

University of Dayton

Masters of Public Administration Program

Franklin Township

Fire and Emergency Services Capabilities and Response

Independent Research Study – April 2014

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Executive Summary

The Franklin Township Fire and Emergency Services Capabilities and Response Study was conducted in order to provide an independent research analysis of the current multi-agency approach to providing Emergency Services throughout the 33 square mile coverage area of Franklin Township to include the incorporated and unincorporated areas of the jurisdiction. This study evaluated the current emergency operations of four separate agencies to include Franklin Township, the Village of Carlisle, Franklin City, and Joint Emergency Medical Services. Each agency was evaluated for effective staffing, equipment, facilities, and emergency response capability. The intent was to determine how well the current operations and capabilities matched industry standards for effective and safe emergency response throughout the community.

This comparative approach served to evaluate areas of potential regional cooperation and collaboration in order to recommend the optimal emergency delivery model possible for the residents of this community while working within the fiscal confines of each jurisdiction. The development of specific service level standards for Franklin Township was based on local risks and hazards, community expectations, and the evaluation of the costs of providing those services at the targeted service level established. A number of sources, including the Insurance Services Office (ISO), International Association of Fire Chiefs (IAFC), American Medical Association (AMA), the National Fire Protection Association (NFPA), and the Center for Public Safety Excellence (CPSE) were consulted in the recommendations resulting from this study.

Initial planning for this analysis required an understanding of a variety of key considerations as they pertain to the community needs and response configurations. Identification of the current community risk levels and the scope of emergency response were assessed to evaluate specific risks for citizens, property types, and community assets. A basic understanding of the principles of fire propagation and the fire growth time-temperature pattern as it pertains to response times to a fire scene was established. Response times were benchmarked against EMS survival rates and NFPA standards for effective emergency response to fire and other critical emergencies.

A comprehensive analysis of available data and interviews were conducted to evaluate each agency for its current capabilities and response standards. Significant differences and deficiencies were discovered in the realm of quality of services residents receive based on their geographic location within the Franklin Township. The current multiagency approach to emergency service delivery and staffing were found to be insufficient and incapable of meeting performance objectives for a significant area of the response configuration. In order to fully meet the response and staffing model recommendations established through this report, numerous key issues would need to be addressed.

In order to provide the best possible level of emergency services to all residents of this community, and to do so in a fiscally responsible and sustainable response model; the study found that these communities should seek to establish and properly fund a Single Emergency Response Fire & Emergency Medical Agency to provide a comprehensive all-hazards mitigation response. The system would ensure adequate management, leadership, and accountability while serving to provide a 24 hour in-house response from three- stations with effective, qualified and cross-trained personnel to provide consistent and immediate emergency Fire & EMS response throughout the overall community.

Introduction

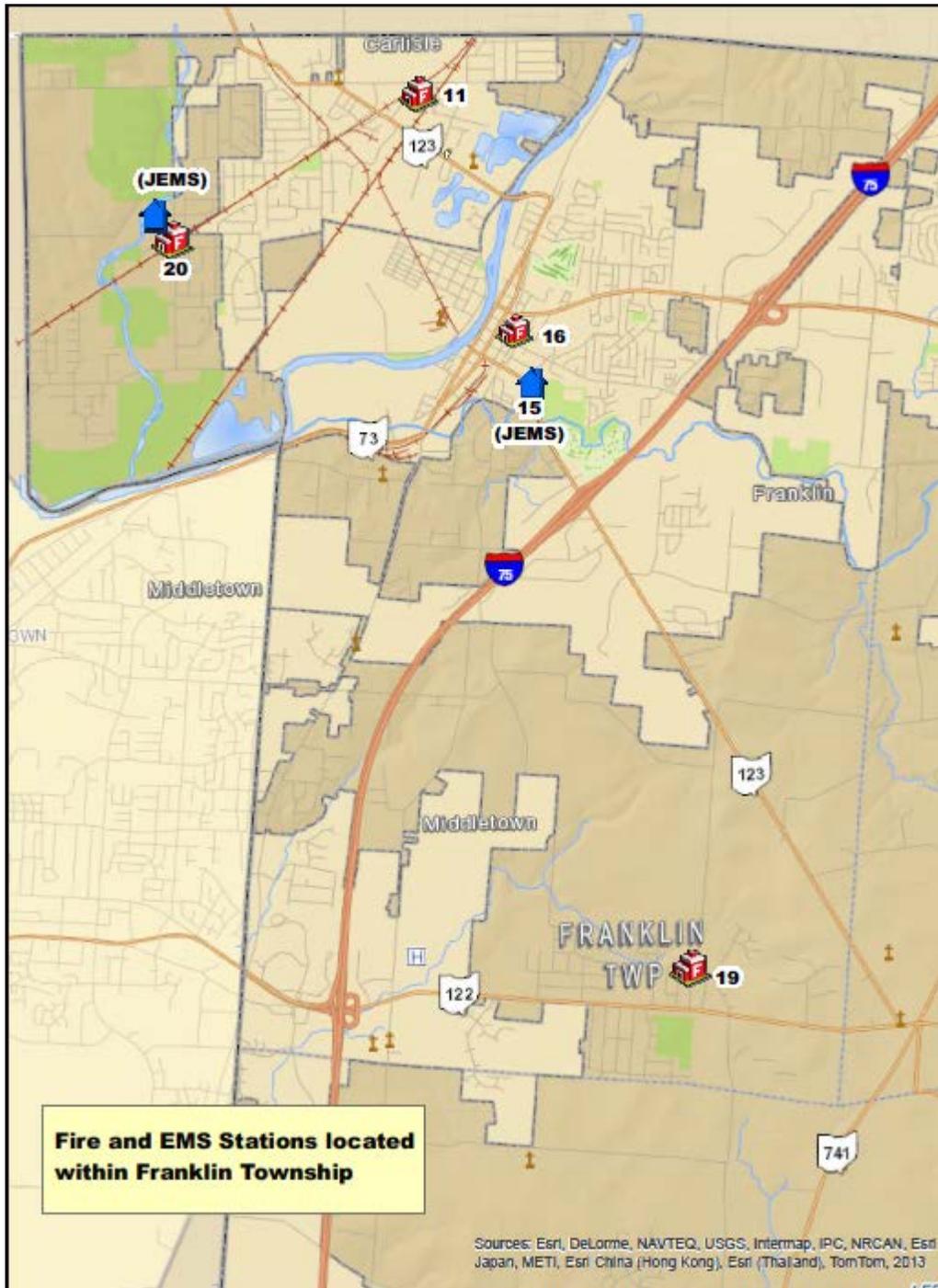
The Franklin Township Trustees contacted the University of Dayton, Masters of Public Administration program in the fall of 2013 to request assistance with the evaluation of the current level of emergency services for all residents of Franklin Township to include both the incorporated and unincorporated areas of the Township to ensure that all residents were receiving equitable and effective emergency services in the realm of Fire and Emergency Medical Response. In order to accommodate this request, an independent research project was proposed and accepted to evaluate the current operations of the Franklin Township Fire Department for effective staffing, equipment, facilities, and emergency response capability. The intent was to determine how well the current operations and capabilities matched industry standards for effective emergency response from the Franklin Township Fire Department. In addition, it was deemed prudent to evaluate the entire region for its emergency response capability and compare areas of difference for capability and emergency response including response times. Furthermore, this comparative approach would serve to evaluate areas of potential regional cooperation and collaboration in order to recommend the optimal emergency delivery model possible for the residents of this community while working within the fiscal confines of each jurisdiction. In order to affect the project goals of system evaluation and to propose recommendations for potential improvement, interviews were scheduled and conducted with Chief Officers from Franklin Township, Carlisle, Franklin City, and Joint Emergency Medical Services (JEMS). This approach was to ensure representation for responders serving in Franklin Township to include the unincorporated areas, the Village of Carlisle, as well as the City of Franklin. In concept, it would be expected that residents in any given area of the community who pay the same amount in taxes for emergency services should expect relatively the same level of emergency response, training, and capability when they dial 911.

Background Research and Standards

In order to evaluate current operations and make effective recommendations for strategic planning, this study first sought to benchmark the current service delivery system based on established professional standards and statistical evaluation. The development of a specific service level standard for the Franklin Township was based on local risks and hazards, community expectations, and the evaluation of the costs of providing those services at the targeted service level established. A number of sources, including the Insurance Services Office (ISO), International Association of Fire Chiefs (IAFC), American Medical Association, the National Fire Protection Association (NFPA), and the Center for Public Safety Excellence were all consulted in the recommendations resulting from this study.

Initial planning for this analysis required an understanding of a variety of key considerations as they pertain to the community needs and response configurations. Identification of the current community risk levels and the scope of response needed involved evaluating specific risks for citizens, property types, and community assets. A basic understanding of the principles of fire propagation and the fire growth time-temperature pattern as it pertains to response times to a fire scene was established. Response times for medical emergencies were benchmarked against EMS survival rates based on arrival times of Basic Life Support (BLS) and Advanced Life Support (ALS) trained crews. An evaluation of alarm response patterns and the impact of emergency response times were conducted. The certification and training of FTFD members were evaluated to determine if they met national standards and were appropriate for an all-hazards mitigation approach system. The results and recommendations of this research process are outlined in the following sections of this report.

