

Research Project

**“Can a Joint School and Fire Station Decrease Response Time for Concord Fire
Department?”**

By: Michael A Fearing
Lieutenant
Concord Township Fire Department
11600 Concord Hambden Road
Concord, Ohio 44077

A proposed research project submitted to the Ohio Fire Executive Program

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CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

1. 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.

2. I have affirmed the use of proper spelling and grammar in this document by using the spell and grammar check functions of a word processing software program and correcting the errors as suggested by the program.

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ABSTRACT

According to National Fire Protection Association 1710 “Standard and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments, the fire departments EMS for providing first responder with AED shall be deployed to provide for the arrival of a first responder with AED company within a four minute response time to 90 percent of the incidents. Advanced Life Support shall be deployed within an eight minute response time and fire suppression resources shall be deployed within a four minute response time.

Concord Township Fire Department has traditionally had a deficiency in meeting the expectations of NFPA 1710 according to response records. Using evaluative research and factual statistics this paper showed the current response time to the southwest quadrant of Concord Township, and shows outside factors which create a delay for those responses.

Through interviews, this project explained what attempts were made to address the issues of decreasing response time and what additional ideas have been entertained to correct delayed responses. This project showed how this quadrant of the community has no option to rely on other agencies to assist with lowering response times, and showed how a joint venture with a different type of organization could be a solution to the unique problems facing both.

There were three purposes to this paper. They included:

- 1) *To investigate whether Concord Fire Department met expected response requirements per NFPA 1710 for Fire, EMS and special services in the south west quadrant of the Community.*
- 2) *To determine if any other attempts were considered to decrease responses to the south west quadrant on the community.*

- 3) *To provide facts based on research that will give the reader an opportunity to judge for themselves if the addition of a fire station in the southwest quadrant of the community, in cooperation with a vocational school, would assist with the expedient deployment of fire and EMS.*

This research provided a reference for Concord Township Administration to evaluate and further research a solution to the response of fire and EMS in the southwest quadrant of the community.

The specific questions this research answered are as follows:

- 1) **How does Concord Township Fire Department rate against national response recommendations?**
- 2) **What can be done to decrease response to the south west quadrant of Concord Township?**
- 3) **What factors influence response time to the South West quadrant of Concord Township?**

It is understood that information is often incomplete as it changes from moment to moment. Every effort was made to maintain the most accurate and complete information while this research process was being completed. Checklists and documentation were maintained and followed with one-on-one interviews with key staff members from both agencies to keep apprised with any changes throughout this process.

After evaluating all the information, additional research must be completed for the logistics of a joint venture, but in general the addition of a joint facility fire station would appear to be a step forward in solving problems of space and response time. The location of an

additional facility would offer a geographically closer and more efficient response to the neglected area of the community and help alleviate traffic congestion issues.

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INTRODUCTION

Statement of the Problem

The current problem facing the Concord Township Fire Department is that we are unable to satisfy the recommendation of the National Fire Protection Association 1710 (2001) Standard for deployment of fire suppression operations, emergency medical operations and special operations to the public by career fire departments whose recommendation allows a four minute response to fire and EMS alarms.

Over the past 10 years Concord Township has seen a significant growth in construction and population in the south west quadrant of the Township. This development has created a high demand on public service, and has required that these public service organizations research available means to keep up with demand while being fiscally prudent. A joint use facility consisting of a fire station and training facility is being addressed because of the growth changes in our community and possibly creating additional strain on the organization. Not only has this growth created a higher demand for public services, but the educational system as well.

Such a facility could offer a solution to both organizations - the fire department and the vocational school.

By the end of 2009 the construction of two new hospitals will be complete. Within the next 5 years an estimated 200-300 additional offices and businesses are expected to be constructed. This area also incorporates the intersection of two major highways, a large area of Geauga County to our South where mutual aid is given, and large hotels already in place.

The South West quadrant of our community currently has no fire station in the immediate area for coverage. Our current response times to the area being studied are 8.5 minutes for first on scene emergency responders. This accounts for 13 percent of Fire and Emergency responses in Concord Township. “Response Time” shall be defined as the time that begins when units are en route to the emergency incident and end when units arrive at the scene. This response time shall only count apparatus and personnel traveling to an emergency scene, and shall not count time for call, dispatch, and preparation to respond, as these items are currently not recorded. There are several factors that affect these responses including weather, traffic, terrain, distance, location and time of day.

