties must appear before the PRC for a ruling on the future of the new CCN (Motor Carrier Act, 1978/2013). While participating in the application process for a CCN, a proven need can lead the PRC to grant a temporary authority.

The correlation between New Mexico's oversight on ambulance transports and those presented by the United States Government: the Highway Safety Act of 1966, the National Traffic and Motor Vehicle Safety Act of 1966, the Department of Transportation Act of 1966, and the Emergency Medical Services (EMS) Systems Act of 1973, are coextending. The Albuquerque Fire Department has 19 rescues that are all designed, constructed, and outfitted with the prescribed equipment and communication systems required by both NM and U.S. laws. Currently, AFD is attempting to add rescue units to its fleet in order to continue to meet the needs of the community and in accordance with both the NM Emergency Medical Services System Act of 1978 and the U.S. Emergency Medical Services System Act of 1973. By following ambulance service oversight and providing a transport service, AFD will enhance the value of their fire department in the eyes of their community (Neville, 1973, p. 38).

The data introduced by the fifth research question confirmed that the Albuquerque Fire Department can transport a subset of the patient population for revenues. The correlation between AFD's subset patient population transports and their ensuing revenues with those revealed by the Orlando Fire Department, suggests a successful future in fire-based transports by the City of Albuquerque. Today, the Orlando Fire Department successfully transports all ALS and MVA patients with 11 full-time rescues (Orlando Fire Department, 2012). In 2012, OFD responded to 36,194 EMS calls and transported 19,174 patients for $18.26 million in gross charges, and net revenues of $4.8 million (Florida Department of Health, 2012, p. 20; Orlando Fire Department, 2012). In fact, gross charge per transport is $952 and net revenues are $250 per transport; and while OFD provides 71% of all transports, they do have a considerable high TAT time of 4 hr 47 min (see Appendix K, Table 2B).

Right now, AFD can transport all MVA patients and at least two ALS patients a day per rescue. The total projected revenue from 16,670 transports a year (877 transports per year per AFD rescue) is $11.17 million in gross charges and $7.26 million in net revenues—net revenue projection is based off the IAFF's estimated collection rate percentage for transport services—65% ($11.27M x .65 = $7.25M) (see Table 3C) (Pratt, n.d., p. 78). Breaking down the projected revenues ($11.17 million and $7.25 million) further, a projected gross charge and net revenue of $670 and $435 per transport is revealed ($7.25M/16,670 = $435), respectively (see Appendix K, Table 2B; see Table 3C). The Albuquerque Fire Department can produce substantial revenues for the City of Albuquerque's General Fund; in fact, AFD would be able to fund at least one rescue a year—creating additional future revenues to the budget (see Table 3C). "The majority of fire departments that provide transport services, charge fees for those services, adding revenue to the budget" (Monograph 4, 1997, p. 1).

Recommendations

The vision and mission of AFD's EMS Division is to *provide excellence in service delivery to the citizens and visitors of the City of Albuquerque* (About, n.d.). The following recommendations support the vision and mission of the Albuquerque Fire Department and are based on the information provided by this ARP. Regardless of the outcome of this research paper, it is highly recommended that the Albuquerque Fire Department continue to work professionally and cooperatively with their contracted transport organization, AAS, and continue to research potential revenue sources.

- Present the findings of this research paper to the Mayor, City Councilors, and Fire Chief of Albuquerque. Allow city officials to determine the financial impacts of fire-based transports to MVA and ALS (2 per rescue per day) patients in the City of Albuquerque.
- Direct the City of Albuquerque to hire a consulting firm to further study the current fire- based EMS system in Albuquerque, the effects of fire department transports on future emergency 911 calls and responses, and the successful design, development, and construction of revenue generating fire-based transport system.
- Direct the City of Albuquerque to form an Ad Hoc Committee on Future AFD Revenues
- Direct the City of Albuquerque to enter negotiations with AAS (PHS) with a goal of procuring all MVA and ALS (2 per rescue per day) patient transports in the City of Albuquerque with a Request for Proposal (RFP). Procurement of transports from another AAS' CCN will require a Permit and an Endorsement to the CCN by the PRC.

- Direct AFD to request a Temporary Authority from the PRC, showing a need for all MVA and ALS (2 per rescue per day) patient transports.
- Direct AFD to file an ambulance transport (CCN) application with the PRC.
- Direct AFD to submit a transport tariff to the PRC for approval.
- Direct the City of Albuquerque to make an amendment to the EMS Ordinance, granting AFD authority to provide future MVA and ALS (2 per rescue per day) patient transports.
- Direct the City of Albuquerque to provide new language to the ASC—specifically, all MVA and ALS (2 per rescue per day) patients will be transported by AFD.
- Direct the City of Albuquerque to renegotiate the ASC with AAS, during the renewal period, requesting more revenues for services and equipment provided by the AFD.
- If negotiations with AAS cannot be reached, direct the City of Albuquerque to open up the contract to all ambulance service providers. The RFP will outline what revenues and transports, MVA and ALS (2 per rescue per day), the city will require.