Current Fire/EMS Facilities within Franklin Township



Franklin Township Fire Department

The Franklin Township Fire Department is an all-volunteer fire department operating out of two township facilities. The Franklin Township Fire Department proudly serves its community with approximately 50 dedicated, state certified on call volunteers who, when available respond from home to the community's fire related emergencies. These community volunteers provide emergency fire protection services primarily for the northwest and southeast regions of the township and assist surrounding jurisdictions when requested. The Franklin Township Fire Department has been protecting Franklin Township citizens since July 24, 1969 when the Hunter Volunteer Fire Department began operations to protect a mostly rural community. The department has gone through relatively minor transitions over the years and currently is responding to fire emergencies with a volunteer from home response out of two locations. The volunteer response staffing model utilized by the Franklin Township Fire Department creates a built in delay for emergency response of typically 4-9 minutes for personnel to respond from home to the fire station, don protective equipment, and then respond to the community's emergency with an average travel time of 3-4 minutes. Over the past 3 years, the department's average response time for the first unit to arrive on an emergency was 10.13 minutes from time of dispatch. On eleven separate incidents during the past 3 years, the department exceeded this time to get the first unit on scene of a possible structure fire. In many cases, due to their staffing model, the first unit on scene of a fire would be a staff vehicle with no suppression capability. Fire Apparatus could take significantly longer to respond and arrive on the scene. Daytime staffing for the organization is scarce with no assurance that fire apparatus will respond in a timely manner. The industry standard for effective emergency response for fire and medical emergencies is 5 minutes and 20 seconds following dispatch for suburban communities such as this. The time standard is based on 1 minute 20 seconds for turnout time and 4 minutes travel.

Franklin Township Fire Facilities:



Fire Station 19 is located at 3773 Robinson-Vail Road and houses two engines, one rescue-pumper, one tanker, one brush truck, and one utility truck. Station 19 was built in 1970 as Station 1 of the Hunter Volunteer Fire Department. In 2002 the station was remodeled to create a modern kitchen and to allow the station to sleep up to eight people. The station previously staffed a 24 hour JEMS crew which responded to the southern area of the township until 2013.



Station 20 is located at 7901 Keays Road. The Twin creek station houses one rescue, one engine, and one brush truck. The station was originally built in 1976 and at that time staffing coverage was contracted to the Village of Carlisle. In 2005 the contract with the Village of Carlisle expired and the Township began to staff the station. In addition to the fire apparatus at this station there is also a medic staffed by a 24 hour JEMS crew.

The organization is currently led by Chief Steve Bishop and Assistant Chief John Daly who run day to day operations and respond directly to emergency scenes in department issued staff vehicles. Several interviews were conducted with the Chiefs to learn the organization and assess current operations and needs. Tours of fire stations revealed facilities that appear outdated, undersized and in need of repairs; overall the facilities are not equipped to meet the needs of modern day fire service operations. The fire apparatus for the most part seemed to be in good working order for its age and based on interviews have reportedly passed NFPA standards for annual pump tests, ladder tests, and SCBA (Self-Contained Breathing Apparatus) tests by outside certified technicians. The department received federal funding in 2007 and as a result appears to have adequate firefighter protective gear and SCBA equipment. The department operates primarily on a passive leadership and mentorship style operation where most information is passed along through informal channels. According to the interview, they “try to make the environment comfortable and easy for the volunteer personnel.” Each member is required to meet the state of Ohio Volunteer Firefighter 36 hour certificate program to become operational. Each member is required to make 20 percent of the runs annually and attend 30 hours of training annually. Training is offered every week and most of the personnel attend more than the required hours. Volunteer personnel are paid a stipend of \$16-19.00 per run and all personnel from both stations are permitted to respond for each and every emergency. The department responded to 158 alarms in 2013. Current pay structure is \$16 per daytime run and \$20 per nighttime run. Daytime runs are those occurring between 07:00 and 21:00 and night runs are from 21:00 to 07:00. Officer monthly compensation: Chief \$400.00, Assistant Chief \$300.00, Captains \$220.00, Lieutenants \$190.00

From an administrative perspective the organization is lacking administrative staff to provide formal structure, policies and procedures, fiscal management, and essential training components.

The policies are outdated and currently not in use for departmental guidance, there are no rules and regulations, or any formal system of accountability. From an operational standpoint there does not appear to be any Standard Operating Procedures or Guidelines (SOPs and SOGs) to direct essential department functions such as emergency scene operations, safety procedures, and lines of authority, daily equipment checks, or training standards. Upon request of current data for this study; there was no annual report to analyze basic department functions, activities, or statistics such as total calls for service, response times, failures to respond, apparatus out service, community events, and department updates and accomplishments. All data for analysis had to be created or requested out of the county system, of which the FTFD were very cooperative to assist with. Under the current administrative structure, there appears to be a lack of strategic planning and long range forecasting.

The current Fire Levy is at a rate of 2.0 based on 1984 property values and the department is in need of additional revenues to improve operations and replace equipment. An additional levy has been requested by the Fire Department and is currently being considered by the elected officials. The Fire Department has requested additional fiscal resources in the past; however it appears the department has not completed a strategic plan to create a long range forecast to include a capital improvement plan, an apparatus replacement schedule, a training needs assessment, and a sustainability plan for effective emergency operations and staffing. This year, budgetary requests were submitted for current operational needs and a budget analysis was conducted in 2012 as well. The estimated budget for the Fire Department in 2014 is \$340,000 of which approximately \$156,000 will be generated from Fire Levy property taxes.

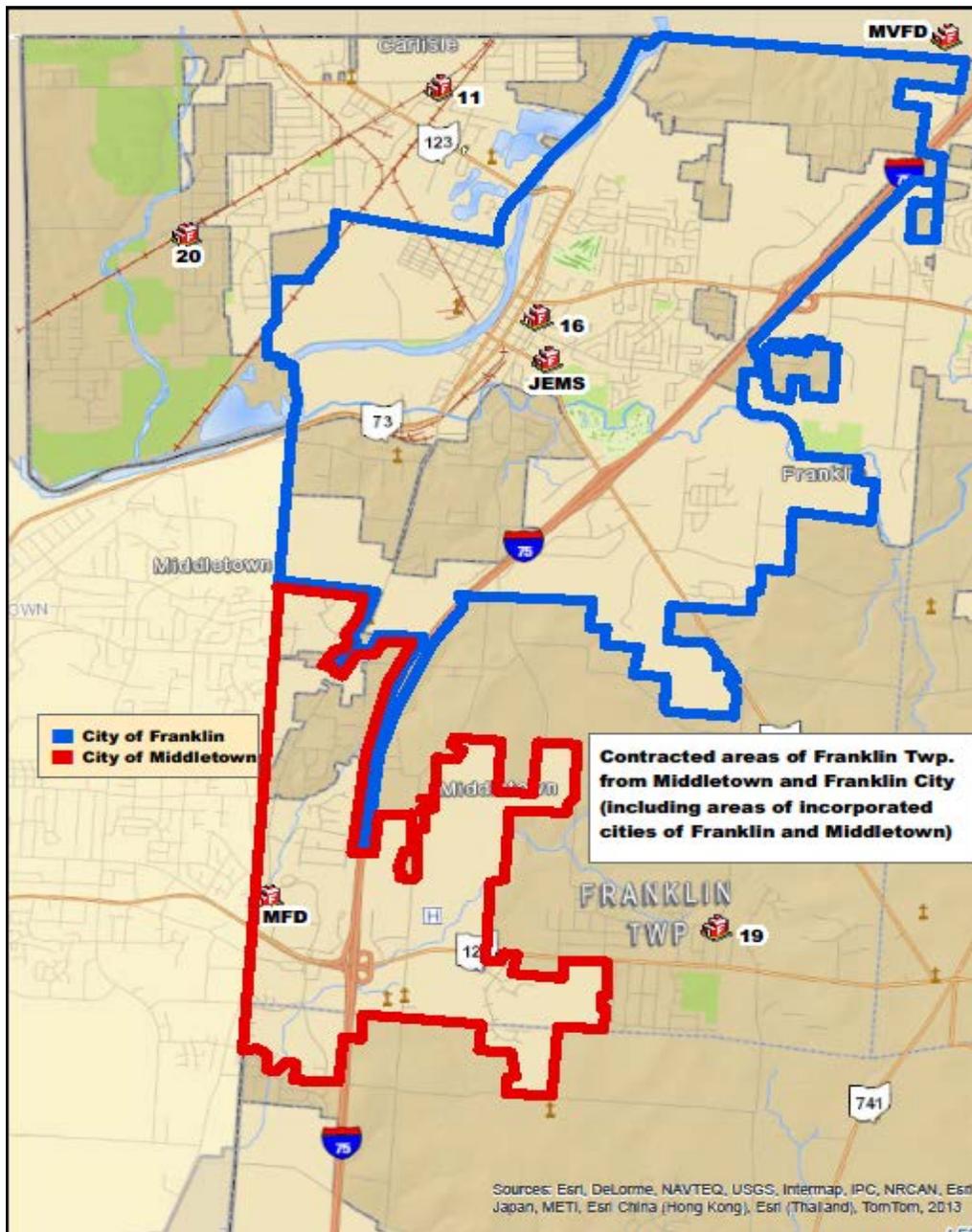
The department conducts all interviews and hiring on an informal basis without the benefit of guidance from a human resource department or administrative assistance. Volunteer recruits are

cleared to participate as firefighters from family doctors and are not subjected to rigorous physical fitness testing. The department does not conduct polygraph screening or thorough background analysis on candidates. Volunteer Firefighters are recruited, sent to a 36 hour firefighter course, and placed in service for emergency operations. There is currently no training manual for firefighter recruit check-offs to ensure safety and competency. New potentially inexperienced personnel receive some mentor level training and eventually may be allowed to function in Immediate Danger to Life and Health (IDLH) environments such as interior structure firefighting without any additional formal training or evaluation. From an administrative perspective, Captains and Lieutenants are promoted based on personal interviews rather than formal testing, certifications, and job function analysis. Officers are then assigned to each station to assist with operations and training without additional management or professional officer required training. Some officers have requested and been approved additional training however this occurs on a case by case basis.

