Joint Fire & EMS District Feasibility Study

for the

City of Bellbrook and Sugarcreek Township

Prepared by

The Ohio Fire Chiefs' Association
Consulting Services

PREMIER • PROFESSIONAL • PROACTIVE

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Executive Summary

The Ohio Fire Chiefs' Association performed a feasibility study to determine if the formation of a joint fire and emergency medical services (EMS) district involving the city of Bellbrook and Sugarcreek Township would be beneficial to their respective communities. The study included an analysis of current fire and EMS delivery systems in their respective response areas, risk assessment, evaluation of equipment and facilities, and creation of a budget based on the projected operational expense of a new fire and EMS district.

The Bellbrook Fire Department (BFD) is a municipal-operated agency that provides fire protection and EMS to the city of Bellbrook. BFD is combination department with 13 personnel. The roster includes a full-time fire chief, three full-time lieutenants, and three full-time and six part-time firefighters. All full-time personnel are dual certified as a Firefighter II (FF II) and paramedic. Part-time personnel are dual certified as FF II and paramedic or FF II and emergency medical technician (EMT). Station 22, one of the department's two stations is staffed around-the-clock with a full-time lieutenant and one full-time and two part-time firefighters; however, at times the department staffs with three total personnel due to a shortage of part-time personnel. Station 21 is not staffed; it houses the department's reserve apparatus and equipment. The fire chief's office is also at this location.

Over the past 10 years (2015-2024), the department's overall service demand has remained steady with some fluctuations. The department responded to 745 calls for service in 2015 and 745 calls in 2024. The number of calls trended downward in 2017 and 2018 and increased to 758 calls in 2019, which was the highest number of calls experienced during the 10-year period. The fire responses increased by 10% while the EMS responses decreased slightly (5.7%) during this time period. The department's operating budget for 2024 was $1.56 million with actual expenditures of $1.35 million. Fire department operations are supported by three continuous tax levies totaling 7.65 mills and EMS billing for patients transported to the hospital.

Sugarcreek Township Fire Department (STFD) is a township-operated agency that provides fire protection and EMS to Sugarcreek Township. STFD is a combination staffed organization with a current roster of 49 personnel. The department is led by a full-time fire chief, full-time assistant fire chief, full-time fire marshal, three full-time shift captains, three full-time shift lieutenants, and six full-time and 33 part-time firefighters and EMS personnel. All full-time personnel are dual certified as FF II and paramedic. Part-time personnel are dual-certified as FF II and paramedic or FF II and EMT. The department also has some personnel who are certified paramedics or advanced emergency medical technicians (AEMT), but do not have firefighting certification.

Over the past eight years (2017-2024), the department experienced a 53% increase in calls for service. Fire responses increased by 66% while EMS responses increased 48% during that time period. Call data for 2015 and 2016 was not available.

The department's operating budget for 2024 was $3.69 million with actual expenditures of $3.15 million. Revenue for operating expenditures is generated from five tax levies totaling 7.80 mills and EMS billing for patients transported to the hospital. In May of 2025, a new 1.0-mill levy was approved by the voters for fire department operations. This levy will begin collection in 2026.

A conceptual joint fire and EMS district, which included the city of Bellbrook and Sugarcreek Township, was created to examine staffing scenarios with associated operating budgets. Scenario assumptions used to develop accurate budgets included: staffing two fire stations, existing STFD Station 71 and Station 72; a reduction in fleet size; and establishing wage scales and benefit packages for full-time employees.

Staffing Scenario #1 has four personnel on duty at each station plus a shift commander. The staffing model includes one full-time lieutenant, one full-time firefighter, and two part-time firefighters at Station 71, and one full-time lieutenant, two full-time firefighters, one part-time firefighter, and one shift commander (battalion chief) at Station 72. Staffing Scenario #1 allows for a seven-person minimum staffing with two personnel off on authorized leave, which is the same staffing levels currently provided if BFD and STFD are looked at collectively. All staffing scenarios included a full-time fire chief, full-time assistant fire chief, full-time fire marshal, and a part-time administrative assistant. The projected annual cost of this scenario was estimated at $5.1 million.

Staffing Scenario #2 was developed to increase in-station staffing and response reliability and included 11 response personnel on duty in-station around-the-clock. Each station would have one full-time lieutenant, two full-time and two part-time firefighters plus a shift battalion chief. The projected operating budget for this scenario was $5.7 million.

Staffing Scenario #3 included a similar staffing plan as Scenario #1; nine response personnel on duty; four personnel at each station plus the shift battalion chief. However, with this scenario all personnel are full-time positions. This scenario showed the cost of maintaining staffing levels with full-time personnel should the part-time personnel pool diminish in the future. The projected operating budget for this scenario was $5.6 million.