Through the implementation of these recommendations, the Albuquerque Fire Department and the City of Albuquerque have opportunities to generate revenue for the General Fund. There is a clear potential revenue source in fire-based transports, and it would be fiscally responsible for both the Albuquerque Fire Department and City Officials to provide further research into this potential revenue source. While this research project may not be applicable to every jurisdiction in the country, the recommendations set forth can still add value to the fire service by providing a guide for future researchers attempting to find potential revenues in fire- based transports.

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Appendix A

Interview Questions for Ryan Jerman

June 17, 2013

1) What is the NM Statewide Ambulance Tariff? It sets rates for transport companies. Every ambulance company has to have a tariff that is approved by the commission. Ambulance companies can adopt your state transport tariff.

    a. Can it be modified? Yes; Is the Tariff for charging? Yes; Can an organization own the Tariff! Yes

    b. Where do the Tariff billing numbers come from? Accountants, economists testify in front of the Commission on the rates using other states, and transport companies.

    c. How long is a tariff good for? Each tariff can last as long as they want or come before the Commission and modify them every 4 years

2) Does the Title 18 Transportation & Highways Motor Carrier General Provisions on Ambulance Services apply to fire departments? Yes and No. If the fire department bills for transport then "yes", if the fire department does not bill for transports then "no".

3) Can you explain or elaborate on the issuance of an ambulance certificate? No one can provide a compensated transporting ambulance service without getting approval from the Commission and that is in the form of a certificate (it tells them where they can work and what they can do). The commission can enforce you to transport if it is on your certificate and you are missing transports.

    a. Re-issuance of certificate? They are inspected every year and have a certificate renewed every 3 years.

    b. What is the difference between an ambulance endorsement, permit, and contract? The endorsement is a change in the certificate to do more or less. Contract and permit is the same thing. The contract must go before the Commission for approval then it becomes a Permit and an endorsement is done.

    c. Can a fire department own an ambulance certification and contract out the transport? Yes. Can also get the certificate and not transport, instead lease it out to a transport company

4) What does the Albuquerque Fire Department (AFD) need to do in order to transport? On July 1, 2013 there will be a change in the transport certificate process; it will be a lot harder to get one. Before July, 1 2013, three things must be shown, a need, inadequate transport service, fit and capable to transport—including funds, guys are certified, and finally compliance with all relevant laws and safety and insurance requirements. Vehicle inspections as well. Must have the transport equipment. Must submit a tariff or the Commission assigns us theirs. Must also submit a $250 application fee. After July 1, 2013—the law will say that there is only a need to be shown. You don't get the certificate right away. The current transport companies will get 20 days to fix the "need" issues or problems.

5) Can AFD just take over the transporting of the City of Albuquerque? No. But can lease another's certificate but need the Commission to give it an okay first.

6) How long is the process to get an ambulance certificate to transport? A Year. There is a loop hole—can show an urgent need for another transport service and the Commission can grant the Temporary Authority certificate while waiting for the actual certificate to pass

7) Can AFD just transport a certain population (car wrecks, heart attacks) of its responses? Could lease that portion from AAS or can just ask for that from the Commission but need a certificate, the Commission may have to give us a waiver on other transports. We would still respond to all calls, but transport only certain ones.

Appendix B

Interview Questions for Franchot Opela

July 27, 2013

1) Why does TFD only provide ALS Transports?

   TFD started transporting because we wanted better quality control on our equipment and personnel. We also wanted to begin cost recovery for our EMS responses. On average the transport is around $2,000. Cost recovery (City of Tucson) is $6 - $8 million (Gross) on average per year and goes back to general fund—and it makes money for the City. We contract out the BLS transports to Southwest Ambulance. We have also considered hiring peak hour trucks (BLS) for some BLS transports in order to get more revenues.

2) How does TFD know how many transport units they need?

   TFD uses GIS information for the location of our rescues. When one unit gets over a certain number (3,000) calls then another ALS Transport unit is put into service at that same station. So far this has happened twice. We use ePCR for our call records and cost recovery.

3) How many Rescues does TFD staff?

   18 Paramedic Transport Units
   2 non ranked Paramedics
   3 Alpha Trucks (Human Services Response Vehicle) – all code 1 response only, with 2 basics, each cover 1/3 of the city, and can go to all fires in their district.

   TFD staffs 1 F-250 crew cab pick-up with 1 paramedic and 1 basic. It goes to calls for assessments only (Pilot Program). We are participating in this Pilot Program to see if TFD can save money by not sending Engines to the same calls.

4) TFD 2012 Call Data

   Total calls 70,993 (Medical calls excluding fires)
   TFD transports 19,378 (27.3%)
   Southwest Ambulance transports 22,451 (31.6%)
   Air Medical 27 transports (0%)
   Non-Transports 29,137 (41.1%)
   Not a patient/No treatment required 10,527 (14.8%)

Appendix C

Interview Questions for Paul Bearce

August 6, 2013

1) Does RRFD provide all EMS Transports?

   Yes, transport all EMS 911 patients, but do not provide Inter-facility transports unless requested by hospital.

   2012 transports were 4,677

   Total 2012 emergency calls were 8,113

   Total EMS calls 6,159

2) Who does your cost recovery?
   City of Rio Rancho bills and tracks billing in house

   $1.6 million (2012) in revenue a year and goes to General Fund

3) What system do you use to track patients (ePCR)?

