Fire Operations Audit: Part I

May 2020

City Internal Auditor's Office

City of College Station

File#: 19-04

Audit Executive Summary:
Fire Operations Audit Part I

Why We Did This Audit

This audit was conducted per direction of the Audit Committee. The College Station Fire Department's expenditures have on average increased by 7 percent each year from fiscal year 2013 through 2019. Furthermore, the Fire Suppression Division has not been audited since the formation of our office in 2007.

While conducting this audit, we noticed significant issues better disseminated in multiple reports rather than one larger report.

What We Recommended

- Renegotiate contractual agreements with Texas A&M University and A&M System. These agreements should better reflect costs associated with providing emergency services to the Texas A&M System and University.
- Establish a formal agreement with the Texas A&M University Athletic Department for emergency standby reimbursement at special events.
- Partner with Texas A&M leaders to develop a comprehensive strategic plan for providing emergency services to the Texas A&M System and University. Establishing this partnership should create greater ownership of the risks and costs associated with emergency response and mitigation.

What We Found

Texas A&M University and the Texas A&M University System are not adequately reimbursing the City of College Station for fire suppression services provided. While not unusual for a university to not pay its local jurisdiction for fire protection services, the original Memorandum of Agreement and Understanding has not been revisited since 1971. By not updating this document to reflect population and infrastructure growth we have noticed the following problems:

While Texas A&M University does provide some payment, the actual costs far outweigh the reimbursement. As it stands, with exception to reimbursement from the Texas A&M Athletic Department for working athletic event standbys and payment from the Texas A&M University System for airport rescue and firefighting personnel, the City receives no reimbursement from Texas A&M for fire protection services.

University population and facilities growth have increased emergency response risks. Since the original agreement, both the City and the University have grown significantly. Texas A&M has several high risk facilities and is congested with regard to the amount of people who attend the University. This poses a unique situation as to how effectively the Fire Department can respond to calls on campus.

Texas A&M is a driving force for decisions made within the Fire Department. While not erroneous, there is a clear pattern showing fire station locations are placed within close proximity to campus. Increases to fire apparatuses, equipment, and personnel also appear to be driven by the demands to mitigate the risks associated with providing emergency response to Texas A&M University.

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Introduction

The Office of the City Internal Auditor conducted this performance audit of the College Station Fire Department pursuant to Article III Section 30 of the College Station City Charter, which outlines the City Internal Auditor's primary duties.

A performance audit is an objective, systematic examination of evidence to assess independently the performance of an organization, program, activity, or function. The purpose of a performance audit is to provide information to improve public accountability and facilitate decision-making. Performance audits encompass a wide variety of objectives, including those related to assessing program effectiveness and results; economy and efficiency; internal control; compliance with legal or other requirements; and objectives related to providing prospective analyses, guidance, or summary information. A performance audit of the Fire Department was included in the fiscal year 2020 audit plan based on direction given by the Audit Committee. To better facilitate the dissemination of audit results and improve the timeliness of reporting, the Office of the City Internal Auditor will be producing multiple smaller-scope Fire Department related audit reports rather than one large report. This audit report is the first in this series.

Audit Objectives

This audit addresses the effectiveness and fairness of the current agreements the City has with Texas A&M University and the Texas A&M University System as it relates to fire suppression services and seeks to answer:

- Is the Memorandum of Agreement and Understanding between the City of College Station and Texas A&M University equitable for both entities?
- Is the agreement between the City and the Texas A&M University System for providing Airport Rescue and Fire Fighting (ARFF) services to Easterwood Airport sufficient in terms of reimbursement?
- How has the growth of Texas A&M University affected the amount of responsibility placed on the City for fire services provided to the University?

Scope and Methodology

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. The survey phase of this

audit began in July 2019 with fieldwork conducted from February 2020 to May 2020. The methodology used to complete the audit objectives include:

Audit Organization Surveys. We conducted a nation-wide search to identify and examine nine of the most relevant and recent fire suppression audit reports published. We contacted the audit organizations responsible for publishing these reports to gain an understanding of how to best perform fire suppression operations audits and the risks associated with performing this type of audit.

Comparative Analysis. We contacted fire department administrations in university towns resembling College Station throughout the nation to gather information for a benchmarking analysis. Based on this analysis, we were able to determine how the College Station Fire Department's (CSFD) relationship with Texas A&M compared to the municipality/university relationships found in these comparable jurisdictions.

Ride-A-Longs. Ride-a-longs were conducted in August and September of 2019 with the purpose of understanding how the CSFD operates. To do this we conducted 24-hour observations at each of the stations. In order to pinpoint target areas to investigate further, we performed an initial 24-hour observation at Station 6. Once that was completed, we then were able to conduct 24-hour observations at all 6 stations for a total of 7 observations. We went on every call received at the assigned station. During our ride-a-longs, we observed over 40 fire or emergency medical services incidents.

Focus Groups. To identify key areas of concerns within the Department along with viable solutions related to the issues discovered, we facilitated guided discussions with each crew. We conducted an initial focus group with recent CSFD retirees to further pinpoint areas of concern. We then met with each crew, resulting in the facilitation of 19 individual focus groups. A risk assessment matrix was utilized to help guide these discussions. In total, we spoke with over 90 percent of line firefighters active in the department as of March 1, 2020.

Interviews. We conducted more than 300 hours of interviews with CSFD line staff, officers, and administrative personnel. We also consulted with the Legal Department, Human Resources, Fiscal Services, and the City Manager's Office.

Documentary Review. To obtain the best understanding of the contracts and agreements in question, we investigated the agreements between the City of College Station and Texas A&M University. We also reviewed the agreements between the City of College Station and the Texas A&M System.

Analyses. We conducting appropriate analyses regarding the financial impact of the agreements and contracts currently in place with Texas A&M University and the Texas A&M System.