An analysis was performed on potential revenue based on several tax levy scenarios along with projected income from EMS billing. Those revenue scenarios were then analyzed versus the project operating cost of each staffing scenario. Included in the analysis was three-year projections with inflationary increases of operating expenses and accumulation of reserve funds.

After analysis, the assessment team determined that a joint fire and EMS district was feasible. The staffing scenarios developed maintain, and in some cases improve response time performance for fire and EMS incidents including overlapping calls for service. Improved response reliability and enhanced response force efficiency and effectiveness, especially for fire incidents, would also be realized. There also will be improved operational efficiencies in

staffing and training. While creation of a joint fire and EMS district would not lower current operating expenditures, there would be an economy of scale that will reduce future operating expenditures as well as a reduction in future capital expenditures. A new fire and EMS district would provide the citizens, elected officials, and fire department members long-term stability.

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The Ohio Fire Chiefs' Association (OFCA) recognizes Bellbrook Fire Chief Anthony Bizzarro and Sugarcreek Township Fire Chief Doug Buffenbarger, their staffs and personnel of their respective departments for their cooperation and effort during this project. They were prompt, courteous, and professional in providing the background information and data necessary to conduct this analysis. It was obvious to the assessment team that personnel of both departments serve with pride and are committed to delivering quality service to their communities. The OFCA also recognizes Bellbrook City Manager Rob Schommer, Sugarcreek Township Administrator Barry Tiffany, and the elected officials of both communities for their commitment to the project.

Introduction

The OFCA, a professional association and consulting firm, was selected by the city of Bellbrook and Sugarcreek Township to perform a feasibility study to determine if the formation of a joint fire and emergency medical services (EMS) district would be beneficial to their respective communities. To conduct this study a review of the current fire and EMS delivery in each community was performed, which included an in-depth evaluation and analysis of the Bellbrook and Sugarcreek Township Fire Departments. This allowed the assessment team to understand each department's current service demands, response performance, and staffing challenges. A community risk assessment and review of each department's general operations, management, and financial status were also performed. Interviews with city and township officials, as well as fire department leadership helped identify past and current economic development efforts, projected growth, and future concerns regarding fire and EMS delivery.

The OFCA assessment team conducted site visits with the Bellbrook Fire Department on May 7th, 2025 and Sugarcreek Township Fire Department on May 21st, 2025 to review the current service delivery provided by each department including its programs, administration, service delivery performance, and financial condition. Department assets including apparatus, equipment, and existing fire station facilities were also inspected during the site visit. The assessment team also met with Bellbrook City Manager Rob Shommer and Sugarcreek Township Administrator Barry Tiffany.

Overview

The city of Bellbrook and Sugarcreek Township are located in the southwestern corner of Greene County. Bellbrook is surrounded by Sugarcreek Township with a small portion of the city's western corporation line bordering the city of Centerville (Montgomery County). Sugarcreek Township is bordered by the city of Beavercreek and Beavercreek Township on the north, Spring Valley Township on the east, Wayne Township (Warren County) on the south, Washington Township (Montgomery County) on the west, and the city of Kettering (Montgomery County) on the northwest. Both Bellbrook and Sugarcreek Township are part of the Dayton Metropolitan Statistical Area. Figure 1 is a map of Greene County with the two communities highlighted.