   Image Trend for patient tracking

4) How does RRFD know how many transport units they need?

   Historic run data sets up where and when units are needed

5) How many and how do you man your ALS transport units?

   5 Daily staffed Rescues, but have the ability to staff 3 more in the event of a need. 1 medic and 1 EMT B or I – no rank on Rescue

Appendix D

Interview Questions for Lou Hoffman and David Tourek

August 20, 2013

1) How will the City of Albuquerque financially incorporate the expenses of operating an AFD fire-based transport service into the city's budget?

   By implementing costs recovery for EMS calls into a new Ambulance Service Contract, the city can recover their new transport costs.

2) Can the City of Albuquerque provide its own collection and billing agencies for a fire-based transports service?

   No, the city is not prepared to chase down its citizens for reimbursement. The city is still currently trying to recover citizen payments for the red-light cameras. We would have to tie it into the Ambulance Service Contract and let the ambulance service recover the costs for us.

3) How soon could the City of Albuquerque and AFD implement a fire-based transport service?

   It must be negotiated first during the end of the contract period and after the existing contract with AAS ends, implementation, if financially able, will occur.

4) Can the City of Albuquerque change the EMS Authority Ordinance to include AFD transports?

   Yes, the City Council has the authority to change the EMS Ordinance; however, we are not sure about all costs and liabilities that will be assumed by the City of Albuquerque.

5) What does the City of Albuquerque need to do in order to adjust the Ambulance Service Contract?

   Start by negotiating a new contract with a set request for proposal [RFP]. If the city is not satisfied then we can open it up to all ambulance transport services. We stand a better chance of making revenues through a contract than transporting. Once we receive an RFP that we like then we can move forward.

Appendix E

Questionnaire Questions for Karl Isselhard

June 17, 2013

1) Total call volume for 2010 – 2012
2) Total EMS calls for 2010 – 2012
3) Total vehicle accident calls for 2010 – 2012
4) Total transports by AFD for 2010 – 2012
5) Total ALS call volumes for 2010 – 2012
6) Total BLS call volumes for 2010 – 2012

Frank,

I have listed the information that cannot be found on the Chief's Year End Reports. Please refer to the past Chief Year End Reports for 2010 – 2012 on Sharepoint for the rest of your requested information.

2010 – 200 Transports by AFD

2011 - 250 Transports by AFD

2012 - 139 Transports by AFD

2010 ALS Calls: 24,000

2010 BLS Calls: 35,429

2011 ALS Calls: 24,389

2011 BLS Calls: 36,127

2012 ALS Calls: 24,781

2012 BLS Calls: 38,491

Karl

Appendix F

Questionnaire Questions for Charles Schroeder

July 8, 2013

1) What is the purpose of the NM Department of Health's Certification of Emergency Medical Services Agencies Title 7 rule and is it the law?

   Thank you for writing. At one time the State Corporation Commission, now known as the Public Regulation Commission (PRC) had oversight of Ambulance and Medical Rescue Services under 18 NMAC 4.2, which was filed in December 1997. That rule was renumbered and replaced by 18.3.14 NMAC, Ambulance Services in 2005. The change effectively removed the oversight of EMS Medical Rescue Services away from the PRC, and leaving the PRC with the oversight of Ambulance Services. Ambulance Services are those PRC certificated agencies that bill for transportation of patients and that have a certificate of need to operate within a designated area of the state.

2) Is the Title 7 rule only applicable to non-charging fire department transports?

   The oversight of EMS Agencies (medical rescue) moved to the Department of Health, EMS Bureau in 2003, under the Emergency Medical Systems (EMS) Act. The EMS Act cites the duties of the EMS Bureau under Section 24-10B-4, NMSA 1978. As part of those duties, item L states that Bureau will adopt rules for the administration of an emergency medical services certification program for emergency medical services. After a long rule making process, the Bureau completed the drafting of certification rules in 2010. The Certification of Emergency Medical Services Agencies rule, 7.27.10 NMAC was issued in the NM Register on March 15, 2010. The statute is the "law" and the rules are how the Department will administer the law. If a service does not comply with the rule, it would be considered as breaking administrative law.

3) Do fire departments have to adhere to all portions of the Title 7 rule?

   The purpose of the Certification of Emergency Medical Services Agencies rule is to provide uniform standards for equipment and operations of NM Medical Rescue Agencies used in the administration of care of the sick and injured, and to insure the highest standards of competence in the EMS personnel providing prehospital care to the public. A medical rescue is considered as transport and non-transport capable. The medical rescue rule (Title 7) applies to any EMS Agency not covered under the PRC Ambulance Service rule; this would include, search and rescue, emergency medical dispatch agencies, special event EMS agencies and non-billing fire departments.

Appendix G

Questionnaire Questions for Kurt Krumperman

July 8, 2013

1) Total EMS 911 call volume within the City of Albuquerque for 2010 – 2012
2) Total EMS 911 MVA calls within the City of Albuquerque for 2010 – 2012
3) Total EMS 911 MVA transports within the City of Albuquerque for 2010 – 2012
4) Total EMS 911 ALS transports within the City of Albuquerque for 2010 – 2012
5) Total EMS 911 BLS transports within the City of Albuquerque for 2010 – 2012
6) Total EMS 911 Transports within the City of Albuquerque for 2010 – 2012

Captain Soto,

This is the best I can get out of the system right now:

2010 – 43,489 transports 2659 of these were from vehicle crashes

2011 - 45,034 transports 2672 of these were from vehicle crashes.