From an operational perspective, the department responds on medical calls to support JEMS for some medical responses but the department provides no training in regards to HIPPA or Infection Control as mandated by federal guidelines. The department has State of Ohio certified Emergency Medical Personnel (EMS) personnel who are not allowed to utilize their skills to assist residents with life threatening emergencies because they do not utilize a regional protocol nor a Medical Director or any process by which to allow personnel to provide vital emergency care. NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments 2014 Edition states that response times for suburban area of 500-1000 people/square mile require on structure fire response to assemble minimum staff of 10 responders within 10 minute response time with an eighty percent objective. Current staffing and response data

indicates that the department routinely fails to meet this standard. Based on the information gathered throughout this process, the Franklin Township Fire Department has significant room for improvement in the realm of emergency response, training, administration, and quality assurance to improve its capability to respond to the community's emergency needs within the non-contracted, unincorporated areas of the township.

Franklin Township Fire Response Map



Based on current volunteer staffing and response from home, the majority of Franklin Township does not meet industry standards for effective emergency response in the unincorporated areas. Due to contract agreements with Middletown and the City of Franklin, residents in the township highlights areas above receive immediate emergency response from staffed facilities which meets the standards for the majority of areas listed. These residents pay the same amount in taxes however, receive a more efficient and reliable level of emergency response than their township neighbors who are not covered by response contracts. (See JEMS for EMS response.)

Village of Carlisle Fire Department

The Village of Carlisle is a community of approximately 5,000 people which prides itself as being home to “a fine school system, a diverse business and industrial base, and a strong family oriented community... with a small town rural atmosphere” The Village has constructed three industrial parks in the past 15 years and several new housing developments and has actively solicited commercial and industrial businesses. (Carlisle website) The village area covers approximately 3.5 square miles with a population density of just under 1400 people per square mile. The Carlisle Fire Department is a Volunteer Fire Department that was established in 1967. The department is administered by part-time Fire Chief Krista Wyatt who is responsible for the daily operation of the department. The department is comprised of 21 volunteers including 2 Assistant Chiefs, 2 Lieutenants, and 17 Firefighters with varying levels of certification and experience. All personnel respond from home when available for alarms.



The department operates out of Fire Station 11 at 367 Lincoln Drive, Carlisle OH 45005. Station 11 houses the following apparatus: Rescue 11 - 2000 Pierce Pumper, 1000 gallon tank, equipped with extrication equipment and some water rescue equipment. Engine 12- 1996 Pierce pumper, 1000 gal tank, equipped with some water rescue equipment. Attack 14 - custom built Ford F250 flat bed with a 250 gallon tank and pump, water rescue equipment including our "Gumby" suits and inflatable rapid deployment craft (RDC).

An interview was conducted with Chief Wyatt to discuss the department, its current operations, and potential plans for the future. The department passed a levy in 2010 and has an operating budget of 151,600 for 2014. In 2013, the department responded to 117 alarms (146 alarms in 2012) with an average response time of 8.73 minutes for the first unit to arrive on scene which like Franklin Township could be a staff car with no suppression or EMS capability. During the interview, the Chief expressed concerns regarding the ability to ensure fire apparatus response from 0500- 1600 hours based on staff availability. The department recently experienced a daytime residential structure fire where the Chief responded immediately to the scene but had no Carlisle personnel available to respond in the first 60 minutes of the emergency. All fire units that responded to this incident were mutual aid companies from surrounding jurisdictions which delayed the response and allowed the fire to grow and cause significantly more damage. A staffed Engine from MVFD was the first unit to arrive on scene and extinguished the fire.

Failure for units to respond in a timely manner is not an unusual circumstance for this all volunteer organization. As such, Carlisle Fire Department actively participates with the surrounding communities and has mutual-aid agreements with the City of Franklin, Franklin Township, Miami Valley Fire District, Clearcreek Township, and Madison Township to strengthen the overall fire protection abilities of the village. There are many operational similarities in operations, certification, and training between Carlisle and Franklin Township. Carlisle does however utilize a formal Recruit Check-off Book and has annual required trainings for core job functions such as emergency driving and ladder operations.

In order to provide adequate Emergency Medical Services to the community, the department relies on JEMS for EMS Units responding from Station 20 and Station 15. Carlisle, like Franklin Township Fire Department, also does not allow personnel to utilize their State of Ohio medical

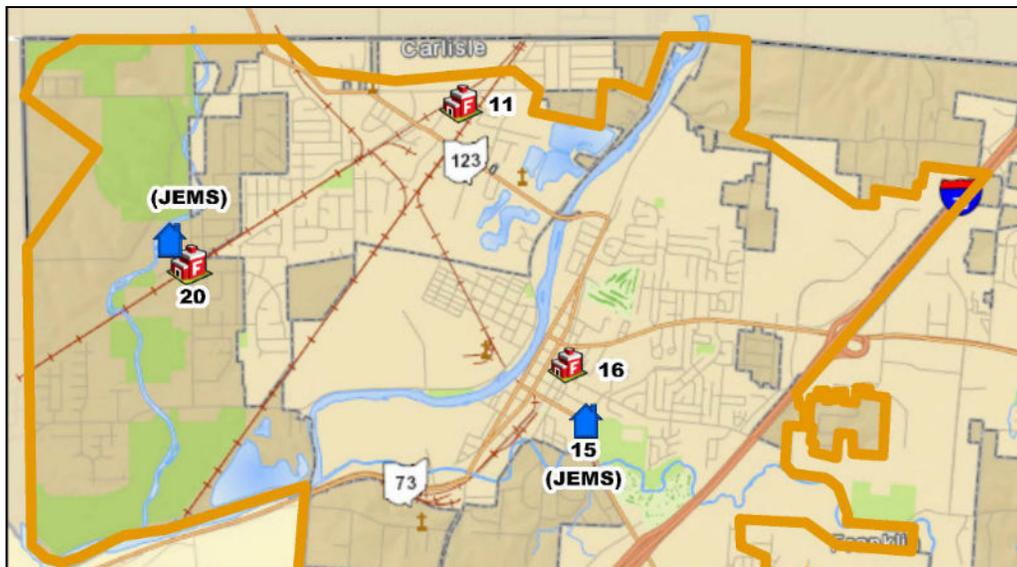
certifications to assist patients during an medical emergency, nor does it utilize local medical protocols or have a Medical Director.

Department SOPs are out of date and currently not in use. The department relies on informal communication and weekly trainings to set expectations for emergency response and firefighter conduct. The department appears to have adequate equipment and apparatus for emergency response but does not have any type of capital improvement plan, apparatus or equipment replacement plan, or any strategic planning. Based on the current response capability and lack of available staff to respond in a consistent and timely manner, the department currently does not meet fire service industry standards. The citizens of the Village of Carlisle would greatly benefit from regional fire and EMS based system which provided 24 hour emergency response through the use of in-house cross-trained staff to provide immediate response for all emergencies.

Carlisle Fire and EMS Response Maps



Fire Response Listed Above: Based on current volunteer staffing and response from home, the Village of Carlisle Fire Department does not meet industry standards for consistent or effective emergency response within their jurisdiction therefore no areas above are highlighted. Although a staff car may respond directly to the scene, fire suppression response is delayed and may fail to respond all together as indicated in a recent structure fire. There are no contract agreements for fire response; however, the village relies heavily on fire mutual aid response from Franklin Township, Miami Valley Fire District, Madison Township, and the City of Franklin.



EMS Response Map: Based on the 24 hour in-house contract staffing for EMS, JEMS provides the Village of Carlisle effective and timely emergency response which meets response recommendations for emergency medical response and travel for a majority of the village.

Joint Emergency Medical Services

JEMS operates as a Joint Ambulance District serving the communities of Franklin Township and the Village of Carlisle. JEMS provides Advanced Life Support services with in-house staffed EMT Basic and Paramedic personnel on a 24 hour basis currently from 2 locations within Franklin Township. This joint district was founded in 1982 to provide a consistent, efficient, and timely emergency medical services model throughout the 33 square miles of Franklin Township from 3 strategically placed locations. The creators of this joint district realized in 1982 the benefit of providing immediate response to medical emergencies in order to save lives and provide the best possible care in a fiscally responsible manner. This system remained in place until 2013, when the City of Franklin began providing EMS services to the City as part of its Fire Department operations. This transition in services has drastically altered the operations of JEMS, reducing its budget, staffing, and response capability to the remaining coverage areas.