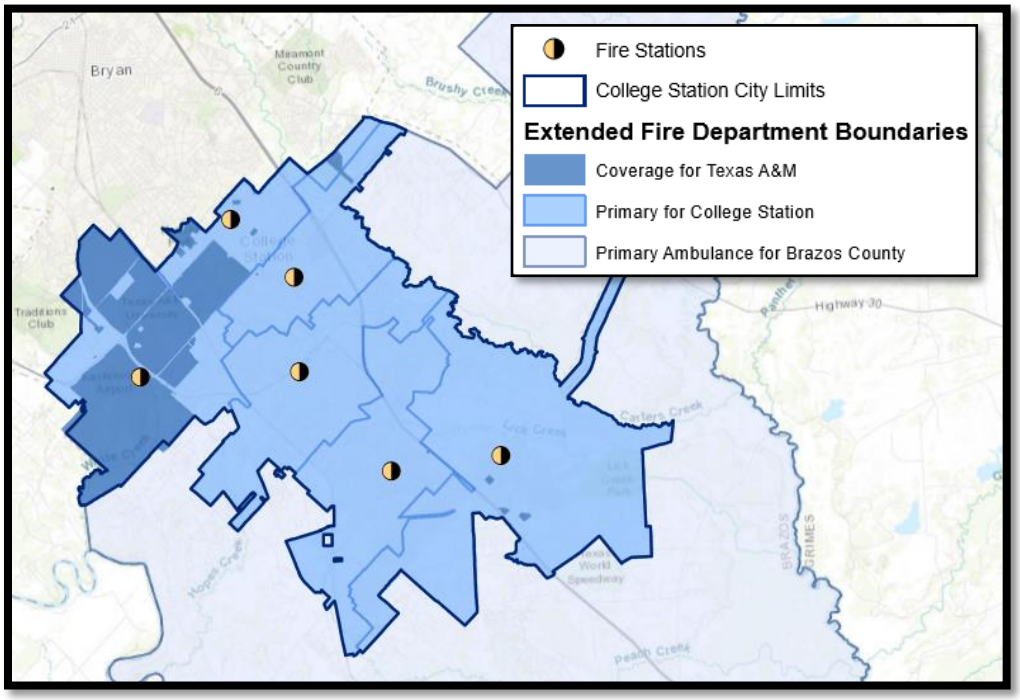
Background

The College Station Fire Department was established in 1970 and provides risk reduction, public education, fire prevention, and emergency services to the City of College Station, Texas A&M University, Easterwood Airport, Brazos County, and surrounding regional jurisdictions. Emergency Operations, the Fire Department's largest division, is responsible for fire suppression, emergency medical services, hazardous materials response, airport rescue and firefighting, wildland firefighting, and technical rescue.

Operating a Fire Department is Expensive

Professional Fire Departments are staffed to be ready to respond to emergency incidents 24 hours a day, every day of the year. To achieve this, the City's Fire Department operates on a 24/48 schedule (24 hours on, 48 hours off), has three shifts, and a typical work week is 56 hours without accounting for potential overtime. At minimum staffing, there are 41 line staff on shift, and when at a full roster, there are 49 personnel. The City of College Station currently has six fire stations. The location of these stations can be seen in Figure 1 below.

Figure 1: City of College Station Fire Department Locations



Fire departments are typically one of the most expensive municipal functions to operate. Based primarily on demographic data obtained from the U.S. Census Bureau, we identified ten cities in Texas and ten university towns that most resembled the City of College Station. The Texas cities we examined had an average fire department budget of $21.9 million and made up 24 percent

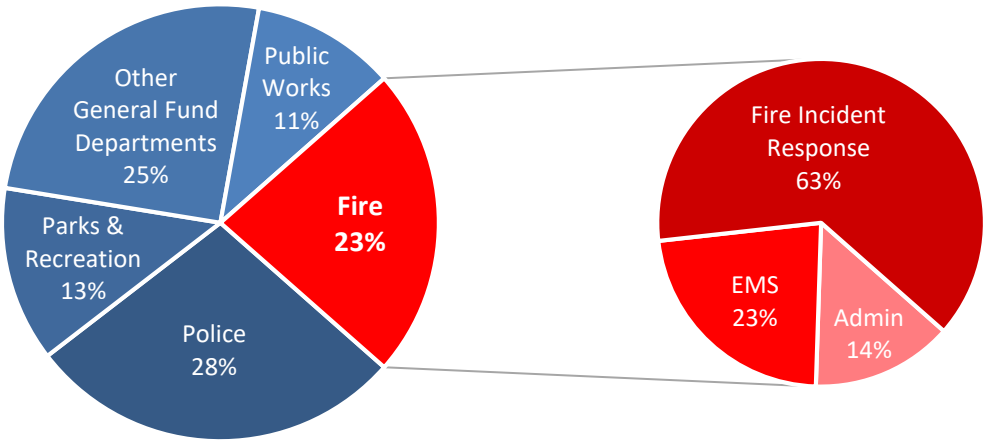
of their cities' total operating budgets. The university towns had a slightly lower average budget of $17.2 million, constituting 21 percent of the operating budgets of those cities. Table 1 below summarizes these results.

Table 1: Comparable Cities Fiscal Year 2020 Fire Department Budgets

Comparable Texas Cities	Fire Dept. Budget	Perc. of Operating Budget	Comparable University Cities	Fire Dept. Budget	Perc. of Operating Budget
Carrollton	$ 29,100,000	27%	Denton, TX	$ 31,900,000	23%
Odessa	25,800,000	26%	Tuscaloosa, AL	25,000,000	21%
Killeen	24,000,000	28%	Gainesville, FL	20,200,000	19%
Round Rock	23,900,000	20%	Champaign, IL	19,900,000	27%
Lewisville	23,300,000	23%	Columbia, MO	19,300,000	21%
Tyler	19,000,000	27%	Greenville, NC	15,200,000	21%
Pearland	18,700,000	22%	Fayetteville, AR	13,400,000	26%
San Angelo	18,600,000	26%	Bloomington, IN	11,100,000	20%
Bryan	18,500,000	23%	Iowa City, IA	8,500,000	15%
Conroe	18,400,000	22%	Auburn, AL	7,000,000	13%
Average:	**$ 21,900,000**	**24%**	**Average:**	**$ 17,200,000**	**21%**

The College Station Fire Department's budget for fiscal year 2020 is $20.4 million, which comprises 23 percent of College Station's total operating budget. As can be seen in Figure 2 below, approximately 63 percent of the Fire Department's budget is devoted to being prepared to respond to fires or other hazardous incidents.

Figure 2: Fiscal Year 2020 General Fund Operating Budget Distribution[1]



Emergency dispatch is funded through the Police Department's budget. If this nearly $2 million expenditure was split between the Fire and Police departments, the Police Department's percentage of the total general fund operating budget would drop to 27 percent and Fire's would increase to 24 percent. Also, Emergency Medical Services was combined with Fire

[1] "Admin" includes Fire Administration (6%), Fire Prevention (4%), Fire Training (3%), and Emergency Management (1%).

Suppression in fiscal year 2019 to create the Emergency Operations Division. For the purpose of Figure 2, Emergency Operations costs were separated into "EMS" and "Fire Incident Response".