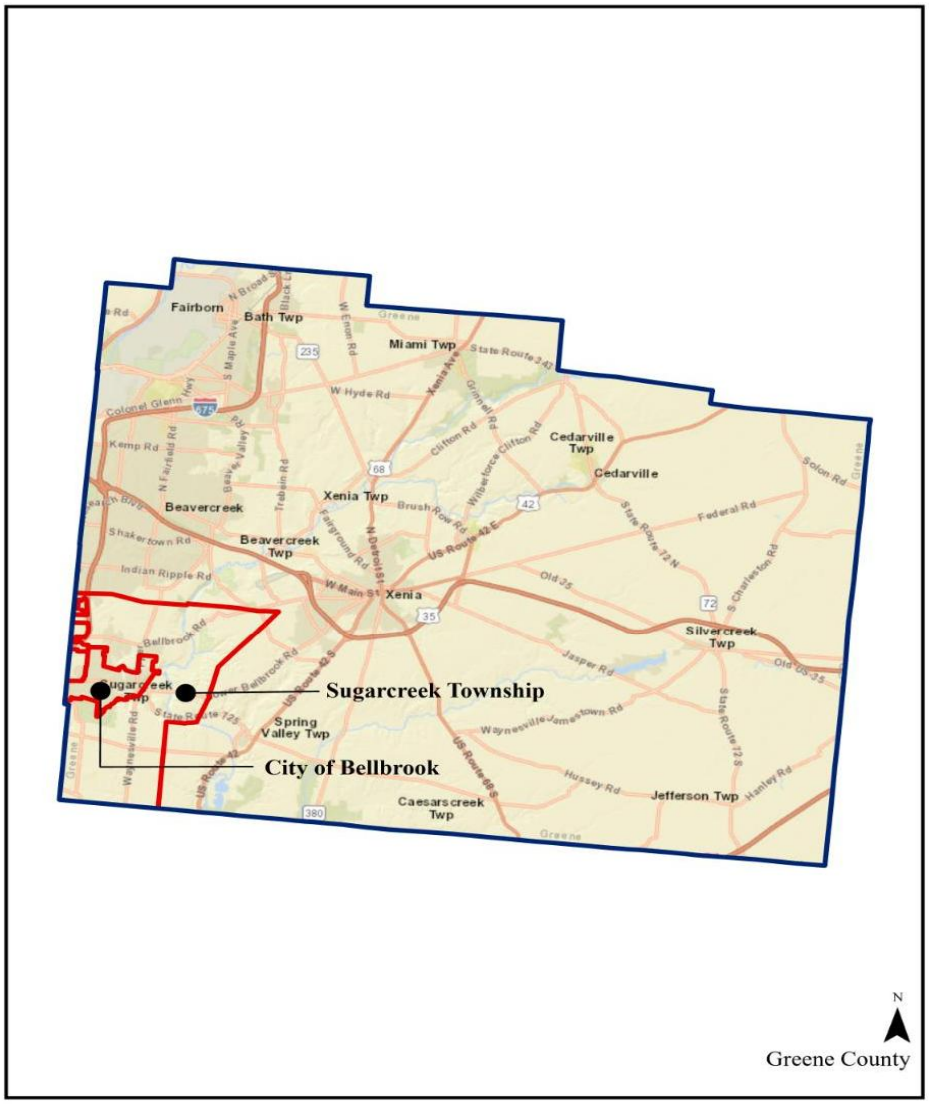


Figure 1: Map of Bellbrook and Sugarcreek Township and surrounding jurisdictions in Greene County

City of Bellbrook

Bellbrook is located in the southwestern area of Greene County. The total city area spans 3.14 square miles. Figure 2 is a map of the city.

The city has a mix of residential development as well as retail and light commercial business properties. The city also has a historic and developing downtown area. Known as a desirable bedroom community, Bellbrook was named in 2022 the "Best City in Ohio to Retire" by *Niche.com* due to its small-town charm, accessible amenities, and proximity to Dayton, which is located 16 miles northwest of the city.

Bellbrook boasts numerous residential opportunities, a high-performing school system, and several city parks, which are part of the larger Bellbrook Sugarcreek Park District. There is a

regular calendar of events in the community including the popular Sugar Maple Festival. Major employers in the city include the Bellbrook Sugarcreek Local School District, Dot's Supermarket, and the city of Bellbrook.