JEMS Facilities



Station 15 – Headquarters

201 E. 6th St. Franklin, Oh 45405

Station 20

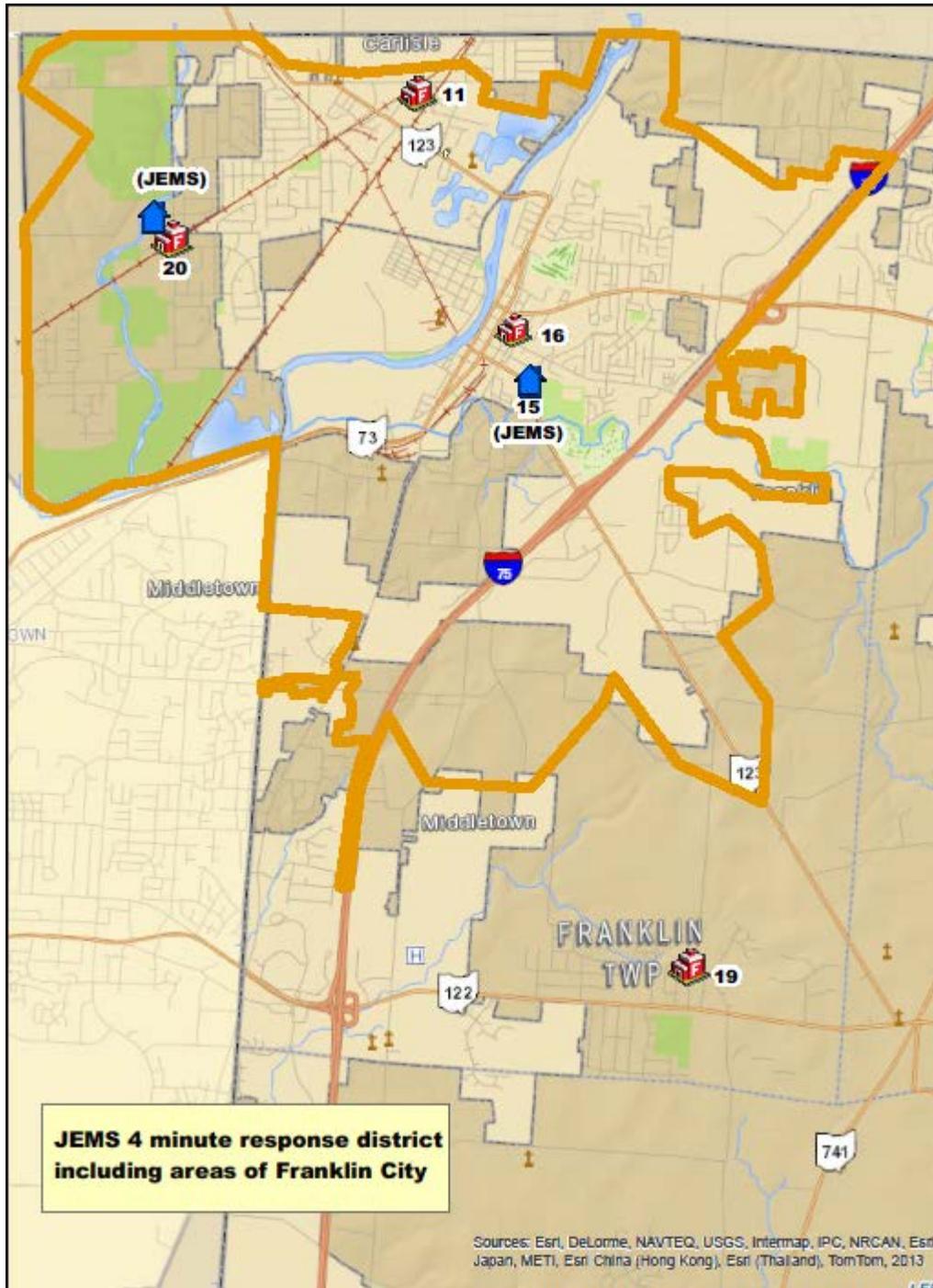
7901 Keays Rd. Franklin, Oh 45005

Station 19- Not currently Staffed with a Medic

3773 Robinson-Vail Road Franklin, Oh 45005

In 2013, JEMS responded to 1394 emergency alarms down from over 3500 alarms in 2012. The average response time for the in-house crews in 2013 was 7:10 minutes. This included 120 mutual aid responses to surrounding jurisdictions and represented an increase in response times from the 2012 where JEMS was responding from 3 stations and covered the entire 33 square miles with an average response time of 6:34 minutes. This response model provides valuable evidence of the benefits of in-house staffing to affect rapid emergency response to emergencies within this overall community. Under the restructuring of the organization, the Joint EMS District provides staffing for 5 personnel 24 hours per day to include 2 Medic Units and a supervisor staff vehicle. The 2014 approved budget is \$1,275,000.00 and is based on 2013 tax levy which provides revenues to fund the Joint District. Currently JEMS provides services to all of the unincorporated areas of Franklin Township and the Village of Carlisle. JEMS operates administratively with a Chief Officer, a Fiscal Officer, and several part-time supervisors. JEMS employs 33 part-time in-house personnel for emergency response. Of those individuals, 23 are currently cross-trained as State of Ohio firefighters, although they are not permitted to function in that capacity while working for JEMS. Personnel procedures appear to be in place and the quality assurance and accountability measures that are in effect appear to meet the organizations needs at this time. The department currently operates under the license of a Medical Director and follows regional medical protocols and training requirements. From a budgetary perspective, JEMS is still in the division of assets process with the City of Franklin. The station facilities are in poor condition and will need major repairs or replacement over the next 5-10 years. The fleet of medics appears to be aging and will require significant repairs or replacement in the next several years. The department has created a Capital Improvement Plan and conducted long range planning and forecasting models following the separation. The proposed apparatus and equipment replacement plan is in draft form with serious concerns regarding the need for additional financial resources to remain sustainable in the future.

JEMS Response Coverage Map



Based on the 24 hour in-house staffing of two locations, JEMS currently meets response recommendations for emergency medical response and travel for a majority of the township and Village of Carlisle. Due to budget and staff reductions in 2013, JEMS closed its operations at Station 19 and as such no longer meets acceptable response standards for timely response into the southern and northeast regions.

City of Franklin - Division of Fire & EMS

The City of Franklin covers 9.24 square miles and has a population of just under 12,000 residents based on the census estimates from 2012. The city is characterized as a suburban environment with population density of over 1200 people per square mile. As the city has grown, the demands for emergency services have grown as well. The City of Franklin – Division of Fire & EMS has undergone significant changes to meet these demands and to provide an efficient and effective system of emergency services to meet the needs of the community. The department began as an all-volunteer Fire Department and over the years has transitioned as needed to meet the increasing demands of the community. In 2012, voters approved a Fire/EMS levy to allow the department to provide comprehensive in house staffed personnel to provide an all hazards mitigation response to Fire, EMS, and Hazardous Material Emergencies. Beginning on January 2, 2013 the department took on the responsibility of providing Emergency Medical Services in addition to the rest of the full service Fire and Rescue duties that were previously offered. The department utilizes a combination of full and part-time personnel who are cross-trained in both Fire and EMS disciplines to provide 24 hour immediate response capability for Fire, EMS, and Rescue capability. The department provides 24 hour in-house staffing of 9 Firefighters per day who are also certified EMT & Paramedics to staff 2 dedicated advanced life support units, as well as several cross-manned suppression, rescue, and EMS vehicles to respond accordingly to Fire and Rescue emergencies. If necessary, the department can place a third EMS vehicle in service as needed. In addition, the department maintains the capacity to recall off duty personnel and volunteer firefighters to up staff additional equipment if necessary. This flexibility and immediate response capability results in an overall average response time for 2013 of 5:11 minutes for all emergency responses (including the response into Franklin Township). Average response times for fire emergencies to Franklin Township in 2013 were 7:38 minutes.

The department responded to a total of 2876 alarms in 2013. This represented a significant increase in call volume due to the addition of the EMS transport services. The department responded to 787 fire and rescue alarms, and 2089 emergency medical service calls. The cross trained staff allows for a significant increase in efficiency and capability where first responders are engaged to provide immediate assistance to residents regardless of the nature of the emergency. Unlike both Franklin Township and Carlisle, Franklin City firefighters operate under a medical director and can actively engage in direct patient care which improves patient outcomes. The department provides immediate fire and rescue services to all areas of the City of Franklin as well as to portions of unincorporated Franklin Township via a longstanding contracted Automatic Mutual Aid Response (AMARS) service agreement. The department responds in a mutual aid capacity to assist surrounding jurisdictions upon request for both fire and EMS. For fire mutual aid requests to volunteer staffed departments, the City of Franklin calls in a volunteer response rather than depleting its available staffed resources. The current established practice should be reviewed and all jurisdictions should evaluate how to provide the best level of emergency response to the entire region.



Station 16 is located in downtown Franklin at 45 East 4th Street, Franklin, Ohio 45005.

The station houses the following Apparatus:

Engine 16: TeleSquirt, 2,000 Gallons Per Minute (GPM). Pumper. 500 gallons of water.

Engine 17: Compressed Air Foam System (CAFS). 2,000 GPM Pumper. 1,000 gallons of water.

Engine 18: Rapid Intervention Crew (RIC). 2,000 GPM Pumper. 1,000 gallons of water.

Ladder 16: 105' Aerial Ladder with 2,500 GPM Pump. 500 gallons of water.