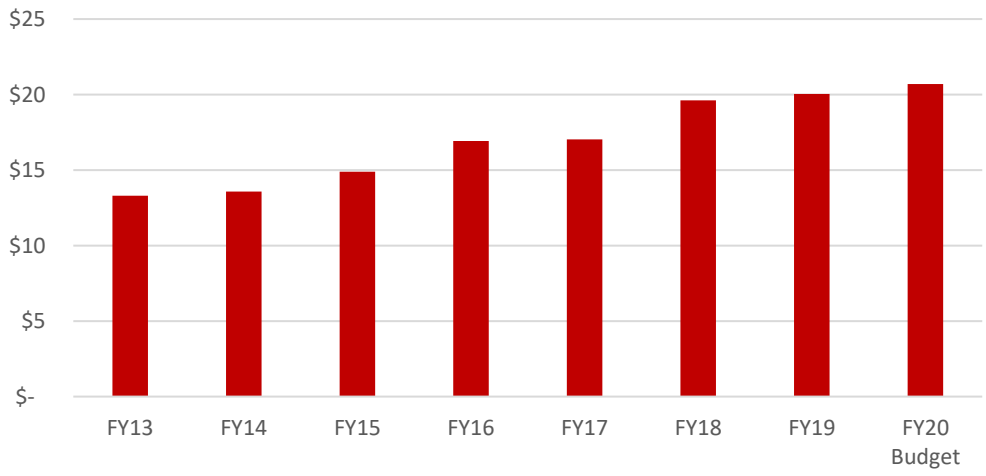
Operating expenses for the Fire Department are driven by personnel. Over 84 percent of the College Station Fire Department's $24.4 million operating budget is devoted to compensating, training and equipping its personnel. These personnel costs are partially due to the Fire Department seeking to abide by standards promulgated by the National Fire Protection Association (NFPA), Commission on Fire Accreditation International (CFAI), and Texas Commission on Fire Protection (TCFP). These standards recommend the (1) minimum personnel to be assigned for specific types of emergency incidents and tasks, (2) apparatus and equipment to be used, and (3) training necessary for emergency services. They also influence the Fire Department's internal staffing policies, which dictate the personnel to be assigned per shift, station, and apparatus. Table 2 below summarizes the Fire Department's personnel over the last seven fiscal years.

Table 2: College Station Fire Department Full-Time Equivalent Personnel

Division	FY14 Actual	FY15 Actual	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Budget	FY20 Budget
Fire Administration	5	5	4	4	5	5	5
Emergency Management	2	2	2	2	2	2	2
Emergency Operations	86	90	95	99	99	143	149
Fire Prevention	7	7	7	6	7	7	7
Emergency Medical Services	41	42	41	43	44	0	0
Fire Training	0	0	3	3	3	3	3
Total:	**141**	**146**	**152**	**157**	**160**	**160**	**166**

The cost to operate the College Station Fire Department has been steadily increasing. As can be seen from Figure 3 below, the Fire Department's expenditures have on average increased by 7 percent each year from fiscal year 2013 to 2019.

Figure 3: College Station Fire Department Expenditures (in Millions)



Emergency Services Capital Assets are Costly

Providing emergency services requires expensive infrastructure, equipment, and apparatuses. In addition to the over $20 million per year it costs College Station to operate the Fire Department, significant capital investment is needed on a periodic basis. For example, the last fire station built in College Station was constructed in 2013 for $6.9 million (not including the cost to acquire and develop the land). The College Station Fire Department also uses the most expensive apparatuses in the City. To better understand the purpose, cost, staffing and useful life of these vehicles, a brief description of the emergency service apparatuses are provided below.[2] The cost estimates provided for each of these descriptions is based the historical cost College Station incurred when purchasing these vehicles with a greater weight given to recent purchases.

Pumper: A pumper, also commonly referred to as a fire engine, is an apparatus with a permanently mounted fire pump with at least 750 gallons per minute capacity, water tank, and hose body whose primary purpose is to combat structural and associated fires. The Fire Department's minimum staffing for this apparatus is three individuals – an officer, driver, and firefighter. Pumpers cost between $600,000 and $700,000 and typically are replaced every 10 years.



Ladder / Aerial: Ladder trucks are equipped with an aerial ladder, elevating platform, or water tower that is designed and equipped to support firefighting and rescue operations by positioning personnel, handling materials, providing continuous egress, or discharging water at positions elevated from the ground. The Fire Department's staffing for ladder trucks consists of four individuals – an officer, driver, and two firefighters. Ladder trucks cost approximately $1.5 million with an estimated useful life of 15 years.



Command Vehicle: Typically SUVs or trucks, these vehicles are usually driven by battalion chiefs, safety officers, assistant chiefs, or the Fire Chief. The four most recent commander vehicles purchased between fiscal years 2017 and 2020 have been Chevy Silverados costing on average $45,000 each to acquire and equip. These vehicles are typically replaced every 8 years.



[2] Vehicles descriptions less relevant to this report, such as wildland firefighting apparatuses, were excluded.



Airport Rescue and Firefighting Vehicle (ARFF): The ARFF vehicles are owned by the Texas A&M University System. There are two ARFF vehicles. One is regularly staffed and the other is used as a reserve unit. The driver of the ARFF vehicle must have their basic Texas Commission on Fire Protection ARFF certification, be a Federal Aviation Administration (FAA) approved operator, and have completed the Fire Department's task book for this apparatus.

Quick Response Vehicle: The City purchased two quick response vehicles in 2019 for approximately $120,000 and are estimated to be replaced in eight years. These units are staffed with two personnel and were intended to reduce engine and ladder deployments to accident scenes. Although they look similar to command vehicles, they are equipped with additional emergency equipment.

Ambulance: The College Station Fire Department staffs its ambulances as advanced life support units. These units are staffed, at minimum, with a paramedic and a firefighter with an Emergency Medical Technician Basic license. The Fire Department most recently acquired an ambulance in 2019 which is planned to be replaced in eight years. The ambulance along with the emergency medical equipment housed in this vehicle cost approximately $339,000.



Texas A&M University is Part of the Texas A&M System

Texas A&M University and the Texas A&M University System are two separate entities. The Texas A&M System is one of the largest systems of higher education in the nation. It is a network of 11 universities, 8 state agencies, a health science center, and the newly built RELLIS campus. For reference in this report, the Texas A&M System owns Fire Station 4, Easterwood Airport, and the airport rescue and firefighting vehicles. Texas A&M University is the flagship institution for the A&M System. Established in College Station in 1876, it has grown to become one of the nation's premier research institutions. For reference in this report, Texas A&M University owns their own emergency medical service, College of Veterinary Medicine, Bush School of Government, Nuclear Science Center, Central Utility Plant, Kyle Field, and Zachry Engineering Education Complex.