Concord Fire Departments responses are approximately twice the NFPA 1710 recommendation, which is the agency Concord Township Fire Department uses as a guideline for operations and is the most popular national standard. These response figures were obtained from Firehouse Software data from June 10, 2000 to June 10 2008.

Purpose of the Study

The purpose of this study will address if building a joint facility with the local vocational school will assist in lowering response times, thus better protecting the lives and property of Concord Township, while fulfilling the needs of two organizations.

This research project will reveal if adding an additional fire station housed in a vocational school building in the south west quadrant of the township could decrease response times which have been discovered to be up to eleven minutes.

By cooperating with the vocational school for the construction costs, we will identify if such cooperation would also assist the school with its operations. To determine if such a facility could help other communities, a similar research to this would need to be completed.

Evaluative research will show current and future impacts on the Fire Department that affect response times. This study shall also address what factors are affecting responses time to this quadrant and the anticipation of what other factors may arrive.

An evaluative research methodology was employed by the author to answer the following research questions:

- 1. How does Concord Township Fire Department rate against national response recommendations?**
- 2. What factors influence response time to the South West quadrant of Concord Township?**
- 3. What can be done to decrease response time to the south west quadrant of Concord Township?**

BACKGROUND AND SIGNIFICANCE

Currently Concord Township operates from two fire levies that are voted upon by the taxpayers of Concord Township every two and three years respectively. These levies currently generate approximately \$2,702,852 annually. Concord Fire Department currently has an employee base of fifty firefighters, seventeen of which are Fulltime employees. This includes a Fire Chief, Executive Captain, Administrative Assistant, and three civilian employees who are responsible for inspections and fire safety/education.

The minimum staffing is four firefighters manning Station One and four firefighters manning Station Two consisting of a combination of fulltime and part time employees. Fire department administration is located at station one. Currently the fire department serves a response area of twenty three square miles to a residential population of approximately 20,000. Concord Township also has auto aid agreements with three adjoining communities for structure fire responses.

Auburn Career Center, which is located in Concord Township, is a technical school serving eleven school districts, approximately 749 students, and employs 200 staff positions. Auburn Career Center also enrolls approximately 3,500 continuing and adult education students and growing.

Auburn Career Center is the current location of the fire ground training center which is utilized by Lake, Geauga, and Cuyahoga County fire departments. The facility currently includes a live fire burn building, search and rescue training house, vehicle extrication area and low angle rope rescue elevation. Fire service related courses offered by Auburn include: 76hr Firefighter level 1, 240hr Firefighter level II, Emergency Technician Basic, Paramedic, Fire Instructor, and Fire Inspector.

Referencing ACS Firehouse Software (1993) Fire and EMS Records Management Software (Version 6.3) [Computer Software], we can see from records beginning in 2000 to 2008 that Concord Township has had an average response time of 8.5 minutes to the Southwest quadrant of Concord Township. We shall refer to “response time” as the time that begins when units are en route to the emergency incident and end when units arrive at the scene. These responses account for a total of 13 percent of all responses for Concord Township Fire Department.

National Fire Protection Association [NFPA 1710] (2001) (Chapter 4) *Standard for the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career departments*, allows four minutes (240 seconds) or less for the arrival of the first arriving engine company at a fire suppression incident and /or eight minutes (480 seconds) or less for the deployment of a full first alarm assignment at a fire suppression incident.

As construction projects, increased traffic, and population growth occur we must take a proactive approach and anticipate an increase in demand for our services. As this occurs it will become more and more difficult to access these areas due to traffic, congestion, and demand on our current two fire stations.

Ohio Department of Transportation [ODOT] (July 10,2007) *Study for existing and year 2030 traffic volumes* charts the anticipated traffic congestion over the next 20 years. This study was conducted for both the state of Ohio, Lake County and Concord Township. The purpose of this study was to help all organizations with the development of the infrastructure for areas of the Township where anticipated growth is expected and has started. It will help determine where traffic control must be added or changed for safety, congestion, and added volume. The study has

also risen the question of whether or not to add additional roads in the area. This study shows future traffic with no growth, which has already changed with many facilities constructed and operating, including two hospitals and numerous doctors' offices since the study completion.