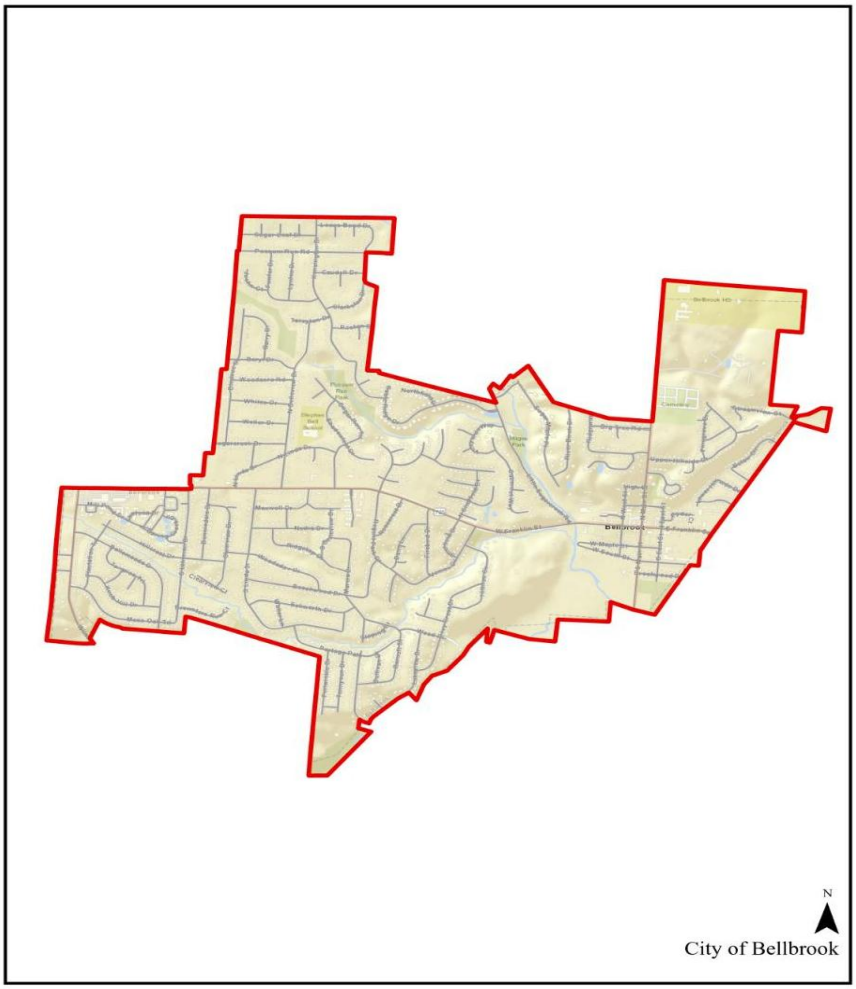


Figure 2: Map of Bellbrook

Major roadways in the area include State Route (SR) 725 (Franklin Street), Wilmington Pike, Waynesville Road (Main Street), Little Sugarcreek Road, South Linda Street, and North Bellevue Drive. Interstate-675 is located just northwest of the city with an interchange at Wilmington Pike.

There are no rail lines that travel through the city. The Little Sugar Creek meanders through the city from the north to the southeast and empties into the Little Miami River south of the city in Sugarcreek Township. A small portion of the Little Miami River borders the city in the far northeastern portion of the city off Washington Mill Road and features a canoe livery.

The city is a home-rule municipality operating under its own charter as provided by the Ohio Constitution. The city is governed by a council – city manager form of government. The city

council is comprised of a mayor and six council members elected at-large on a non-partisan basis. Council members serve staggered four-year terms while the mayor serves a two-year term. There also is an appointed city manager who is responsible for daily operations of the city, overseeing department directors, and developing and managing the city budget.

Demographics

According to the most recent published U.S. Census data, the city's population in 2020 was 7,317, which is an increase of 374 residents (5.4%) from the 2010 census. The current population is 89% White, 2% Asian, and 2% Black; other ethnicities make up 7% of the population. Citizens over the age of 65 account for 19% of the population and children under five years of age account for 4% of the population. The median household income is $101,455.[1] The city has a population density of 2,330 people per square mile.

Growth

Bellbrook has experienced controlled growth over the past decade. Long considered a desirable bedroom community, the city had three major residential housing developments built in the past 10 years. There also has been some expansion of retail shops and targeted efforts to revitalize the downtown area.[2] According to city officials, there are minimal in-fill areas, with 10-acres available for residential or commercial development.

Department History

The Bellbrook Fire Department (BFD) serves the city of Bellbrook. The department operates from two fire stations and provides fire suppression, EMS, and community risk reduction services to the community. The EMS is an advanced life support (ALS) level and transport service. ALS level service is often referred to as paramedic level service.

While the origin of fire protection in the community can be traced back to 1836, the department's first fire "truck", a three-gallon chemical fire engine mounted on a cart, was acquired in 1923 after a major fire destroyed eight buildings in the downtown area. The city purchased a motorized fire truck for service to the community in 1931.

The Sugarcreek-Bellbrook Fire Department was organized in 1949 with a new fire station constructed in the downtown area and the purchase of additional firefighting equipment. A fire station was constructed in 1972 at West Franklin Street and North Linda Drive (the site of the current Fire Station 22) and a second fire station in 1982 at the intersection of East Franklin and South East Streets (the current site of Sugarcreek Township Fire Department Station 71).

In 1989, the department split after township residents filed a petition to have the city removed

[1] U.S. Census 2020
[2] Bellbrook Comprehensive Plan Update 2019

from the township. As a result, BFD was reorganized with the city retaining Fire Station 22 and a portion of the equipment and apparatus. In 1992, the city opened a second station after an addition was completed at the city's service department. That station (the current Station 21) moved to its current location at 35 North West Street in 1996 when the city procured and renovated an existing commercial property.

In 1999, the department established a part-time staffing model to ensure 24/7 in-station coverage. The part-time personnel worked with the full-time personnel to provide a quick response to the increasing service demand and the declining number of volunteers. Currently, the department utilizes a full-time staffing model augmented with part-time personnel. There are no longer any volunteer personnel.