2012 -47,622 transports 3068 of these were from vehicle crashes.

I cannot break them out any other way.

This is an example of what I can get you out of our billing system. I am afraid it may not be exactly what you are looking for. This is a report with 2012 data. This report is by ALS and BLS emergency call types (911 calls) and it includes calls in the county and Corrales. Also it includes non-transport evaluation charges. You will see the totals at the bottom. Our collections off of gross charges is 51.2%. On the billing side I cannot break it out by MPDS code.

If you have any questions please contact me.

Kurt

Appendix H

EFO EMS Transport Survey Questions

Albuquerque Fire Department
EMS Division

James Breen, Fire Chief

June 17, 2013

Dear Participant:

My name is Frank Soto Jr. and I am a Captain with the Albuquerque Fire Department. I am currently writing my first-year Applied Research Project (ARP) as a student in the Executive Fire Officer Program at the National Fire Academy. I have selected your organization to participate in an EFO EMS Transport Survey. If I have sent this survey to the wrong person within your city/village/town/county, then please forward it to the correct fire or EMS person to fill it out. Thank You!

The data from this survey will be used in my ARP: *The Feasibility of Fire-Based Transports by the Albuquerque Fire Department.* While the data from this survey will be in my report, your specific organization name will be anonymous.

There are 30 check box style questions in this survey—some with comment areas if needed—and 3 comment style questions for those organizations that transport. I appreciate and thank you for taking a few minutes of your time to complete the following survey.

Your information will greatly assist me in this research project. All responses will need to be completed by August 17, 2013. Once again, thank you for your assistance!

Sincerely,

Frank Soto Jr.

Frank Soto Jr., MPA
Captain
Albuquerque Fire Department

1. What is the population size of the community in your response area?		
Answer Options	Response Percent	Response Count
Less than 50,000	48.5%	48
50,001 – 100,000	15.2%	15
100,001 – 200,000	11.1%	11
200,001 – 300,000	1.0%	1
300,001 – 400,000	2.0%	2
400,001 – 500,000	4.0%	4
More than 500,000	18.2%	18

2. How many employees are in your organization?		
Answer Options	Response Percent	Response Count
Less than 50	43.6%	44
51 – 100	10.9%	11
101 – 200	15.8%	16
201 – 300	4.0%	4
301 – 400	4.0%	4
401 – 600	5.9%	6
601 – 800	4.0%	4
801 – 1,000	1.0%	1
More than 1,000	10.9%	11

3. Is your organization a:		
Answer Options	Response Percent	Response Count
Public/Municipal FD	69.6%	71
Private FD	1.0%	1
Volunteer FD	7.8%	8
Private Ambulance Company	2.9%	3
Hospital-Based Ambulance	3.9%	4
Third Party Ambulance (city owned and operated)	5.9%	6
Other (please specify)	8.8%	9

4. Is your organization:		
Answer Options	Response Percent	Response Count
All Career	59.4%	60
Combination (career and volunteer)	25.7%	26
Volunteer	13.9%	14
Other (please specify)	1.0%	1

5. Does your organization provide emergency medical services (EMS)?		
Answer Options	Response Percent	Response Count
Yes	97.0%	98
No	3.0%	3
Other (please specify)	0.0%	0

6. How does your organization provide EMS?		
Answer Options	Response Percent	Response Count
Basic Life Support (BLS)	12.0%	12
Intermediate Life Support (ILS)	11.0%	11
Advanced Life Support (ALS)	37.0%	37
Combination (BLS, ILS, or ALS)	40.0%	40
Other (please specify)	9.0%	9

7. What percentages of Paramedics make up your organization?		
Answer Options	Response Percent	Response Count
Less than 10%	20.8%	21
10% - 20%	12.9%	13
21% - 40%	24.8%	25
41% - 60%	9.9%	10
61% - 80%	7.9%	8
81% - 100%	6.9%	7
N/A, we do not have Paramedics	16.8%	17

8. What is your organization's response times based on?		
Answer Options	Response Percent	Response Count
NFPA 1710	48.5%	48
Local Ordinance	30.3%	30
Other (please specify)	21.2%	21

9. What was your total incident count (call volume) for 2012?		
Answer Options	Response Percent	Response Count
Less than 1,000	21.0%	21
1,001 – 10,000	40.0%	40
10,001 – 20,000	10.0%	10
20,001 – 30,000	3.0%	3
30,001 – 40,000	5.0%	5
40,001 – 50,000	2.0%	2
50,001 – 100,000	11.0%	11
More than 100,000	8.0%	8

10. How many EMS incidents (call volume) did your organization respond to in 2012?		
Answer Options	Response Percent	Response Count
Less than 1,000	24.2%	24
1,001 – 10,000	38.4%	38
10,001 – 20,000	10.1%	10
20,001 – 30,000	5.1%	5
30,001 – 40,000	3.0%	3
40,001 – 50,000	4.0%	4
50,001 – 100,000	10.1%	10
More than 100,000	5.1%	5