Findings and Analysis

According to a 1971 agreement, the City provides fire suppression services to Texas A&M University. This agreement has not been updated to reflect changes to both the City and University since its passage. The University offers some reimbursement for emergency services provided at major athletic events, operates its own emergency medical service, and the Texas A&M System partially funds airport rescue and firefighting at the System owned airport. While not entirely unusual for a university to offer limited support to local jurisdictions for fire protection services, there are several comparable nationwide cities with significant business arrangements with universities for these services.

Texas A&M's Funding for Fire Suppression Services is Limited

With the exception of an annual payment of $211,368 from the Texas A&M University System to staff the Airport Rescue and Firefighting (ARFF) vehicle at Station 4 and reimbursement from the Texas A&M Athletic Department for being on standby during athletic events, the City is not receiving compensation for emergency services provided to the University.

The City Provides Fire Suppression Services to Texas A&M University

In 1971, College Station entered into an agreement with the University making the City solely responsible for fire suppression services. This agreement came in the form of a Memorandum of Agreement and Understanding (MOU). This MOU has not been updated since its passage and is still in effect today. Furthermore, memorandum of understandings are not always legally binding, but rather state an intent to provide a service. Prior to the 1971 MOU, the University provided fire protection to the City. Consequently, the MOU offers the following three reasons why College Station should be responsible for fire protection to the University:

(1) The MOU states "the University operated its own fire department, which furnished fire protection to the City for several years." Prior to the MOU, however, College Station compensated the University Fire Department for fire protection through an annual fee. Included in this fee were charges for salaries, training, insurance on trucks and personnel, maintenance, and equipment.

(2) The justification the MOU offers for the University receiving fire protective services with no recompense is the City's development of its own firefighting capability. Although the circumstances may have existed in 1971 to make it feasible for the City to offer fire protection to the University at no charge, conditions have since significantly changed. These changes will be discussed in further detail in later sections of this report.

(3) Finally, the MOU states "it is customary for cities to furnish fire protection to state agencies within their boundaries at no cost to such agencies." However, we found several university towns receive significant compensation for fire services rendered to their respective universities (see next section).

Some Comparable Cities Receive Considerable Payments for Fire Services

To determine the prevalence of universities, university systems, or States in providing remunerations to municipalities for fire services rendered to universities, a benchmarking study was performed. To best answer this question, we utilized the following methodology to select the jurisdictions to examine: (1) identified every university with a Division 1 football program and their associated conference; (2) recorded the city, state, and total enrollment of each university and sorted by total enrollment; and (3) identified the university towns which most resembled College Station's demographic profile (e.g. metro area population, city population, median household income, etc.).

Using the previously described methodologies, we identified the following twelve cities, sorted by similarity: Tuscaloosa, AL; Champaign, IL; Athens, GA; Bloomington, IN; Denton, TX; Gainesville, FL; Fayetteville, AR; Auburn, AL; Iowa City, IA; Columbia, MO; Lawrence, KS; and Greenville, NC.

Of the twelve cities identified, only Lawrence, Kansas, was unresponsive to our request. Five of the remaining eleven cities (45 percent) receive significant reimbursement from their associated universities, university systems, or States for the fire services they provide to their respective universities. These municipalities' relationships with the universities in their jurisdiction are summarized below.

Champaign, IL: In 1977 the University of Illinois and the cities of Champaign and Urbana negotiated an intergovernmental agreement with the University to dissolve the University's Fire Department. University fire suppression vehicles and equipment were transferred to the two cities. The agreement required the University to build an on-campus station to be operated by Champaign. In return, Champaign receives $1,170,762 annually ($1,072,627 for personnel costs and $98,135 for non-personnel costs). Personnel cost reimbursements are for salaries, benefits, and certification pay for firefighters posted at the on-campus station.

Bloomington, IN: The University of Indiana makes up about 25 percent of the area served by the Bloomington Fire Department and approximately 35 percent of the Department's call volume. Prior to 2018, the University and the City of Bloomington had a "handshake agreement" for the University to reimburse the City $750,000 annually for City firefighters assigned to the station on university property. However, payments were inconsistent without a contract to enforce the informal agreement. Therefore, a contractual agreement was enacted in 2018 requiring the University to remit $1,280,000 annually to the City for salaries and benefits of 12 firefighters posted at the on-campus station — to increase by 3 percent each year following the

date of enactment. The agreement is only for fire suppression services and does not include Emergency Medical Service (EMS) calls. In addition, the City receives approximately $1 million every time the main aerial apparatus is up for replacement since the primary purpose of the apparatus is to provide protection to high-rise buildings on campus.

Auburn, AL: The City is under contractual obligation to provide fire and police coverage to the University. The University has pedestrianized; therefore, it has become increasingly difficult for emergency response vehicles to efficiently access all areas of campus. In order to improve response times, the University and the City are in current negotiations to jointly build an on-campus fire station. This joint project between the University and City splits the cost of firefighters' salaries. In addition, the University reimburses the City for Fire Department related services rendered during special events.

Iowa City, IA: The University of Iowa and Iowa City have a contract from 1957 with the State Board of Regents. This contract provides reimbursement for fire suppression services rendered based on personnel costs, service costs, and square footage of University buildings. For fiscal year 2021, the payment from the University to the City for fire suppression services is estimated to exceed $1.6 million.

Greenville, NC: The City of Greenville is reimbursed at $100/hour for an ambulance being stationed at East Carolina University games and events. For fire suppression, the State of North Carolina reimburses the City for services provided to all state-owned buildings within the City's boundaries. For the past fiscal year, the State reimbursed the City approximately $400,000.

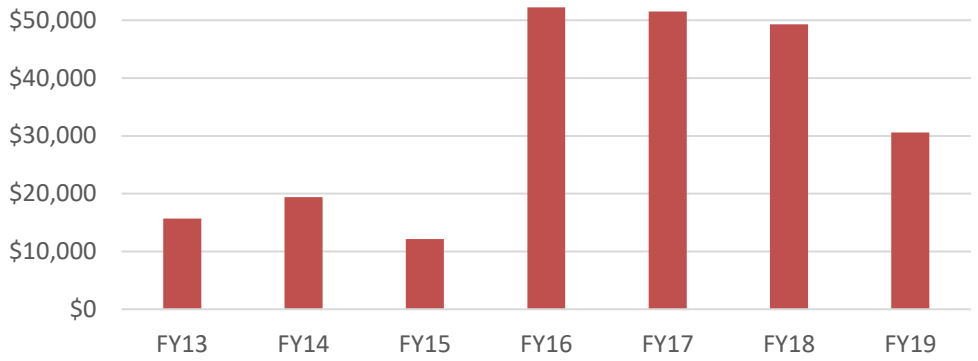
Texas A&M University funds Emergency Medical Services on Campus

Although the City provides all fire services to Texas A&M, the University runs its own emergency medical service (EMS). Texas A&M EMS operates 24 hours a day, 365 days a year, runs its own dispatch center, and employs 7 fulltime positions and over 100 part-time positions (including many Texas A&M students). The University staffs one ambulance with an additional standby ambulance at football games and certain special events. Due to their mobility, Texas A&M EMS uses bike teams during special events to allow quick access to patients. The annual budget for Texas A&M EMS is approximately $1 million a year, and is primarily funded through student fees and ambulance charges for service.