Though changes are being implemented to improve services, we must continue to research other possibilities which will have a high impact on this community's ever changing demands and requests for services. We must investigate the most cost effective avenues to provide these services.

The potential impact this study will have on Concord Township Fire Department is to identify if a unique cooperative service, will allow Concord Fire Department and Auburn Career Center to increase service while saving taxpayer money.

LITERATURE REVIEW

According to the National Fire Protection Association 1710 (2001), *Standard for the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments*, the fire departments' EMS for providing first responder with AED shall be deployed to provide for the arrival of a first responder with AED company within four minute response time to 90 percent of the incidents. The fire department's EMS for providing ALS shall be deployed to provide for the arrival of an ALS company within an eight minute response time to 90 percent of the incidents. The fire departments fire suppression resources shall be deployed to provide for the arrival of an engine company within a four minute response time and/or the initial full alarm assignment within an eight minute response time to 90 percent of the incidents. This shall be the national standard and shall be the standard that is adopted by Concord Township Fire Department.

Kouwe, P., Parrott, J., McNalley, R., (2006) Closest Unit Response Study, Eastern Lake County Fire Chiefs (Emergency Services Consulting Inc.) study for closest unit response was conducted for Eastern Lake County, at the request of the area fire chiefs in an attempt to show where the County has below national standard response times. This study was an effort to show whether removing community boundaries and allowing the closest fire station to respond would in fact decrease response times. This study did include Concord Twp. and according to the study there is currently no fire station that could improve response time to the South West quadrant of Concord Township.

ACS Firehouse Software TM (1993) Fire and EMS records Management Software (Version6.3) Copyright ^c 1993-2004 Visionary Systems, Ltd., Des Moines, Iowa is Concord Township Fire Department's current computer software where all record keeping for the

organization is stored and reports are generated. These files were used to show all the records of responses, broken down by time, type and volume. It is with this software, that it has been determined that the adopted National Fire Protection Associations recommendations for Concord Township Fire Departments responses are not currently being satisfied.

In 2007 a traffic study was prepared by Ohio Department of Transportation for Concord Township (ODOT) (2006). This study evaluated the State Route 44 Corridor for the existing and future year 2030 traffic volumes. Information from this study was used for this research project for the southwest and northwest quadrants of Concord Township. This research investigated all intersections in the area of rapid community growth. Included were signalized intersections, stop controlled intersections, and road ramp merges and diverges.

AM and PM peak traffic patterns were counted, and while using “Syncro” software, a model was created to show current patterns and a prediction of traffic patterns in 2030. The calculations were based on the assumption that no other factors in the township will change as far as construction, population or growth. This information was used to help determine congestion and delays for future responses. Because this study was extensive and township wide, only figures that affected the southwest quadrant of the community were utilized for this study.

Concord Township Fire Department (2006) Strategic plan found that through both internal and external analysis of the various issues facing the organization, community growth, increased calls and increased traffic pattern/ delays, were the top threats to Concord Township Fire Department. If ignored, these issues could ultimately affect the overall welfare of the organization, and have the potential, to impact the ability of the Concord Township Fire Department to deliver its product to the level the customers’ desire.

Auburn Career Center (ACC) Strategic Plan (2009) provided overview and annual budget and attendance for Auburn Career Center. Information obtained from D. Buchs (personal communication, April 2008) provided ideas of planning for the future growth of the school facilities.

According to D. Buchs (April 2008) there is a planning committee dedicated to researching funding and planning for fire training grounds that include classrooms, a fire station and training props. It was also confirmed that the Vocational School has a strong interest in a joint facility with Concord Township, and the School and Township are cooperating for such a facility.

This research has shown no other organizations attempting a similar venture. The information acquired has given facts on the current state of the organization and what the perception of the future will bring. Estimates have come from other organizations professional studies and from several interviews from the parties involved and what “they” would like to see in the future for the higher demands in services. R. M. Warner (April 2008) confirmed that there is a joint cooperation with Auburn Career Center to construct a joint facility.