11. What was the number of BLS incidents (call volumes) responded to in 2012?		
Answer Options	Response Percent	Response Count
Less than 1,000	43.3%	42
1,001 – 10,000	33.0%	32
10,001 – 20,000	3.1%	3
20,001 – 30,000	5.2%	5
30,001 – 40,000	2.1%	2
40,001 – 50,000	6.2%	6
50,001 – 100,000	5.2%	5
More than 100,000	2.1%	2

12. What was the number of ALS incidents (call volumes) responded to in 2012?		
Answer Options	Response Percent	Response Count
Less than 1,000	41.8%	38
1,001 – 10,000	36.3%	33
10,001 – 20,000	5.5%	5
20,001 – 30,000	6.6%	6
30,001 – 40,000	2.2%	2
40,001 – 50,000	2.2%	2
50,001 – 100,000	3.3%	3
More than 100,000	2.2%	2

13. What is your organization's average response time to BLS calls in 2012?		
Answer Options	Response Percent	Response Count
Less than 2 minutes	0.0%	0
2 minutes to 4 minutes	28.0%	26
4 minutes to 8 minutes	57.0%	53
More than 8 minutes	15.1%	14

14. What is your organization's average response time to ALS calls in 2012?		
Answer Options	Response Percent	Response Count
Less than 2 minutes	1.1%	1
2 minutes to 4 minutes	27.2%	25
4 minutes to 8 minutes	56.5%	52
More than 8 minutes	15.2%	14

15. Does your organization provide EMS transport?		
Answer Options	Response Percent	Response Count
Yes, Fire-Based EMS	51.6%	49
No, Fire-Based EMS	25.3%	24
Yes, Private Ambulance Service	6.3%	6
Yes, Hospital-Based Ambulance Service	3.2	3
Yes, Municipal Third-Party Ambulance Service (city owned and operated)	13.7%	13

16. If your organization does not transport then who does?		
Answer Options	Response Percent	Response Count
Private Ambulance Company	45.2%	19
Hospital-Based Ambulance	7.1%	3
Third Party Ambulance (city owned and operated)	9.5%	4
Other (please specify)	38.1%	16

17. How many transports did your organization provide in 2012?		
Answer Options	Response Percent	Response Count
Less than 1,000	44.9%	40
1,001 – 10,000	33.7%	30
10,001 – 20,000	6.7%	6
20,001 – 30,000	0.0%	0
30,001 – 40,000	5.6%	5
40,001 – 50,000	2.2%	2
50,001 – 100,000	4.5%	4
More than 100,000	2.2%	2

18. Does your transport unit respond to all EMS calls or does another unit request it out for the transport?		
Answer Options	Response Percent	Response Count
Yes, we respond to every emergency call, whether transport is needed or not	72.9%	70
No, we are dispatched out by the first on-scene unit when a transport is needed	1.0%	1
N/A, we do not provide transport	16.7%	16
Other (please specify)	9.4%	9

19. Does your organization transport all EMS calls or just a specific population? (MVA, AMI, etc.)		
Answer Options	Response Percent	Response Count
Yes, every call	63.8%	60
No, we only transport a specified population	3.2%	3
N/A, we do not provide transport	19.1%	18
Other (please specify)	13.8%	13

20. How many field transport units does your organization staff on a full time basis?		
Answer Options	Response Percent	Response Count
Less than 5	65.2%	58
6 – 10	14.6%	13
11 – 20	7.9%	7
21 – 30	3.4%	3
31 – 40	5.6%	5
41 – 50	1.1%	1
More than 50	2.2%	2

21. Does your organization charge for EMS transports?		
Answer Options	Response Percent	Response Count
Yes	72.0%	67
No	11.8%	11
N/A, we do not provide transport	16.1%	15

22. What type of Tariff does your organization use for transport charges?		
Answer Options	Response Percent	Response Count
State Tariff	44.1%	41
Modified State Tariff	2.2%	2
Organization's Personal Tariff	21.5%	20
We provide transport, BUT do not Bill	6.5%	6
N/A, we do not provide transport, nor Bill	17.2%	16
Other (please specify)	8.6%	8

23. Who conducts the Billing for your transports?		
Answer Options	Response Percent	Response Count
Private Company	41.8%	38
Your Organization	25.3%	23
N/A, we do not Bill	26.4%	24
Other (please specify)	6.6%	6

24. What is the percentage of Billing your organization collects from transported patients?		
Answer Options	Response Percent	Response Count
Less than 10%	0.0%	0
10% - 20%	4.6%	4
21% - 40%	12.6%	11
41% - 60%	17.2%	15
61% - 80%	26.4%	23
81% - 100%	10.3%	9
N/A, we do not Bill	28.7%	25

25. What were your total expenditures for transporting in 2012?		
Answer Options	Response Percent	Response Count
Less than $50,000	17.6%	15
$50,001 – $100,000	5.9%	5
$100,001 – $300,000	8.2%	7
$300,001 – $600,000	7.1%	6
$600,001 – $1,000,000	14.1%	12
More than $1,000,000	22.4%	19
N/A, we do not provide transport	24.7%	21