The University provides reimbursement for emergency medical standby at special events. College Station provides medical standby for events such as Special Olympics, high school football games, athletic events, and other events. Fees are sometimes required based on the event and profit status of the host. As such, the majority of standby fees collected each year are from the Texas A&M Athletic Department. However, there is no formal agreement between the City and the Athletic Department for these services. Therefore, Texas A&M is not contractually obligated to provide reimbursement. From fiscal year 2016 to 2019, the City collected on average $46,000 in medical standby fees. As can be seen in Figure 4, these fees jumped

significantly after fiscal year 2015 when the City received just under $12,000. Since its highest point in fiscal year 2016 of approximately $52,000, this revenue source has seen a steady decline, and has decreased by 38 percent from fiscal 2018 to 2019.

Figure 4: City of College Station Emergency Medical Standby Revenue for Special Events



Although the majority of fire department cost results from fire protection, the majority of revenue comes from emergency medical transport. This is evident when examining the College Station Fire Department's revenue and expenses over the last five fiscal years summarized below.

Table 3: College Station Fire Department Revenue and Expenses

Revenue Category	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
EMS Athletic Standbys	12,000	52,000	51,500	49,000	30,600
EMS Transport	1,679,000	1,634,000	1,776,000	2,047,000	1,998,100
EMS Transport (County)	162,000	214,000	267,000	280,000	286,600
Fire Prevention Inspections[3]	39,000	62,000	60,000	38,000	30,700
Grants (State and Federal)	208,000	626,000	601,000	187,000	-
Reimbursements[4]	158,000	126,000	77,000	664,000	511,200
License/Permit/Misc.	2,000	6,000	3,500	7,000	7,100
Total Revenue:	**2,260,000**	**2,720,000**	**2,836,000**	**3,272,000**	**2,864,300**
Expenditure Category	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Administration	538,000	417,000	441,000	603,000	1,245,000
Emergency Management	230,000	253,000	255,000	253,000	259,000
Emergency Operations	9,134,000	10,798,000	10,561,000	12,006,000	17,201,000
Prevention	817,000	855,000	768,000	886,000	763,000
Emergency Medical Services[5]	4,164,000	3,992,000	4,362,000	5,185,000	-
Training	-	602,000	646,000	691,000	568,000
Total Expenditures:	**14,882,000**	**16,917,000**	**17,032,000**	**19,625,000**	**20,036,000**

[3] Inspections include auto fire alarm, auto hood test, daycare centers, fire sprinkler/standpipe, foster homes, health care facilities, nursing homes, and fuel line/tank leaks.

[4] Includes reimbursements for special program deployments such as Hazardous Material, Texas Task Force, Swift Boat Rescue, or Texas Intrastate Fire Mutual Aid System (TIFMAS).

[5] Emergency Medical Services was combined with Fire Suppression for fiscal year 2019 to create Emergency Operations.

The A&M System Partially Funds Airport Rescue and Firefighting

The Texas A&M University System owns Fire Station 4 located at Easterwood Airport. Completed in January 1999, the station cost $1.6 million and was partially funded through grants from the Federal Aviation Administration. This double-deep three bay station houses one pumper, a reserve ambulance, a primary Airport Rescue and Firefighting (ARFF) vehicle, and a reserve ARFF vehicle. Although the station, property, and ARFF vehicles are owned by the Texas A&M System, the station is staffed with City of College Station firefighters. The engine and ambulance are also property of College Station. At a minimum, a captain, fire engine driver, firefighter, and ARFF operator are assigned to Station 4 each shift. The City has an agreement with the System which outlines the responsibilities and ownership of Fire Station 4. The agreement also specifies College Station's and the A&M System's responsibility for the following facility and equipment costs.

1. **Fire Station 4 Specific Equipment:** This includes furniture, appliances, fitness equipment, and first aid equipment. College Station is responsible for 80 percent of these costs and the Texas A&M System is responsible for 20 percent.
2. **Fire Station 4 Maintenance:** This includes the maintenance and repairs of the facility such as roof, doors, flooring, heating, ventilation, or air conditioning, etc. College Station is responsible for 50 percent and the Texas A&M System is responsible for 50 percent of these costs.
3. **Communication Equipment:** College Station is responsible for all the cost of communication equipment such as computers, radios, alerting equipment, etc.
4. **ARFF Communication Equipment:** The Texas A&M System is responsible for all the cost of ARFF specific communication equipment such as Very High Frequency (VHF) radios.

In 1999, the City of College Station and the Texas A&M System signed an inter-local agreement for airport rescue and firefighting. This original agreement was in effect from 1999 to 2000. At this time, the agreement did not require the A&M System to provide any recompense to help offset the City's cost of providing ARFF services to the System owned airport.[6] In 2000, the agreement was renegotiated to require the A&M System provide a yearly payment of $155,000 to the City (with a 3 percent annual increase) to fund a portion of the training, salary, and benefits of the three ARFF drivers assigned to Station 4. In 2004, this payment increased to $169,372.

The current agreement stipulates an annual payment of $211,368 for fiscal years 2018 through 2020. This annual amount is based on the costs associated with the following: (1) the salary and benefits of the three drivers needed to cover the shifts 365 days per year, 24 hours per day, (2) annual specialized training to staff the ARFF vehicle, and (3) specialized gear to be worn by the operator of the ARFF vehicle divided by the four partner entities (City of College Station, City of Bryan, Brazos County, and Texas A&M University).

[6] Easterwood Airport is regional airport for Texas A&M University, the City of Bryan, College Station, and Brazos County. It is owned and operated by the Texas A&M System, and is located just west of Texas A&M University main campus.

The annual payment of $211,368 does not cover the City's full costs associated with providing airport rescue and firefighting to the System owned airport. The minimum salary of an apparatus operator within the CSFD is $69,000. Therefore, the minimum salary of three operators is $207,000 annually. This does not include the cost of (1) benefits, (2) specialized training, or (3) specialized gear specified in the contract. In addition, the agreement does not account for overtime costs. Under the staffing structure specified in the agreement, the City will incur overtime costs each time one of the three ARFF operators are out on leave (e.g. sick, vacation, holiday, etc.).