Rescue 16: Heavy Rescue. Mobile Breathing Air Compressor, Full Compliment of Extrication Tools (Jaws of Life)

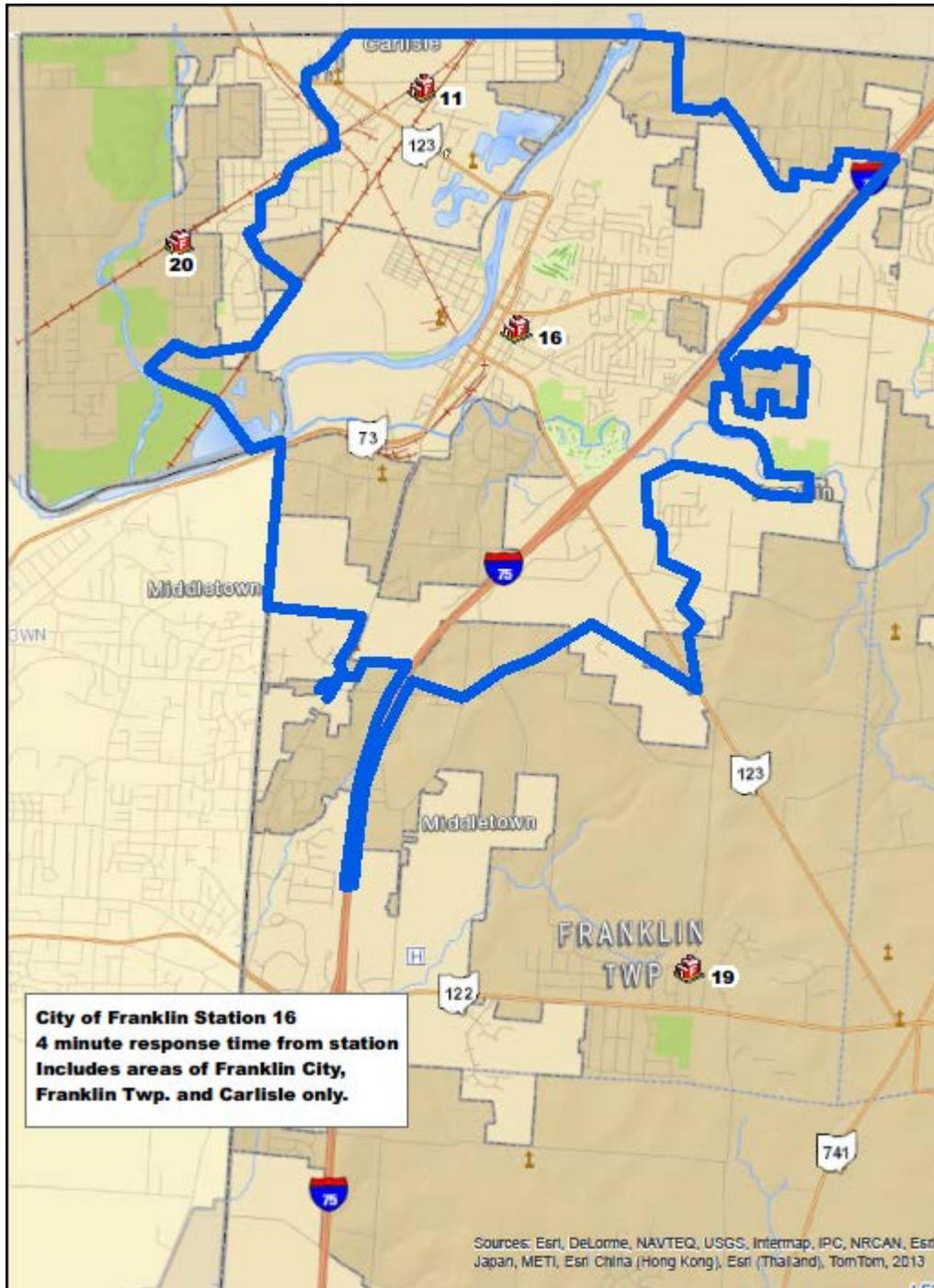
Brush 16: Skid Unit Pick-Up Truck to fight brush fires.

Boat 16: Rigid Haul flat bottom boat/platform. Honda Outboard Motor.

Boat 17: Inflatable Avon boat. Honda Outboard Motor.

An interview was conducted with Chief Westendorf to discuss operations of the department and to tour the current facility. The fire station is relatively new and currently meets all necessary requirements of a fire facility for safe and efficient operations. From an administrative perspective, the department has a more traditional organizational chart and command structure with a Fire Chief, 24 hour career Captains, Lieutenants, and career and part-time Firefighters/EMTs and Paramedics. Staff are assigned specific roles and responsibilities with the organizational structure. The organization operates under defined Standard Operating Guidelines, and all new personnel must pass specific recruit standards and an evaluation process. A comprehensive training program exists with certified instructors to ensure competency and operational readiness. The department completes an annual report to benchmark services that were provided. Franklin City Fire Department utilizes a strategic planning process to develop long range planning and has an established Capital Improvement and Apparatus Replacement plans. As part of the quality assurance process, Fire Officers are sent through formal development training to develop emergency scene management and personnel management skills. New staff undergo a formal hiring process to include rigorous physical standards and specific medical testing. The Mission Statement is: "To provide loyal and compassionate fire and rescue services utilizing highly trained professionals dedicated to the community we serve." This department has made significant changes to staffing, equipment, and operations to provide the optimal emergency delivery system to the community within the budgetary constraints.

Franklin City Response Coverage Map



Based on the staffing in-house 24 hours from Station 16, Franklin City is able to meet industry standards for response recommendations for both Fire and EMS response and with recommended travel times of 4 minutes for over ninety percent of Franklin City, a majority of the Village of Carlisle, and a significant amount of the contracted areas of Franklin Township from their current location in downtown Franklin. This station is staffed 24 hours per day with 9 cross-trained personnel to respond to multiple Fire and EMS Emergencies simultaneously.

Evaluation: Emergency Response System for Franklin Township

This study examines predicted response times and geographic coverage areas for Fire and EMS department units deployed from the five current facilities within Franklin Township, Warren County, Ohio. Upon analysis of resource deployment and the geographic areas expected to receive coverage from Fire Department and JEMS units responding to an incident, in the unincorporated areas of Franklin Township and the Village of Carlisle, it was revealed that the region currently does not deploy sufficient personnel and apparatus in a consistent and timely manner to meet performance objectives described in current industry standards. Furthermore, the volunteer from home response model has failed to provide a reliable and consistent level of emergency response based on NFPA 1720 and CFAI standards for volunteer operations in the suburban environment and thus failed to meet industry standards. Specifically, the analysis of the Franklin Township and Village of Carlisle Departments conclude that these departments cannot adequately deploy apparatus and personnel to fire scenes in order to provide for safe and effective rescue and fire suppression operations in a timely or consistent manner. This finding is based upon a multitude of factors including time, training, and response capabilities. In the emergency setting, time is one of the most critical elements to determine survival from a medical emergency or rescue from a structure on fire.

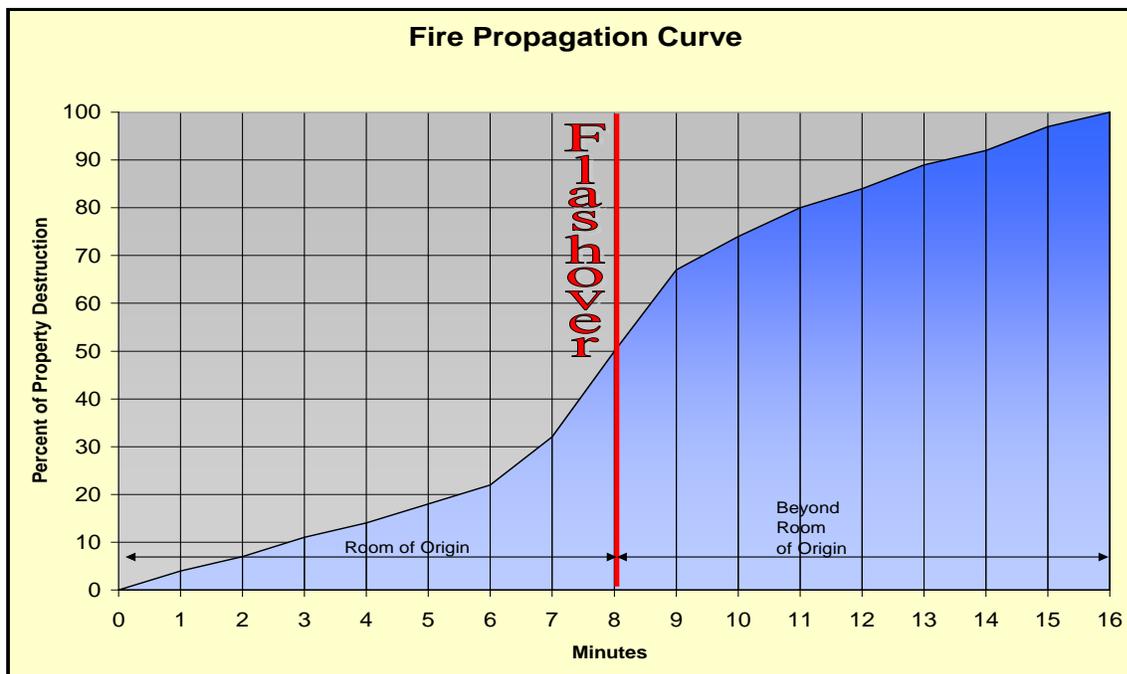
Emergency Medical Response Issues:

In the realm of survival from critical life threatening medical emergencies, both rapid response and effective training are essential to provide quality life saving measures to residents of the community who may be experiencing a serious medical event. NFPA states that a total of four trained EMS personnel to include a minimum of 2- EMT Basics and 2 Paramedics should arrive on scene within 8 minutes travel time to the emergency 80 percent of the time. Although JEMS

in-house staffed response meets a portion of this standard, the lack of EMS participation from FTFD and Carlisle and the delayed response times fail to meet the NFPA Standards as well as those set forth by the American Heart Association. Of the 4573 emergency alarms for all four jurisdictions, 3483 (over 76 percent) were emergency calls for medical emergencies, many of which were time dependent emergencies. Fast emergency medical response with adequately trained personnel is essential in improving survival rates and providing high quality emergency medical care. The current system provides excellent response to some areas of the region while providing poor and unreliable cover to other areas as indicated in the response maps.