26. What was your total net revenue for transporting in 2012?		
Answer Options	Response Percent	Response Count
Less than $50,000	18.8%	16
$50,001 – $100,000	8.2%	7
$100,001 – $300,000	7.1%	6
$300,001 – $600,000	9.4%	8
$600,001 – $1,000,000	3.5%	3
More than $1,000,000	29.4%	25
N/A, we do not provide transport	23.5%	20

27. Who receives the transport revenue money?		
Answer Options	Response Percent	Response Count
General Fund	42.7%	38
Fire Department	18.0%	16
N/A, we do not Bill	25.8%	23
Other (please specify)	13.5%	12

28. What is the staffing matrix of your transport unit?		
Answer Options	Response Percent	Response Count
1 Medic and 1 Basic	25.3%	23
2 Basics	7.7%	7
1 Basic and 1 Intermediate	11.0%	10
1 Medic and 1 Intermediate	15.4%	14
2 Intermediates	2.2%	2
2 Medics	20.9%	19
N/A, we do not provide transport	19.8%	18
Other (please specify)	14.3%	13

29. How does a transport impact your staffing matrix?		
Answer Options	Response Percent	Response Count
Crews switch out in order to keep an ALS unit in the field	9.9%	9
No impact	53.8%	49
N/A, we do not provide transport	19.8%	18
Other (please specify)	16.5%	15

30. How does a transport impact your response area? (who picks up the slack)		
Answer Options	Response Percent	Response Count
Another one of our own units	51.1%	46
Another organization	20.0%	18
N/A, we do not provide transport	21.1%	19
Other (please specify)	13.3%	12

31. Logistically speaking, how does your organization specifically transport patients?	
Answer Options	Response Count
	70

32. How many Paramedics are needed within your organization to ensure transports are successful?	
Answer Options	Response Count
	74

33. What are your specific costs associated with transporting?	
Answer Options	Response Count
	68

Appendix I

Participating Organizations in EFO EMS Transport Survey

Albuquerque Ambulance Services
Albuquerque Fire Department
Andover Fire & Rescue
Antigo Fire Department
Artesia Fire Department
Bernalillo County Fire Department
Boston Fire Department
Brooksville Fire Department
Cedar Hill Fire Department
Celina Fire Department
Chicago Fire Department
Cimarron Community Ambulance
Clark County Fire Department
Clovis Fire Department
Colerain Township of Fire and EMS
Colorado Springs Fire Department
Columbus (NM) Fire Department
Columbus Division of Fire (OH)
Conway Fire Department
Cuba Health Center PMS
Delta Township Fire Department
Deming Fire Department and EMS
Division of Public Safety (WSCC)
Eagle Nest Fire Department
Edmond Fire Department
El Paso Fire Department
Espanola Valley EMS
Estancia Volunteer Fire Department
Farmington Fire Department
Folsom EMS
Fort Sumner Ambulance
Fort Worth Fire Department
Fresno Fire Department
Gallup Fire Department
Glenwood Fire and Rescue
Greeley Fire Department
Guam Fire Department
Hidalgo County EMS
Hobbs Municipal Ambulance
Howard County, MD Fire Department
Jacksonville Fire and Rescue Dept.
Jacksonville Fire Department (AR)
Jemez Pueblo Ambulance Service
Johns Creek Fire Department
Kansas City Fire Department
Kauai Fire Department
La Clinica Del Pueblo and Chama
Lake Forest Fire Department
Lane Fire Authority
Las Cruces Fire Department
Las Vegas Fire/ Rescue
Lincoln County EMS
Los Angeles Fire Department
Los Lunas Fire Department
Louisville Fire Department
Luna Fire and Ambulance
Madison Fire Department
Maui Fire Department
Memphis Division of Fire Services
Merced Fire Department
Miami Beach Fire Department
Mountainair Fire and Rescue
Nashville Fire Department
Omaha Fire Department
Overland Park Fire Department
Philadelphia Regional EMS
Pittsburg Bureau of Fire
Pleasant Hill Fire Protection District
Portales Fire Department
Portland Fire Rescue Department
Pueblo of Acoma Fire and Rescue
Pueblo of Laguna
Pueblo of Zuni
Questa Fire Department

Red River Fire Department
Rio Rancho Fire Rescue
Sacramento Fire Department
San Juan Regional Medical Center
San Ramon Valley Fire Protection Dist.
Sandia National Laboratories EMS
Sandoval County Fire Department
Santa Fe City Fire Department
Santa Fe County Fire Department
Santa Rosa Fire Department
Seattle Fire Department
Sierra Vista Hospital Ambulance
Silver City Fire Department
Snohomish County Fire District #1
South Placer Fire District
Springer Volunteer Ambulance
Springfield Fire Department
Stafford County Fire and Rescue
Superior Ambulance
Taos County Ambulance
Tatum Fire Department
Texico Volunteer Fire Department
Thoreau Volunteer Fire Department
Town of Vaughn Ambulance
Tucson Fire Department
Virginia Beach Fire Department
Westerville Fire Department
Westminster Fire Department
Worcester Fire Department
Zuni Fire and EMS Program