Commission on Fire Accreditation International (CFIA) Creating and evaluating standards of response coverage for fire departments (4th edition) was consulted as it relates to” response time” or” reflex time”. The CFIA manual describes in great detail how, when and where response should be measured. After a thorough review of this manual, it was determined that the required information for this type of response evaluation is not available to Lake County due to record keeping issues in both Concord Township Fire Department and Lake County Central Communications Dispatch Center.

PROCEDURES

The procedures utilized for this research project are evaluative and include, but are limited to personal interviews and statistics. All facts and figures provided by this research are based on the assumption that all information given is accurate and of fact. These figures have been an attempt to ascertain what research and information already exists.

This research began by looking at the area of the community where it was thought that there may be delayed responses. At the time of this research there was no hard evidence to prove that this was fact or just opinion. It was then determined that, in order to prove or disprove delayed response, these times would need to be researched.

The first item researched was fire department records referenced from ACS Firehouse Software TM (1993) which documented responses in time, type and location. These figures were used to chart and demonstrate the current efficiency of the fire department responses to the southwest quadrant of the township. Response figures provided the statistics needed to trend Concord Township Fire Departments responses against nationally recommended response times.

This evaluation was made using the National Fire Protection Association (2001) Standard for the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments

As research continued, there were statistics provided to administration to show early on what the response times were in the southwest quadrant of the community. It was then, that it was discovered that there was talk to work with Auburn Career Center to construct a joint use building. After obtaining all available information from Concord Township, Auburn Career Center was contacted where hard data was collected. The information from Auburn Career Center showed current enrollment, student needs, and the planning the school is undertaking to

facilitate their needs. Current fiscal data of both organizations also came from this research.

Interviews were conducted with D. Buchs (ACC) to gain information from the school as to what the plans are for the future growth of the school. It was indicated that the school has been entertaining ways of constructing a facility specific to the fire and EMS classes offered by the organization. The geographical location of the proposed facility is on school property in the southwest quadrant of Concord Township.

A model was created by the Ohio Department of Transportation (ODOT) (2007) study showing current traffic patterns and predicted traffic patterns and congestion in 2030. This study was conducted for Concord Township to assist with the required infrastructure that is needed for the current growth trend in the community. Data from this study was used for this research project to provide information on traffic patterns and to demonstrate the congestion that will affect fire department responses potentially in both time and volume. This study demonstrated current and future congestion delays.

The Closest Unit Response Study (2006) was utilized to locate the primary deficient response area in Concord Township. This study showed the south west quadrant was the area with the longest response times. The study also showed that no other fire departments from Lake County were geographically closer to the studied area, therefore would not be able to provide a more efficient response to the area.

Limitations of the Study

There were several limitations encountered during the process of this study. As research was conducted, various questions were raised and the branches of a study of this caliber seemed to become larger and larger as progression was made. There was also an absence of material available to show where a project like this has ever been brought to fruition. Because information

was limited from outside agencies, as much information as possible was needed from the organizations immediately involved. The primary focus of this study was to concentrate on response statistics and to determine the most feasible solution for lengthened delays. The majority of information presented came from local resources to help determine need and solution.

Definition of terms

NFPA-(National Fire Protection Association)- The world's leading advocate of the fire prevention and authoritative source on public safety, NFPA develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks.

ODOT- (Ohio Department of Transportation)- The organization of state government responsible for developing and maintaining all state and federal roadways in the state of Ohio with the exception of the Ohio Turnpike.

Response Time- Defined as time that begins when units are en route to an emergency incident and end when units arrive at the scene.

Southwest Quadrant- The geographical location of Concord Township utilizing Interstate 90 from West to East, and utilizing State Route 44 from North to South to divide the Township into four equal quadrants for the purpose of Fire and EMS responses.

Central Communications- A division of the Lake County Sheriff, this division is responsible for dispatch of multiple fire and police agencies located in Lake County, Ohio.

RESULTS

The first information this study reviewed was fire department response time statistics.

For the purposes of this study “*response time*” shall be defined as *the time that begins when units are en route to the emergency incident and ends when units arrive at the scene.*

This definition has been chosen due to the fact that this is the limited information available from Lake County Central Dispatch. There are working plans for a new system to be adopted by Central Communications, so the center will be able to keep records of additional response information such as, call time, dispatch time, turn out time, and travel time. Once in place, fire departments will be able to identify exact time for all motions of an emergency response. It is realized that “reflex time” would offer more detailed information about response such as processing, turn out time, and travel time; unfortunately, this information is not currently stored in this fashion for retrieval.