Table 4 below provides the actual compensation (including overtime), actual benefit cost, and estimated training cost of the three firefighters assigned to the Airport Rescue and Firefighting apparatus at Station 4. The total ARFF personnel cost to the City of College Station is $369,700 – which exceeds the A&M Systems reimbursement of $211,368 by just over $158,000. It is important to note this shortfall would be even greater if equipment costs were included in this analysis.

Table 4: Airport Rescue and Firefighting Operator Personnel Cost

ARFF Operator	FY 2019 Actual Compensation	FY 2019 Actual Benefits	FY 2019 Estimated Training[7]	FY 2019 ARFF Personnel Total Cost
A Shift ARFF Operator	84,300	42,500	2,000	128,800
B Shift ARFF Operator	88,800	38,200	2,000	129,000
C Shift ARFF Operator	75,000	34,900	2,000	111,900
Total:	**$248,100**	**$115,600**	**$6,000**	**$369,700**

The Airport Rescue and Firefighting agreement also requires College Station provide emergency services to the University from the A&M System owned station. The purpose of the agreement between the City and the A&M system is to specify terms by which the City staff will operate System owned equipment and property. Therefore, Section 10.1 of the agreement contains the following language:

> College Station will provide fire protection, Emergency Medical Services, and hazardous materials response from the Fire Station to the Texas A&M University Main Campus, West Campus, Northgate and other areas in West College Station, and areas in Southwest Bryan.

[7] The training cost estimate is based on total College Station Fire Department training cost per firefighter. The cost for ARFF operators likely exceed this estimate as they require more specialized training.

Providing Fire Protection to a University has Unique Risks

Fire departments in most university towns face their own unique challenges. Risks of university towns include an above average number of bikers and pedestrians, sporting events, bar districts, on and off campus housing, multi-floor academic buildings, and large common areas. Although the relationship between the City and University established through the 1971 agreement may have worked for both parties at the time, a reexamination of this document is needed to reflect the growth and infrastructure of the City as a whole.

The City and the University Have Experienced Significant Change

The responsibility of providing fire protection to the University is different than it was in 1971. The City of College Station and the University have both grown substantially since the enactment of the 1971 agreement. College Station's population in 1970 was approximately 17,700. In 1971, Texas A&M University's student enrollment was 14,700. By 2019, the City's population grew to 123,000 and University enrollment to 69,500 students.[8]

Texas A&M University has grown not only in terms of number of students, but also in acreage. By physical size, Texas A&M's main campus is one of the largest in the United States, spanning more than 5,500 acres, which is equivalent to more than 8.5 miles. In addition, academic facilities are expanding beyond the central core of the campus, with the College of Veterinary Medicine and Biomedical Sciences north of campus and the Bush School of Government west of campus. The University is home to over 700 buildings and structures. Between 1900 and 1970, just over 200 new structures were constructed on campus. Since 1971, just under 500 new structures have been built on University property.

As the University and City has grown, so has the number of high-rise structures within the City – and the majority of these structures are University facilities. There are 168 buildings in College Station with three or more floors. The University owns 122 of these buildings, which equates to 73 percent. Table 5 below summarizes these results.

Table 5: Buildings within College Station City Limits with Over Two Floors

Category	3 Floors	4 Floors	5 Floors	Over 5	Total
University Buildings:	29	69	12	12	122
Non-University Buildings:	23	11	9	3	46
Buildings Total:	52	80	21	15	168
% TAMU Buildings:	**56%**	**86%**	**57%**	**80%**	**73%**

[8] Approximately 3 percent of the 69,500 Texas A&M students are solely enrolled in online classes.

The University Has Several High-Risk Facilities

Because of the acreage, attendance at athletic events, student population and research capabilities of Texas A&M University, the campus poses additional risks when compared to similar universities. There are a number of structures on campus which hold thousands of people and laboratories housing dangerous materials and hazardous products. These laboratories make hazardous material response more probable, for which the College Station Fire Department is the regional provider. A few of these high-risk facilities are described below.

Located west of the University's main campus is the Texas A&M Nuclear Science Center. The center houses a nuclear reactor which is used primarily to support education programs rather than research. Texas A&M University purchased the reactor in 1957. Originally located in Thompson Hall, the reactor was moved to the Zachry Engineering Center in 1972, and was moved again in 2016 to the Nuclear Science Center. The reactor is currently being refurbished in its new location.

Nuclear Science Center



The Central Utility Plant houses the Utilities and Energy Services (UES) Department which provides comprehensive utilities and energy management services to the more than 30 million gross square feet of campus facilities. The utility infrastructure alone has an estimated replacement value of $1.25 billion. Along with this, the UES also manages a building automation system with over 400,000 monitoring and control points to regulate temperatures, humidity, air and water flow, and lighting in campus facilities.

Central Utility Plant



South of campus is home to Kyle Field which seats 102,733 people. It is the third largest college football stadium in the nation, and attendance at games has exceeded 100,000 since 2014. Although the University reimburses the City for emergency medical standby services, as mentioned earlier in this report, the resources required if a major event took place could prove challenging to the City's Fire Department.

Kyle Field



The College of Veterinary Medicine (CVM) is located on the north side of campus. The CVM infectious diseases and biodefense program integrates multidisciplinary research in animal, human, and ecosystem health. The research includes basic and mechanistic studies of: microorganisms and disease, host-pathogen interactions, vaccine development, detection methods, diagnostic test development, field research, epidemiology, and surveillance. In the past, this facility has been targeted by People for the Ethical Treatment of Animals (PETA) for its research into muscular dystrophy in dogs.

One of the newest editions to Texas A&M's campus is the Zachry Engineering Education Complex. The building is the largest academic building on campus at 525,000 square feet. The building houses nine separate laboratories on 3 different floors. The School of Engineering has an enrollment of approximately 20,000 students and conducts research in autonomy and robotics; energy systems and services; education and training; health care; information systems and sensors; materials and manufacturing; national security and safety; and infrastructure.