Fire Suppression Deployment Issues:

The National Fire Protection Association provides evidence that rapid and aggressive interior attack can substantially reduce the human and property loss associated with structural fires. At each stage of a fire's extension beyond the room of origin, the rate of civilian deaths, injuries, and property damage grows exponentially. Rapid response with adequately training personnel is essential for safe and effective fire ground operations.



With today's modern light-weight construction and highly flammable interior contents, fires rapidly grow beyond the room of origin. Early recognition of the fire, effective dispatch, efficient response, and experienced personnel are key elements of a successful fire suppression response. An early and aggressive offensive initial interior attack on a working structural fire results in greatly reduced loss of life and property damage. The current volunteer response model fails to provide adequate resources in a timely manner to affect a positive outcome. The results of a delayed fire response can drastically affect the outcome and places emergency responders and citizens at a greater risk. This was evident in a recent Carlisle structure fire where the closest volunteer Fire Engine failed to respond causing a significant delay in attacking the fire. Due to no fire apparatus on scene, a police officers and the Fire Chief entered a potential IDLH environment without the protection of SCBA and hose lines to rescue the occupant's pets while the fire grew from a small location to a fully involved attic and structure fire. The progression of a structural fire to the point of "flashover" (the very rapid spreading of fire due to super heating of room and contents and other combustibles) generally occurs in less than 10 minutes. The most important elements in limiting fire spread are the quick arrival of sufficient numbers of trained personnel and equipment to attack and extinguish the fire as close to the point of origin as possible.

Facility Issues:

The current facilities and practices were evaluated for compliance and measured against recommended fire service standards. Through this evaluative process a number of critical substantive issues were identified. All of the department facilities with the exception of Franklin City were all found to suffer from some of the same general deficiencies. Some of the more notable station deficiencies include the following observations.

Facilities are undersized and inefficient for their intended use and they don't comply with current building code requirement or fire service standards. Apparatus bays are too small for modern day fire apparatus. Decontamination facilities within the fire stations currently do not meet code requirements for Infectious Disease Control and Blood Bourne Pathogen standards. There are no current training facilities to address the multi-discipline all hazard training requirements of a modern fire service. Facilities are devoid of any mixed gender sleeping quarters for 24 hour operations. Facilities lack a dedicated turnout gear (firefighting protective ensemble) room, leaving gear routinely exposed to sunlight and diesel exhaust particulates, which over time break down the protective properties of the equipment.

Emergency Response Capability:

The current emergency response system for areas covered by Franklin Township and the Village of Carlisle fail to meet these standards and currently put the community and the firefighters at greater risk based on the organizational standards, levels of training, and delayed response times for both Fire and EMS response. There is an unequal level of response for citizens who live in different areas of the region and pay the same in tax revenues but receive drastically different levels of service. An example would be for a township residents who has a structure fire in the in the contracted areas of the Franklin Township who calls 911 and receives a rapid response from in-house staffed, cross-trained Firefighter/EMTs from Middletown or Franklin City who arrive on scene within industry standards and immediately begin to mitigate the emergency; as compared to the Carlisle residential structure fire where the initial fire engine failed to respond all together. The current system of fire suppression capability for many areas of the township fails to meet industry standards and should be addressed by one of several options listed in the recommendation area of this report.

From an Emergency Medical Services prospective, similar unequal response capabilities exist in the current response areas of the southern and northeast portions of the township. The reduction in budget and staffing from JEMS has created deficiencies in the response system which results in delayed emergency medical care for residents. The system of not allowing trained EMS personnel to assist with medical alarms is detrimental to patient care and furthermore contributes to failure of the system to place an adequate number of trained medical providers on a critical advanced life support call within a timely manner as specified by NFPA.

The current agency response statistics are listed in the chart below for the key response components as specified by the National Fire Protection Agency for comparison purposes:

Agency	Type of Service	Personnel	2013 Alarms	2013 Avg. Response
Franklin Twp	Volunteer Fire	50 Volunteer FFs	117	10.13 Minutes
Carlisle	Volunteer Fire	22 Volunteer FFs	186	8:42 Minutes
JEMS	In-House EMS	33 PT/FT EMS	1394	7:10 Minutes
Franklin City	In-House Fire/EMS	52 PT/FT -FIRE/EMS	2876	5:11 Minutes
Totals		157 Personnel	4573	

The regional break down by agency provides an illustrative view of how drastically different the response capability is from agency to agency as well as for different areas of Franklin Township. Only Franklin City currently meets industry standards for emergency response for Fire and EMS. The fire department budgetary resources of each community vary significantly in total budget and staffing; however each jurisdiction has similar overall tax rates when Fire and EMS funds are combined. The Franklin Township budget estimate is based on an average of the past several years with some additional expenditure anticipated for 2014. Franklin Township tax revenues are significantly lower because the levy is based on 1984-86 property values. The Village of Carlisle is anticipating a passenger vehicle purchase for 2014 which slightly elevated their

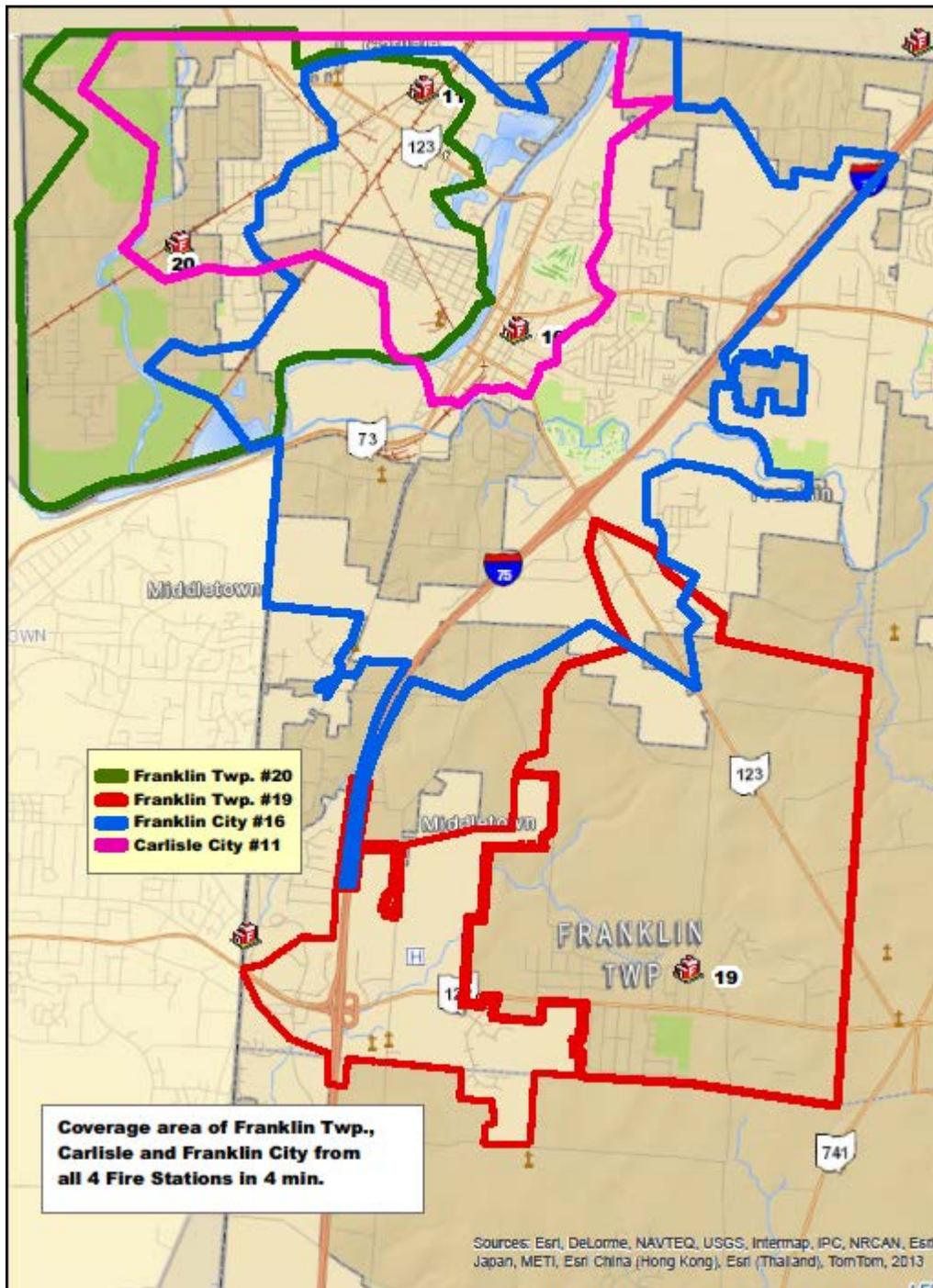
budget for 2014. Neither department appears to have a proactive budget process to fund capital improvement, apparatus replacement, or equipment replacement plan. JEMS has a specific budget and capital improvement process which currently anticipates a shortfall within the next 5-10 years. Franklin City currently has adequate funding, staff, and an active apparatus replacement plan to ensure effective and safe response.

Agency	2014 Est. Budget	Tax Rate	Rate per 100,000	Est. Levy Revenue
Franklin Twp	\$ 340,000.00	2.00	61.26	\$ 156,000.00
Carlisle	\$ 151,600.00	2.00	61.26	\$ 143,000.00
JEMS	\$ 1,275,000.00	4.41	135.08	\$ 1,000,000.00
Franklin City	\$ 2,503,000.00	6.40	196.03	\$ 1,250,000.00
Totals	\$ 4,269,600.00			\$ 2,549,000.00

The current budgets for the Franklin Township and Village of Carlisle are inadequate to provide the necessary staffing and administrative functions needed for a modern day emergency response organization. Additional funds in the form of levies should be considered as soon as feasible to address the aging equipment, facilities, lack of in-house staff, training, and administrative functions.