Mission and Core Values

All organizations should have a mission statement. A carefully crafted mission statement describes an organization's purpose, function, and services provided. BFD has a clearly developed mission statement along with a goal statement and defined core values that identify the organization's culture and belief system.

Mission

The Mission of the Bellbrook Fire Department is to enhance the quality of life in our city and to provide a healthy and safe environment. This is accomplished through the cultivation of community partnerships and promoting progressive public education and awareness.

The department also has a goal statement that helps further define the mission statement with specific operational and planning goals.

Our primary goals are to reduce the threat of fire, to ensure superior emergency medical care and to maintain a high state of emergency preparedness through fire prevention, disaster planning, personnel development, and community leadership.

Values

Leadership – *Our members lead by example, build morale, provide for growth, and set the standard for excellence.*

Pride – *Our members take ownership in accomplishing our mission and vision.*

Professionalism – *Our members exhibit a high level of competency and compassion by being prepared and holding each other accountable.*

Integrity – *Our members are truthful, ethical, and of upright moral character*.

Staffing

BFD is a combination department with 13 uniformed personnel. The current roster includes a full-time fire chief, three full-time lieutenants, and three full-time and six part-time firefighters. Daily staffing at Station 22 includes one full-time lieutenant, one full-time firefighter, and two part-time firefighters assigned to each of three 24-hour shifts. At the time of this report, the department is short six of their authorized 12 part-time firefighters. This results in only one part-time firefighter available for each shift. Department data shows that over the past year the department operated with three personnel on duty 60% of the time. The department's minimum staffing level is two. If the staffing falls below two, off-duty personnel are recalled to fill the vacant position and paid an overtime rate for the time worked.

Full-time shift personnel work a standard fire service three-platoon system with personnel on each of the three shifts working 24 hours on duty followed by 48 hours off duty. This is referred to as a 56-hour workweek. Full-time shift employees receive six hours of overtime each 15-day work period to meet provisions in the Fair Labor Standards Act (FLSA). Part-time personnel work a 24-hour shift every sixth day.

The fire chief works a standard 40-hour workweek, subject to call back for emergencies. His office is located at Station 21, which houses some of the department's reserve apparatus and equipment. No shift personnel are assigned to this station.

All seven full-time personnel are dual-certified as a Firefighter II (FF II) and paramedic. Two part-time personnel are also dual-certified as FF II and paramedic, and four part-time personnel are dual certified as FF II and emergency medical technician (EMT).

An organizational chart depicting the department's current structure is displayed in Figure 3.

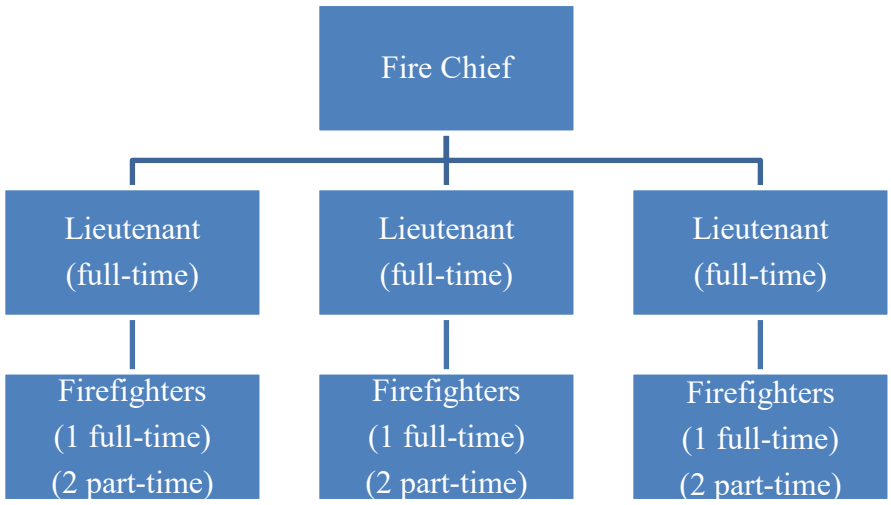


Figure 3: BFD organizational chart

Full-time personnel receive an annual salary plus fringe benefits. Wages for firefighter and lieutenant positions are listed in the collective bargaining agreement (CBA) between the city and International Association of Firefighters Local 5002. Full-time employees have a seven-step wage scale that incrementally increases annually based on their original date of hire. For 2025, the annual wage for firefighter-paramedic at the top pay step is $70,532 and $93,537 for lieutenant. Additional benefits include vacation leave, sick leave, 24-hours of personal leave, 13 paid holidays, health care, and life insurance. The fire chief receives an annual salary of $125,099 and other benefits as described.