How does Concord Township Fire Department rate against national response recommendations?

The conclusion clearly drawn from this research is that Concord Township Fire Department is clearly not meeting the national standards for responses to the south west quadrant of the community. Statistics showing responses for the south west quadrant from June 10, 2000 through June 10, 2008 show that 89 percent of the responses are longer than the 4 minute response 90 percent of the time recommendation of NFPA. These statistics only show where Station 2 units were first due and do not reflect the latter Station 1 times as second due responders.

**Chart 1- Station 2 total responses with “Response Time” 6/10/00-6/10/08
south west quadrant**

<i>Minutes</i>	<i>Responses</i>
0	6
1	3
2	21
3	14
4	21
5	46
6	122
7	123
8	103
9	65
10	39
11	13
12	6
13	2
14	1
15	2
16	1
Total	588
Total over 4 minutes response	524

Chart 2 demonstrates the types of calls that station 2 responded to in the south west quadrant. This does not include station 2 responses to other areas of the Township.

Chart 2- Responses by type of alarm

Spill, or leak with no fire	13
Wires Down	24
Medical Alarm	11
Appliance Fire	1
Fire Alarm	100
Basic EMS Alarm	50
Vehicle Fire	6
Outdoor Fires	24
Explosion W/No Fire	2
Agency Assist	5
FIU Investigation	20
CO Alarm	25
MVA/No Transport	11
No Transport/Rescue	21
Odor Investigation	201
Paramedic Alarm	17
Structure Fire	39
Public Assist	16
MVA/W Transport	4
Pole Fire	4
Total	594

What can be done to decrease response time to the south west quadrant of Concord Township?

Past research shows that the addition of manpower and apparatus has no bearing on how fast fire and EMS units are able to respond to the scene of an emergency. Research may suggest additional manpower does improve safety and efficiency on the fire ground. Emergency Services Consulting Inc. (2006) has demonstrated that there are no other fire or EMS units that are

geographically closer to the quadrant of study that would be able to respond more efficiently.

The next logical step is to research the addition of a facility to house responders and apparatus in the deficient area. This research has only demonstrated response time to emergency scenes and what factors most likely will challenge future response. Additional research is needed to support the idea of an additional facility.

A guideline for this additional research could come from CFAI(4th edition) a detailed assessment of the community risk would need to be performed to identify various levels of risk, based upon planning zones .Then, from the identified risk levels, an appropriate allocation of resources would be determined. CFAI Standards of response Coverage document is formulated utilizing detailed response time data, water supply statistics, economic indicators, fire loss data, population concentration maps, geographic and topographic data considerations, as well as public and employee comment. The limitation for this study to be completed for Concord Township in its current state is that most of this information is not available or current.

What factors influence response time to the south west quadrant of Concord Township?

In an independent traffic study performed by ODOT (2007) has determined that roadways in Concord Township in the area of study will increase dramatically by the year 2030 in signalized and stop- controlled intersections. This study demonstrates vehicle delay in timed seconds. This information has been converted to percentages for ease of understanding by the reader. It is also important to note that the information provided for the year 2030 has been formulated with the presumption that no additional growth would occur in the area. Since this study was performed, several small businesses and two large hospitals have been constructed.

Table A**Signalized Intersections**

Route	2007 Existing		2030 No build		% increase 2007-2030	% increase 2007-2030
	AM Peak	PM Peak	AM Peak	PM Peak	AM Total	PM Total
SR 44 Northbound and Johnnycake	20.4	25.1	30.4	81.1	+50%	+225%
SR 44 Southbound and Johnnycake	21.2	30.9	27.7	59.2	+31%	+92%
SR 44 and I-90 Westbound	86.2	25.9	201	80.4	+133%	+210%
SR 44 and I-90 Eastbound	21.9	57.8	32.1	156.5	+46%	+170%
SR 44 and Auburn Rd.	31	47.6	63.1	170.6	+103%	+258%
SR 44 and Girdled Rd.	18.4	43.4	94.8	174.1	+415	+301%

As demonstrated from our data in Table A, it has been projected that there will be over a 300 percent increase in traffic delays and congestion by 2030 for some areas. This increase will in turn create further delays for emergency first responders where signalized intersections exist.