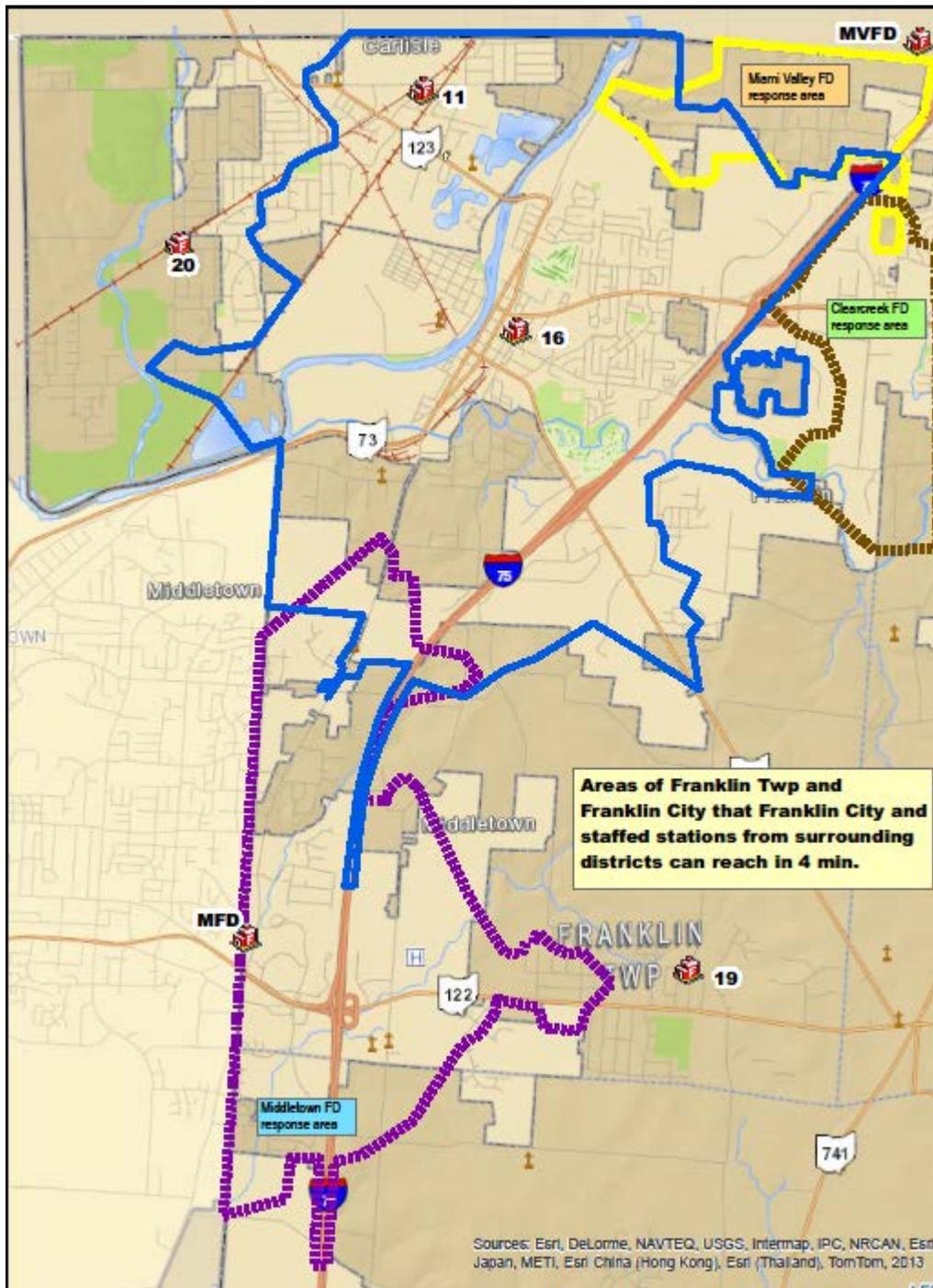
The following map configurations were evaluated to determine the most efficient and cost effective locations to respond from in order to meet industry standards for emergency response based on 4 minute drive times, and provide a consistent level of service to all residents:

4 Station 24-Hour Staffed Fire & EMS Response Model



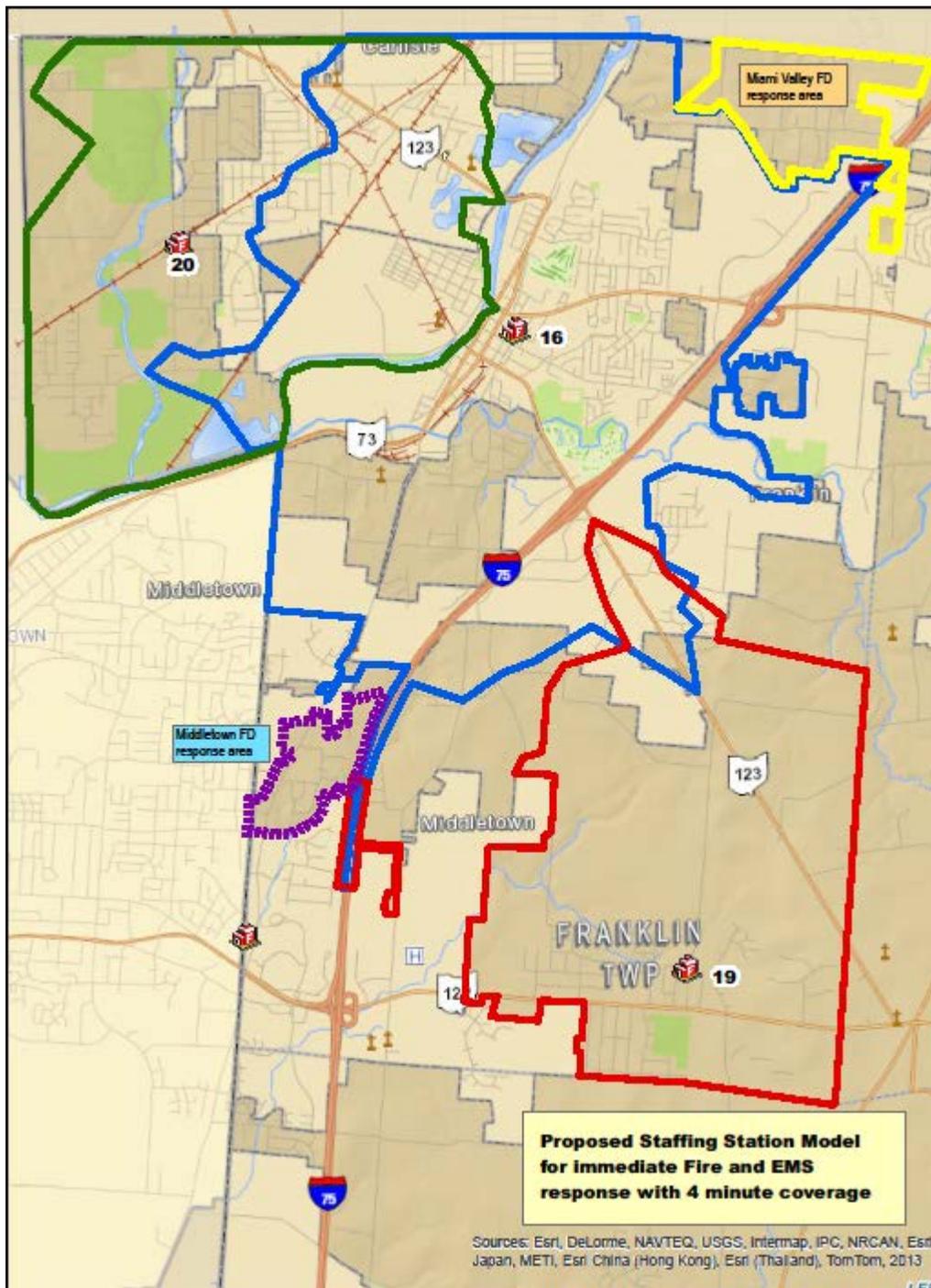
The four station model assumes response from in-house cross-trained staff from all four current fire stations. This model is effective for providing emergency response however does not meet the efficiency standard because of redundant overlapping cover areas. 100 percent of the Village of Carlisle can be covered by station 16 and station 20 in a timely and efficient manner. The retention of the station 11 creates additional facility and apparatus cost.

Outsourcing Contract for all Fire & EMS Response



This proposed map represents the outsourcing of all Fire & EMS coverage to current surrounding jurisdictions to provide in-house immediate response into the Franklin Township and the Village of Carlisle regions. This model creates an unacceptable delay to the non-highlighted areas. Furthermore, this model fails to provide adequate emergency response coverage based on NFPA and CFAI standards to over 40 percent of the effective areas.

3 Station 24-Hour Staffed Fire & EMS Response Model



The 3 Station 24-Hour Staffed Fire & EMS Response Model provides the most efficient and effective model for emergency response in a both a timely and fiscally sustainable model. This model shows equitable coverage to over 90 percent of the population with 95 percent coverage within 1 additional minute drive time. The outlining areas would be best served by AMARS agreements to share responsibility for emergency response for bordering areas.