Zachry Engineering Complex



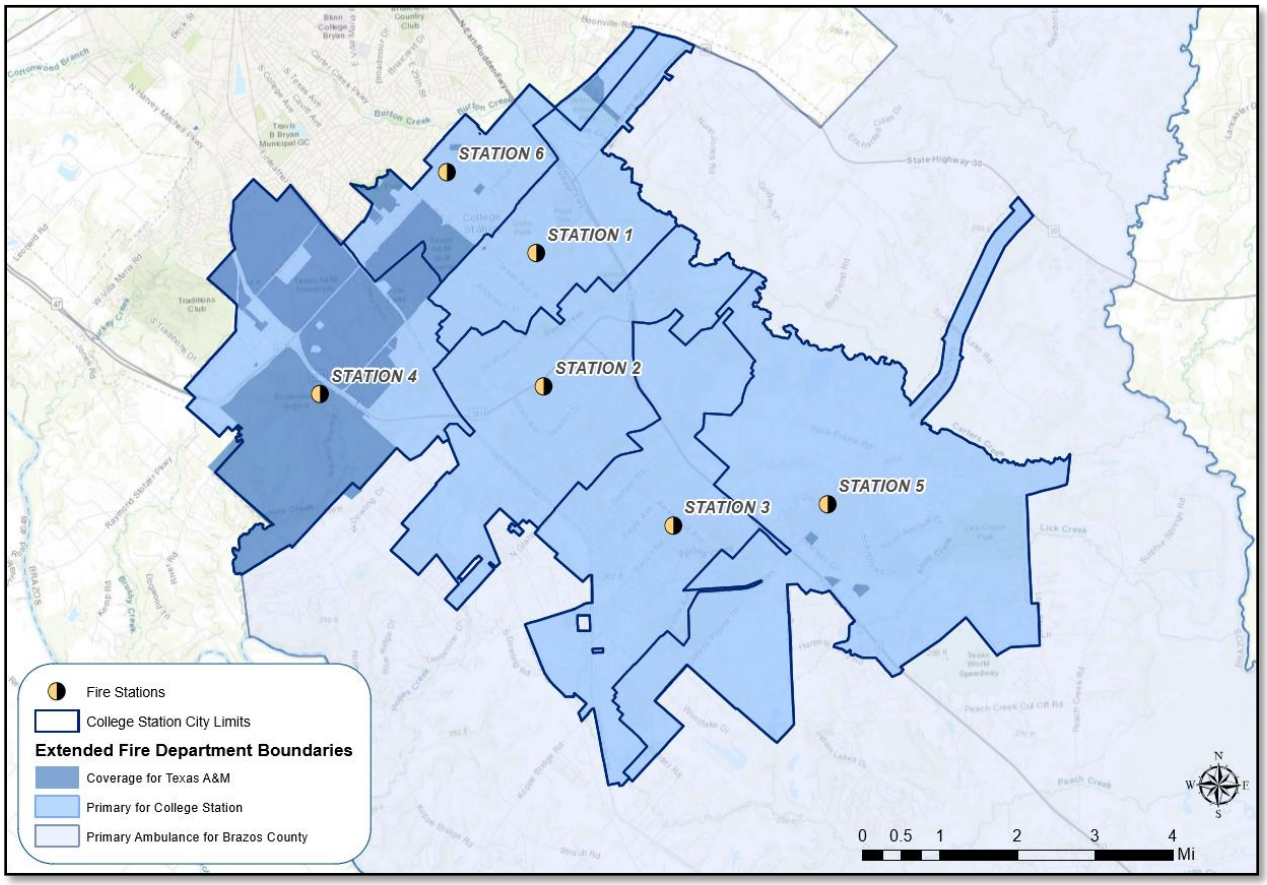
The University is a Major Contributor to Fire Department Cost

The College Station Fire Department seeks to abide by National Fire Protection Association Standards (NFPA). These standards offer guidance on the deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments. The purpose of these standards are to mitigate death, injury, property, and economic loss due to fire, electrical, and related hazards. As such, providing fire protection to the University according to these standards has driven the College Station Fire Department's infrastructure, personnel, training, and equipment needs.

Fire Stations Have Been Built within Close Proximity to Campus

The City of College Station currently has six fire stations. The location of these stations in relation to Texas A&M University property can be seen in Figure 5 below. In order to mitigate the emergency response related risks associated with University facilities, City fire stations are strategically located east, west and south of campus.

Figure 5: City of College Station Fire Department Locations



Less than 3 miles separates half the City of College Station's fire stations from several high-risk facilities located across campus. Table 6 below describes the distance between each City fire station and a high-risk facility located in each area of Texas A&M campus.

Table 6: Distance between Fire Stations and High Risk Facilities by Campus Area (in miles)

Station	**Campus Area:** Fire Station Address	**North** Veterinary & Biomedical Complex	**South** Kyle Field	**East** Zachry Engineering Complex	**West** Nuclear Reactor Laboratory	**Central** Central Utility Plant
1	304 Holleman Dr E	3.7 mi	2.3 mi	2.6 mi	5.6 mi	3.1 mi
2	2200 Rio Grande Blvd	4.7 mi	3.2 mi	4.1 mi	5.0 mi	4.4 mi
3	1900 Barron Rd	7.7 mi	6.4 mi	6.6 mi	8.9 mi	7.2 mi
4	1550 George Bush W	1.9 mi	1.9 mi	3.0 mi	1.9 mi	3.1 mi
5	1601 William D. Fitch	10.0 mi	8.5 mi	8.4 mi	10.3 mi	9.0 mi
6	610 University Dr E	2.2 mi	2.7 mi	1.1 mi	5.8 mi	1.6 mi

Station 6 is the most recent fire station built in College Station. Located at 610 University Drive, Station 6 was built in 2013 for $6.9 million. It has five double-deep bays, fourteen bedrooms, and totals 25,133 square feet. Each shift at Station 6 has a minimum of 11 firefighters staffing a commander vehicle, fire engine, ladder truck, ambulance, and quick response vehicle. Stations 5 and 3 were built in south College Station in 2007 and 2008 respectively. These two stations combined house fewer apparatus and firefighters than Station 6 (see Table 7 below).

In terms of population and structures, the majority of growth in the City is in south College Station. However, Fire Station 6 is not only on the northern border of the City but its response area also overlaps Station 1. From an overall emergency response standpoint, the location of Fire Station 6 may seem ill conceived. However, when analyzed from the standpoint of responding to high-risk structures on A&M campus, the location of this fire station is more reasonable.

Table 7: Last Three Fire Stations Built in College Station

Fire Station	Date Land Acquired	Land Acquisition Cost	Acres	Date Built	Cost of Building	# of Bays	Est Useful Life
5	9/30/2003	$180,270	4.1	9/30/2007	1,600,000	2	50
3	9/30/2005	$154,296	2.2	9/30/2008	2,300,000	2	50
6	NA	NA	NA	9/30/2013	6,900,000	5	50

Roughly 24 percent of all emergency service calls received by the College Station Fire Department are for fire protective services. The Remaining 76 percent are for emergency medical services. Approximately 20 percent of College Station's response to fire related incidents are to Texas A&M properties.[9] Although the majority of these incidences are false alarms, we observed responding to any incident on campus involves navigating large fire

[9] Based on call data provided by the College Station Fire Department between May 1, 2018 and April 30, 2019.

apparatus through congested, pedestrianized streets. As a result, on average it takes an additional minute for the first unit to arrive at the scene of a fire incident on campus than it does in the rest of the City.