Appendix J

City of Albuquerque Total Patient Population Tables

Table 1A

City of Albuquerque Total EMS Call Volume and Transports for 2010 – 2012

Year	EMS Calls	AAS Trx	AFD Trx	Total Trx
2010	59,429	43,489	200	43,689
2011	60,917	45,034	250	45,284
2012	63,272	47,622	139	47,761
Yearly Averages	**61,206**	**45,382**	**196**	**45,578**

Table 2A

City of Albuquerque Subset Patient Population Totals for 2010 – 2012

Year	BLS Calls	ALS Calls	MVA Calls	MVA Trx	Total Trx
2010	35,429	24,000	5,424	2,659	43,689
2011	36,127	24,389	5,305	2,672	45,284
2012	38,491	24,781	5,809	3,068	47,761
Yearly Averages	**36,682**	**24,390**	**5,513**	**2,800**	**45,578**

Appendix K

Projected AFD Fire-Based Transport Tables

Table 1B – *AFD Projections on Providing All Patient Transports*

	AFD Proj. All Transports	versus	**ASS Current Average**
Time	*Using the 3 Year Av. 2010-2012		*AAS 3 Year Av. 2010-2012
Population	555,417		555,417
Total Transports (Trx) 2012	45,578		45,381
Average Trx Units on the Streets	19		26
Total EMS Calls	63,272		63,272
Percentage of Transports	100%		99.70%
Average Yearly Trx per Unit	2398.84		1745.42
Average Daily Trx per Unit	6.57		4.78
Average TAT per Unit (using 1hr)	6hr 34min		4hr 47min

Table 2B – *AFD Projections on Providing MVA and ALS Patient Transports*

	AFD-Curr.	**AAS-Curr.**	**AFD-Projected**	**AAS-Proj.**	**TFD**	**SWA-Tuc.**
Time	2012	2012	*MVA & ALS 2014	*BLS 2014	2012	2012
Population	555,417	555,417	555,417	555,417	525,295	525,295
Total Transports (Trx)	139	47,622	16,670	31,135	19,378	22,451
Average Trx Units on the Streets	19	26	19	26	18	22
Total EMS Calls	63,272	63,272	63,272	63,272	70,993	70,993
Percentage of Transports	0.29%	99.70%	35%	65%	46%	54%
Average Yearly Trx per Unit	7.32	1831.62	877.37	1197.50	1076.56	1020.50
Average Daily Trx per Unit	0.02	5.02	2.40	3.28	2.95	2.80
Average TAT per Unit (using 1hr)	N/A	5hr 1min	2hr 24min	3hr 17min	2hr 57min	2hr 48min
Total Transport Revenue	$0	$9.8M (net)	$11.17M (gross)/$7.25M (net)	N/A	$7M	N/A
Average Revenue per Unit	$0	$206 (net)	$670 (gross)/$435 (net)	N/A	$361	N/A
ASC Contract Revenue	$200,000					
	AAS Average	**LVFR**	**AMR-LV**	**OFD**	**R/M-Orl.**	**RRFD**
Time	ALB Averages	2012	2012	2012	2012	2012
Population	596,424	596,424	596,424	249,562	249,562	90,818
Total Transports (Trx)	45,578	14,577	37,892	19,174	7,728	4,677
Average Trx Units on the Streets	26	21	40	11	22	5
Total EMS Calls	61,206	77,185	77,185	36,194	36,194	6,159
Percentage of Transports	100%	27%	73%	71%	29%	100%
Average Yearly Trx per Unit	1753.00	694.14	947.30	1743.09	351.27	935.40
Average Daily Trx per Unit	4.80	1.90	2.60	4.78	0.96	2.56
Average TAT per Unit (using 1hr)	4hr 48min	1hr 54min	2hr 36min	4hr 47min	58min	2hr 34min
Total Transport Revenue	$9.4M (net)	$6.1M	N/A	$4.8M	N/A	$1.6M
Average Revenue per Unit	$206 (net)	$418	N/A	$250	N/A	$342

Appendix L

Projected AFD EMS Budget Option Tables

Table 1C – *Projected AFD MVA Transport Revenues, Based on ALS 1 Emergency Trx Cost*

Option 1 – MVA Patient Transports	**NM Tariff ($494)**	**Average Tariff ($582)**	**AFD Tariff ($670)****	**Currently No Tariff**
Projected Transport (2,800) Gross Charges*	1,383,200.00	1,629,600.00	1,876,000.00	0
Projected Net Revenues from Transports added to CABQ General Fund	899,080.00	1,059,240.00	1,219,400.00	0
Cost of 1 Rescue (unit plus all Fire & EMS equipment) per year for replacement	267,524.61	267,524.61	267,524.61	267,524.61
Total Yearly EMS Expenditures for 19 Rescues	138,831.45	138,831.45	138,831.45	138,831.45
EMS Division Revenues	30,000.00	30,000.00	30,000.00	30,000.00
ASO Revenue ≈ $200,000 **(have not recovered any ASC reimbursement from AAS)**	200,000.00	200,000.00	200,000.00	200,000.00
Salaries for all assigned Rescue Personnel	6,468,396.48	6,468,396.48	6,468,396.48	6,468,396.48
Fringe Benefits for all assigned Rescue Personnel	3,686,985.99	3,686,985.99	3,686,985.99	3,686,985.99
Average Total Yearly Maintenance Costs for all 19 Rescues	172,602.46	172,602.46	172,602.46	172,602.46
Average Total Yearly Fuel Costs for all 19 Rescues	141,426.31	141,426.31	141,426.31	141,426.31
Net Gain/Net Loss	($9,607,855.85)	($9,447,695.85)	**($9,287,535.85)**	**($10,506,935.85)**
Unit Cost per AFD 911 Incident for 2013			$889.00	
Current Total AFD Budget for 2013			$70,390,000.00	
Current Total AFD EMS Budget for 2013			$320,000.00	
*50% of the MVA calls - 147 transports per year per Rescue				
**Projected AFD Tariff - Identical to AAS Tariff				