Part-time personnel also have a seven-step hourly wage scale based on EMT certification levels. The wage scale for firefighter-paramedic ranges from $16.34 to $23.31 per hour and $15.18 to $22.07 per hour for firefighter-EMT. Chief Bizzarro noted that a part-time employee could be started at a higher hourly rate than the starting wage scale based on previous experience. Part-time personnel receive one and one-half times their normal hourly pay for working on one of the five major holidays and may also qualify for educational reimbursement for classes completed. No other fringe benefits are offered to part-time personnel.

Hiring

The hiring process for new full-time and part-time personnel is a robust, multiple-step process. Once an application is received, the applicant is interviewed by an internal department committee which includes the fire chief. After the initial interview, the applicant then takes a written examination administered by the National Testing Network. If the applicant receives a passing score, the next step is successful completion of a physical capability test administered by the Kettering Health Network and referred to as the "Kettering Mile". The next step in the process is a background investigation conducted by local law enforcement. The applicant is then tendered a tentative offer of employment pending completion of a medical examination and drug screen. Successful applicants then complete a final interview with the city manager, who is the appointing authority for the city. The new hire physical and drug screen is completed at Citran Occupational Health in Fairborn, OH at a cost of $1,011.

Full-time personnel must possess FF II and paramedic certification and a valid Ohio operator's license at the time of appointment, and obtain fire-safety inspector certification within their first year of employment. Part-time personnel must possess the following minimum certifications at the time of appointment: FF I, EMT, basic life support, National Incident Management System 100 and 700 training, and a valid Ohio operator's license. All new personnel are subject to a one-year probationary period with regular employee evaluations. They also must complete a probationary packet under the supervision of their shift officer.

Part-time personnel who wish to apply for an open full-time position must submit an application for the position. They are interviewed and subject to a background investigation. After receiving a tentative offer of employment, the applicant must complete a medical examination

and drug screen. Successful applicants then receive appointment to the full-time position.

Funding

The city of Bellbrook is unique in that it is one of only three cities in Ohio that does not utilize a wage earner income tax to generate revenue. City operations are supported by property tax levies against real estate. There is one general operations levy, three police levies, and three fire levies. There is also "inside millage" totaling 3-mills; 2.70-mills for general operations and .30-mills for police pension funding.

Fire department operations are supported by three continuous levies totaling 7.65-mills. The estimated revenue for 2025 from these levies is $1.48 million. The department also receives revenue from EMS billing for treatment and transportation of patients to the hospital. EMS billing revenue for 2024 was $135,754. The department contracts with a third-party vendor, the AcuuMed Group of Riverview, MI, to manage and process all billing for the fire department. The city has a "soft-bill" policy for city residents and "hard-bill" policy for non-residents.

BFD's appropriated operating budget for 2024 was $1.56 million with actual expenditures totaling $1.35 million. Expenditures for personnel accounted for 79% of the total expenditures, which includes wages, health insurance, Medicare, federal payroll tax or Federal Insurance Contribution Act (FICA), and Ohio Bureau of Workers' Compensation (BWC) premiums.

The city has capital improvement and capital replacement funds that are adjusted each year to address needs of all city departments. However, some of the fire department's capital replacements, including those planned in 2025, have been deferred pending voter approval of an additional fire operating levy planned in the near future. Portable radios ($19,423) were purchased in 2024. Firefighting personal protective equipment ($17,000) was also purchased in 2024, but that equipment is purchased from the department's annual operating expense budget. BFD's apparatus replacement plan is found on page 35.

Service Demands

Over the past 10 years, the department's overall service demand has remained steady with some fluctuations. In 2015, the department responded to 745 calls for service. In 2024, the department responded to 745 calls for service. The number of calls trended downward in 2017 and 2018 and then increased to 758 calls in 2019, which was the highest number of calls during the 10-year period. Note: a call for service is an incident count. If multiple companies respond to a fire, it counts as one incident or call for service. BFD's calls for service over the past 10 years are displayed graphically in Figure 4.