The Cost of Fire Vehicles and Equipment is Increasing

The nationwide price of fire trucks are increasing at a rate of 5 to 7 percent each year. As technology has improved, safety standards for vehicles and equipment promulgated by National Fire Protection Association (NFPA) have also increased. For instance, standard features today include speed governors, steering control, on-board data recorders, and air bags—all of which come at a cost. For example, a ladder truck cost the City approximately $411,000 in 1996 compared to $1.5 million in 2017 – an increase of 274 percent, or 20.2 percent annually. To put this into perspective, the average annual inflation rate in the United States from 1996 to 2017 is 2.2 percent. Table 8 below compares fire apparatus purchased by the City over time.

Table 8: College Station Apparatus Cost Increases Overtime

Apparatus	Apparatus Cost			Date Range			Years	Percent Increase	Yearly Avg Inc.
Pumper	530,000	to	670,000	7/27/09	to	9/28/16	7.2	26%	3.6%
Ladder	1,080,000	to	1,534,000	10/13/11	to	2/28/17	5.4	42%	5.4%
Ladder	411,000	to	1,534,000	12/12/96	to	2/28/17	20.2	274%	20.2%
Ambulance	110,000	to	339,000	12/23/09	to	4/02/19	9.3	208%	9.3%
Command	29,000	to	53,000	6/24/14	to	7/23/19	5.1	81%	5.1%

Ladder trucks are the most expensive apparatus in a fire department. The College Station Fire Department currently has three ladder trucks housed at stations two, three and six. Because University facilities constitute over 70 percent of the structures over two stories, we reasonably conclude at least one of these ladder trucks was acquired to minimize fire related risk associated to responding to these properties.

Some Universities are Partnering with Fire Departments to Reduce Risks

Unlike other properties receiving fire suppression response, universities do not contribute to fire departments' funding through property taxes. In addition, universities disproportionally impact the cost of providing these services. This is especially true in cities such as College Station where students make up a large portion of the city's population. The large universities residing in these cities face unique challenges to emergency response such as sports complexes which attract thousands of fans, large multi-story buildings, and congested, pedestrianized streets. Because of this, other Cities with large Universities have partnered with their respective cities to build stations on campus property and to share in the costs to operate these stations.

Based on the riskiness of the structure being responded to, the National Fire Protection Association (NFPA) gives fire departments guidance on emergency apparatus and personnel

deployment. The NFPA would categorize a high percentage of buildings of large universities as "high-risk" structures based on their square footage, occupancy, and floors. Therefore, a campus operated station would at a minimum house a ladder and pumper company. Because large universities are heavily pedestrianized, the utilization of smaller quick response vehicles to aid in access to difficult areas as rapidly as possible could also be considered.

The City of College Station's staffing requirements for a quick response vehicle (QRV), pumper truck, and ladder truck are summarized in Table 9. Staffing requirements differ based on whether or not a QRV is stationed with a ladder truck. When QRV's are employed, they are sent on all ladder truck deployments to meet the minimum staffing requirements of the ladder truck.

Table 9: College Station Staffing Requirements for Fire Suppression Apparatus

		Staff without QRV		Staff with QRV	
Apparatus	**Vehicle Cost**	***Min Staff***	***Full Staff***	***Min Staff***	***Full Staff***
Quick Response Vehicle	$ 120,000	0	0	2	2
Pumper Truck	$ 650,000	3	4	3	4
Ladder Truck	$ 1,500,000	4	5	4	5
Total:	**$ 2,315,000**	**7**	**9**	**9**	**11**

Because Fire Departments operate 24 hours a day, 365 days a year; dropping below minimum staffing requires the use of overtime. For a station staffed with a pumper, and ladder; this would occur anytime more than three individuals are off duty due to leave or training. Therefore, 27 fulltime firefighters would need to be employed to staff a station with a pumper and ladder (i.e. 9 firefighters per shift). An additional 6 firefighters would need to be employed to staff a QRV.

Based on College Station's average cost per firefighter from fiscal year 2018 through 2019, the operational costs to run a fire station staffed with a pumper and ladder is approximately $3 million annually. To also staff a QRV would increase the cost to roughly $3.7 million. Table 10 below summarizes these costs.

Table 10: Operational Cost of Engine and Ladder Company

Account Category	**Cost per Firefighter**	**27 Fulltime Firefighters**	**33 Fulltime Firefighters**
Salaries:	$ 73,000	$ 1,971,000	$ 2,409,000
Benefits:	28,000	756,000	924,000
Training:	2,000	54,000	66,000
Supplies:	5,000	135,000	165,000
Maintenance:	2,000	54,000	66,000
Professional Services:	700	18,900	23,100
Utilities:	1,200	32,400	39,600
Insurance:	600	16,200	19,800
Administrative:	40	1,080	1,320
Totals:	$ 112,540	$ 3,038,580	$ 3,713,820

Recommendations

We spoke with over 90 percent of line firefighters – which constituted more than 300 hours of discussion. Firefighters consistently identified an inequitable relationship with Texas A&M University as a significant risk to providing economical fire protection response. During these discussions we not only sought to identify key issues within the department but also solutions to these issues. Although the following recommendations are based on our own independent assessment of the evidence, they also correspond with solutions offered by College Station firefighters.

1. **Renegotiate contractual agreements with Texas A&M University.** The 1971 Memorandum of Agreement and Understanding (MOU) has not been updated since its enactment and presents many challenges to the City. As it stands, the MOU does not stipulate reimbursement for the City's fire protection services. This agreement should be revised to recoup some of the costs of providing fire suppression services to Texas A&M University.

2. **Renegotiate the Airport Rescue and Firefighting (ARFF) agreement to accurately reflect the costs to the College Station Fire Department.** Currently, the College Station Fire Department provides ARFF services to the Texas A&M System owned airport at a loss of approximately $158,000 per year. In the revised agreement, the Texas A&M System agreed to fund a portion of these services. Since the ARFF services are only used at the System Airport, this agreement should be revised to stipulate the System fund all of the compensation, benefits, training and gear of the three ARFF vehicle drivers.

3. **Establish a formal agreement with Texas A&M Athletics for standby services.** The current arrangement between the College Station Fire Department and Texas A&M Athletics is not based on any contractual agreement. When standby services are needed, there is no contract to direct both parties on how to settle disputes. Establishing a contract would also allow for the Fire Department to more accurately forecast revenue in future budgets from these services.

4. **Develop a strategic plan for providing emergency services to Texas A&M campus.** Since the City of College Station and Texas A&M University entered into the agreement for fire suppression services, over 492 new structures have been built on University property. We recommend meeting with University Leadership to discuss and develop a plan that allows both entities to mitigate risks and costs associated with emergency response to Texas A&M University.