Table 2C – *Projected AFD ALS Transport Revenues, Based on ALS 1 Emergency Trx Cost*

Option 2 – ALS Patient Transports	**NM Tariff ($494)**	**Average Tariff ($582)**	**AFD Tariff ($670)****	**Currently No Tariff**
Projected Transport (13,870) Gross Charges***	6,851,780.00	8,072,340.00	9,292,900.00	
Projected Net Revenues from Transports added to CABQ General Fund	4,453,657.00	5,247,021.00	6,040,385.00	
Cost of 1 Rescue (unit plus all Fire & EMS equipment) per year for replacement	267,524.61	267,524.61	267,524.61	267,524.61
Total Yearly EMS Expenditures for 19 Rescues	138,831.45	138,831.45	138,831.45	138,831.45
EMS Division Revenues	30,000.00	30,000.00	30,000.00	30,000.00
ASO Revenue ≈ $200,000 **(have not recovered any ASC reimbursement from AAS)**	200,000.00	200,000.00	200,000.00	200,000.00
Salaries for all assigned Rescue Personnel	6,468,396.48	6,468,396.48	6,468,396.48	6,468,396.48
Fringe Benefits for all assigned Rescue Personnel	3,686,985.99	3,686,985.99	3,686,985.99	3,686,985.99
Average Total Yearly Maintenance Costs for all 19 Rescues	172,602.46	172,602.46	172,602.46	172,602.46
Average Total Yearly Fuel Costs for all 19 Rescues	141,426.31	141,426.31	141,426.31	141,426.31
Net Gain/Net Loss	($6,192,110.30)	($5,398,746.30)	**($4,605,382.30)**	**($10,506,935.85)**
Unit Cost per AFD 911 Incident for 2013			$889.00	
Current Total AFD Budget for 2013			$70,390,000.00	
Current Total AFD EMS Budget for 2013			$320,000.00	
**Projected AFD Tariff - Identical to AAS Tariff				
***2 mandatory trx a day per Rescue - 730 trx per year per Rescue				

Table 3C – *Projected AFD MVA & ALS Trx Revenues, Based on ALS 1 Emergency Trx Cost*

Option 3 – MVA & ALS Patient Transports	**NM Tariff ($494)**	**Average Tariff ($582)**	**AFD Tariff ($670)****	**Currently No Tariff**
Projected MVA Transport Gross Charges*	1,383,200.00	1,629,600.00	1,876,000.00	
Projected ALS Transport Gross Charges***	6,851,780.00	8,072,340.00	9,292,900.00	
Projected Net Revenues from Transports added to CABQ General Fund****	5,352,737.00	6,306,261.00	**7,259,785.00**	267,524.61
Cost of 1 Rescue (unit plus all Fire & EMS equipment) per year for replacement	267,524.61	267,524.61	267,524.61	138,831.45
Total Yearly EMS Expenditures for 19 Rescues	138,831.45	138,831.45	138,831.45	30,000.00
EMS Division Revenues	30,000.00	30,000.00	30,000.00	200,000.00
ASO Revenue ≈ $200,000 **(have not recovered any ASC reimbursement from AAS)**	200,000.00	200,000.00	200,000.00	6,468,396.48
Salaries for all assigned Rescue Personnel	6,468,396.48	6,468,396.48	6,468,396.48	3,686,985.99
Fringe Benefits for all assigned Rescue Personnel	3,686,985.99	3,686,985.99	3,686,985.99	172,602.46
Average Total Yearly Maintenance Costs for all 19 Rescues	172,602.46	172,602.46	172,602.46	141,426.31
Average Total Yearly Fuel Costs for all 19 Rescues	141,426.31	141,426.31	141,426.31	($10,506,935.85)
Net Gain/Net Loss	($5,293,030.30)	($4,339,506.30)	**($3,385,982.30)**	**($10,506,935.85)**
Unit Cost per AFD 911 Incident for 2013			$889.00	
Current Total AFD Budget for 2013			$70,390,000.00	
Current Total AFD EMS Budget for 2013			$320,000.00	
*50% of the MVA emergency 911 calls- 147 transports per year per Rescue				
**Projected AFD Tariff - Identical to AAS Tariff				
***2 mandatory ALS transports a day per Rescue- 730 trx per year per Rescue				
****16,670 total yearly AFD transports - 877 trx per year per Rescue				