Results and Recommendations

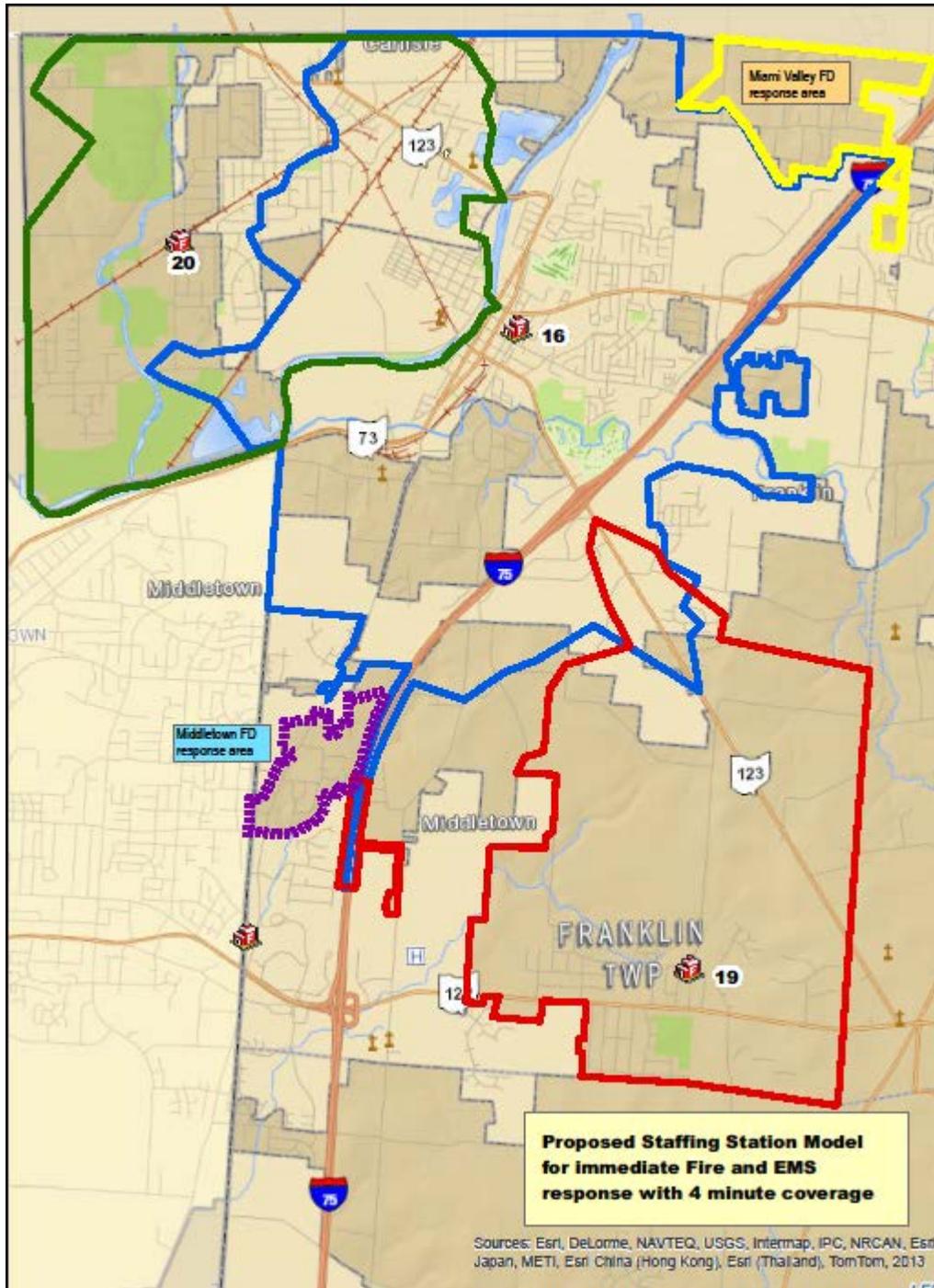
The intent of this research study was to evaluate current operations for emergency response capabilities throughout the 33 square miles of Franklin Township including both the non-incorporated as well as incorporated areas. The current Emergency Service Delivery Model is made up of 4 separate agencies responding from 5 separate locations. Staffing and response times vary significantly between agencies as indicated in the evaluation and agency reports listed above. Residents of the same jurisdiction receive vastly different levels of service based on their address and whether or not they are covered by staffed stations or contractual agreements. The volunteer emergency response systems which have struggled over the years no longer provide adequate emergency response to numerous areas of Franklin Township and the Village of Carlisle for Fire, EMS, or both services. Moreover the lack of reliable staffing and lack of necessary administrative function and training in both volunteer agencies have created a dangerous environment for response to critical IDLH incidents as stated throughout both NFPA 1710 and 1720. Numerous deficiencies and safety concerns were identified for both volunteer agencies. In addition, due to budgetary cutbacks, JEMS is no longer able to provide timely response to the southern region of the district.

In order to provide the best possible level of emergency services to all residents of this community which covers approximately 33 square miles, and to do so in a fiscally responsible and sustainable response model; the communities should seek to establish and properly fund a Single Emergency Response Fire & EMS Agency to provide a comprehensive all-hazards mitigation response. The system would ensure adequate management, leadership, and accountability while serving to staff 3 Fire Stations with effective, qualified and cross-trained personnel at strategic locations for immediate emergency Fire & EMS response.

This system would provide the capability to staff up to 3-4 EMS transport vehicles for immediate response. In addition, the combined system would be capable to deploy 3-4 fire suppression apparatus with immediate response from in-house staffed stations to meet NFPA response standards with 4 minute drive times and could meet the 90 percent response standard which is appropriate for a suburban environment such as this as described by the Center for Public Safety Excellence. Additional volunteer from home personnel could be utilized to backfill stations and respond to large scale incidents or simultaneous calls for service. This would allow the region to retain the valuable services of the current community volunteers. Once emergency units are deployed on active scenes, the department could initiate a recall to provide another level of redundancy to the service delivery model. The overall cost for facilities, apparatus, and equipment would be reduced through a single agency response model, greatly reducing costly redundancy of both apparatus repair and replacement costs.

From a staffing perspective, the region currently staffs 14 personnel on duty with in-house staffing. Over 50 percent of the JEMS staff are currently cross-trained but are not permitted to perform firefighting functions while on duty under the current system. All in-house staffed members of Franklin City are cross-trained. This new system would operate collaboratively under the direction of 1 Fire Chief and 1 Medical Director. All personnel of the new system would become cross-trained to a minimum level of Firefighter Level I & EMT Basic to provide effective and efficient response to all emergencies. The additional training would allow for the best possible patient care and survivability. The recommendation would be add 4-5 additional staff members on a 24 hour basis to provide immediate response to all areas of the region. This staff would include a 24 hour Battalion to provide accountability, professional incident scene management, and to ensure effective and safe operations. The region would be able to meet NFPA standards for initial arriving unit as well as the balance of the first due companies.

Regional Emergency Response System Proposal Map



In order to provide the best possible level of emergency service to all residents of this community covering approximately 33 square miles, and to do so in a fiscally responsible and sustainable response model; the communities should seek to agree upon and properly fund a single Emergency Response Fire & EMS Agency to provide a comprehensive all-hazards mitigation response from three strategically staffed locations within the overall community. The 3 Station 24-Hour Staffed Fire & EMS Response Model provides the most efficient and effective model for emergency response in a both a timely and fiscally sustainable model.

Conclusion

This study evaluated the current emergency operations of four separate agencies to include Franklin Township, the Village of Carlisle, Franklin City, and Joint Emergency Medical Services. Each agency was evaluated for effective staffing, equipment, facilities, and emergency response capability. A comprehensive analysis of available data and interviews were conducted to evaluate each agency for its current capabilities and response standards. Significant differences and deficiencies were discovered in the realm of quality of services residents receive based on their geographic location within Franklin Township. The current multiagency approach to emergency service delivery and staffing were found to be insufficient and incapable of meeting performance objectives for a significant area of the response configuration. With the goal to fully meet response and staffing model recommendations established through this report, key operational and administrative issues would need to be addressed. Three of the four agencies reviewed currently fail to meet industry standards for effective and efficient response. Furthermore, the results show that the Franklin Township and Carlisle Fire Departments are severely understaffed, and fail to provide reliable emergency response in a consistent manner. These agencies fail to meet industry standards for effective response times and adequate training standards.

In order to provide the best possible level of emergency services to all residents of this community, and to do so within a fiscally responsible and sustainable response model; the study found that the three communities of Franklin Township, the Village of Carlisle, and the City of Franklin should seek to establish and properly fund a single Emergency Response Fire & EMS Agency to provide a comprehensive, all-hazards mitigation response system. The new response system would be established to ensure adequate management, leadership, and accountability

while serving to provide a 24 hour in-house response. Cross-trained personnel operating out of three strategically located stations would provide consistent and immediate emergency Fire & EMS response throughout the overall community in an efficient and effective manner. The elected officials in conjunction with Fire Chiefs and community representatives should review these recommendations with the overall goal to provide the best level of emergency services possible for all residents of this community. Volunteer resources could augment the system with additional personnel and to maintain community involvement. Additional savings would be accomplished by reducing the overall number of facilities from five facilities down to three strategically located facilities within the overall region. This combination of resources would reduce the cost of facilities, utilities, duplication of equipment and apparatus as well as future capital costs. Based on the current budget analysis, an additional levy would be required to provide adequate funding to support the increase in 24 hour emergency services within the new response model. The proposed model with additional funding would provide adequate in-house personnel, effective facility upgrades, administrative capability, and necessary apparatus & equipment resources. A thorough evaluation of levy options should be initiated to determine the best approach to provide the necessary resources for successful implementation and sustainability of this comprehensive all-hazards mitigation plan. Implementation of a cost effective and efficient regional plan for emergency services would ensure quality, effective, and equitable services for all residents of the Franklin Township community.