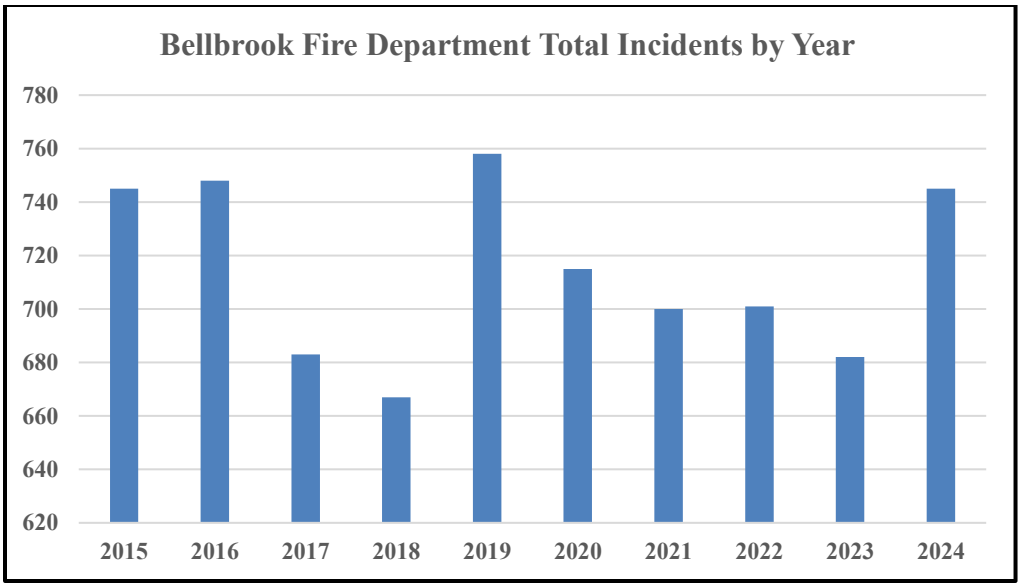


Figure 4: BFD's 10-year incident response history

During this 10-year reporting period, fire responses increased 10%. EMS responses decreased slightly (5.7%) during this same period. Figure 5 is a comparison of fire and EMS responses experienced by BFD from 2015 through 2024.

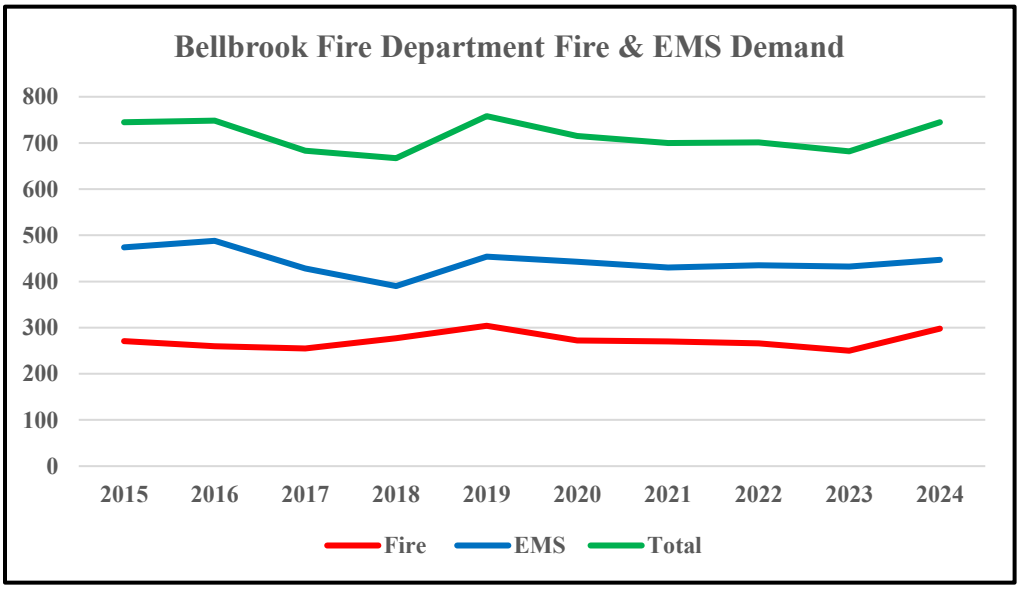


Figure 5: BFD's 10-year incident response trends

For the purposes of this report, fire responses include building, auto and grass fires, as well as fire alarms, carbon monoxide calls, service calls, and other non-EMS responses. Also included in the total calls for service are mutual-aid responses. BFD has mutual-aid agreements with surrounding departments, achieved with a single multiple-county contractual agreement. BFD also has informal automatic mutual response (AMR) agreements with Sugarcreek Township, Beavercreek Township,

Washington Township (Montgomery County), Kettering (Montgomery County), and Spring Valley Township (Warren County). These departments are predetermined based on the type and location of the incident and are listed in the Greene County Communications Center's computer-aided dispatch (CAD) software.

Automatic mutual-aid response or automatic mutual response (AMR) is assistance dispatched automatically by a formal contractual agreement or an informal agreement between two communities or fire districts to all first alarm structural fires, including automatic alarms, or to specific target hazards. This differs from traditional mutual-aid response, which is requested by a department on an as-needed basis. AMR is prearranged and is typically seamless with modern computer-aided dispatch systems.