Table B

Stop-Controlled Intersections

Route	2007 Existing		2030 No Build		% increase 2007-2030	% increase 2007-2030
	Am Peak	PM Peak	AM Peak	PM Peak	AM Total	PM Total
SR 44 Southbound and Morley	24.3	18.9	412.9	343.7	+1599%	+1718%
Morley and Hermitage	10.4	9.9	12.2	12.6	+17%	+27%
Auburn and Ravenna	15.5	13.2	35.6	21.4	+129%	+62%
Auburn and Concord Hambden	40.2	22.2	85.5	30.8	+112%	+38%
Crile and Auburn	12.3	22.5	14.4	77.3	+17%	+246%
Crile and Fredle	10.2	10.8	12.3	13.8	+20%	+27%
Crile and Girdled	13.1	16.6	22.2	81.4	+69%	+390%
Auburn and Girdled	13.1	11.1	196.2	119.5	+1397%	+976%

From that data compiled from Table B it is projected to have an increase in delays of over 1700 percent.

DISCUSSION

This report was evaluative research to show if cooperating with the local vocational school would be beneficial in lowering response times to the southwest quadrant of the community. Because this study was specific and unique to Concord Township, no previous information was found to make comparisons or assist answering the research questions from this study.

Information received for this research was obtained from multiple organizations looking at a common potential problem. All have conducted similar research specific to their impacted area such as traffic congestion, student population, and emergency responses. The studies provided by ODOT (2007) indicate that there will be an increase in traffic patterns and delays. Some of these delays are around 1900 percent. This will have a direct affect on the efficiency of emergency vehicles travels creating further delays while responding to calls.

Though it has been assumed that there were significant delays in response, figures provided from Firehouse Software indicate that delayed responses are real, and continue to exist, but have made no positive change over the past eight years.

Indicators in construction are present which show a large growth in the area of study, thus increasing demand on all community resources. These indicators predict not only additional demand on services, but additional demand on roadways and geography in the area.

Auburn Career Center demonstrates that a need exists for facilities for the future growth of student enrollment and the addition of adult education classes. Interviews with D. Buchs (2008) and R. M. Warner (2008) indicate that a joint facility could be the solution to the difficulties of both organizations, and that both organizations are entertaining the idea, but proof on need must exist before these organizations can invest time and money into further research.

A study on Closest Unit Response (2007) indicates that there is need for additional facilities in the southwest quadrant of Concord Township due to geography. The statistics from ACS Firehouse Software (2008) indicate that additional facilities in the quadrant would decrease responses by decreasing travel time.

Indicators are present to indicate a need of a facility for both Auburn Career Center and Concord Township Fire Department. The next step in research would be “How is such a facility constructed jointly?”

RECOMMENDATIONS

The first recommendation after this research is to move forward and provide additional research on the title of this paper “Can a joint school and fire station decrease response time for Concord Fire Department?” Data provided has indicated that Concord Fire Department is not meeting the national recommendations as indicated by NFPA for fire and EMS responses in the southwest quadrant of the community. Data has also indicated this entire geographical area of the community is in the beginning of a large growth trend.

This will affect all aspects of the community including, but not limited to population, traffic, student enrollment and increased need for all public services. Through information gathered during this research, it is indicated that there is an interest in the cooperation of two organizations to facilitate the needs of both, while maintaining fiscal efficiency.

Data has provided information to show that an extremely large increase in traffic, population and congestion is pending. The development in the area of concern has since increased making the study out of date so to speak.

The second recommendation is that further in depth research is needed to implement how to build, maintain and provide manpower for a joint facility. This research confirmed that Concord Township Fire Department does not meet national response standards recommended by NFPA. So now that the “why” has been answered, the “how” must answered.

It is further recommended that the Concord Township Fire Department and Auburn Career Center continue to research a joint facility to confirm that this is in fact the best solution for both organizations. A facility to serve the needs of two different organizations not only creates a unique situation, but could set a new standard in the way private and public entities join forces to answer common problems.

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