Over the past five-year period (2020-2024), BFD's mutual-aid responses have slightly increased by 4%. There were 70 mutual-aid responses in 2020 and 73 in 2024 with a high of 90 responses in 2021. The number of mutual-aid responses received by the department has increased 95% over the past five years. There were 21 responses in 2020 and 41 in 2024. Of the total mutual-aid responses received in 2024, 31 (75%) were EMS related.

The fire loss recorded for the city has fluctuated over the past five years; however, this is not uncommon. Fire loss is difficult to predict and one large-loss event can skew any statistical analysis. The recorded fire loss in 2020 was $38,500 and in 2024 the recorded loss was $25,620. However, 2022 saw a spike in recorded fire loss of $513,100. Overall, 97% of the total fire loss was recorded in residential properties.

The civilian casualty experience in Bellbrook is good. Over the past five years there were no recorded civilian fatalities and two injuries resulting from exposure to fire byproducts such as smoke or heat, or injuries received while attempting to escape from a fire.

Technical Rescue

Technical rescue is a phrase used to describe special response situations including vehicle and machinery extrication rescue, confined space rescue, grain bin rescue, rope rescue, trench rescue, swift-water rescue, static-water and ice rescue, structural collapse, and hazardous materials. While separate from technical rescue, hazardous materials response is considered a specialty discipline. Technical rescue incidents are referred to as high-risk, low-frequency events which are dangerous to mitigate and involve a special set of skills, procedures, and equipment for each rescue situation. It is often very costly to implement and maintain proficiency in each technical response area.

Due to the complexity and uniqueness of technical rescue operations, the National Fire Protection Association (NFPA) has developed specific operational levels for responders. NFPA 2500, *Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services,* requires written operational procedures

consistent with the following operational levels or response capability for each technical rescue discipline commonly encountered by a response agency:

- Awareness Level – this level represents the minimum capability of organizations that provide response to technical search and rescue incidents.
- Operations Level – this level represents the capability of organizations to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply limited techniques specified in NFPA 2500 to support and participate in technical search and rescue incidents.
- Technician Level – this level represents the capability of organizations to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply advanced techniques specified in NFPA 2500 necessary to coordinate, perform, and supervise technical search and rescue incidents.

The National Fire Protection Association (NFPA) is a global self-funded nonprofit organization whose mission is to reduce death, injury and economic loss due to fire, electrical and related hazards. In addition to research and training, NFPA has developed over 300 codes and standards through a consensus process and involvement of all disciplines in a particular subject area. NFPA standards are followed almost universally and establish the criteria from which fire apparatus are built and personal safety equipment is designed and manufactured. The most universally recognized standard is NFPA 70, which is the National Electric Code and adopted in all 50 states.

While a formal technical rescue assessment was not performed, the department's response capability in each technical rescue area was reviewed.

Vehicle Rescue – these incidents involve removing trapped victims as a result of a motor vehicle accident when conventional means of exit are impossible or inadvisable. Fire departments routinely respond to motor vehicle accidents that result in an injury to one or more victims. Some of the incidents require the use of specialized equipment such as hydraulic-powered rescue tools, air bags, etc., to disentangle the victim for removal. A skilled and coordinated approach is needed to minimize or prevent further injury to a victim during the extrication process. BFD has a general response procedure and is equipped and trained to handle these types of incidents.

Machinery Rescue – these incidents involve removing a worker trapped in some type of industrial machine. Victims trapped in machines in an industrial or construction site setting is typically more complex, but may require the same type of rescue equipment utilized in vehicle rescue. The department has no specific response procedure for this type of incident. If an incident occurs, the Ohio Region 3 Strike Team, a regional urban search and rescue agency (USAR) with assets located at nearby Washington Township Fire Department, would be called for assistance.

Confined Space Rescue – includes incidents in which victims are trapped within an area that qualifies as a confined space. A confined space may be found in agricultural, industrial, and other settings as defined by the Occupational Safety and Health Administration (OSHA). The department does not have equipment or training for this type of response. If an incident occurs, Ohio Region 3 Strike Team would be called for assistance.

Rope Rescue – includes incidents that are high-angle (elevated) or below grade and require the use of rope rescue systems to reach and rescue victims. A rope rescue incident could be part of a confined space incident due to the location of the victim. The department does not have rope rescue capability. If an incident occurs, Ohio Region 3 Strike Team would be called for assistance.

Trench Rescue – these incidents are also referred to as trench "cave-in" incidents and involve an excavation trench or underground cave-in that traps a victim(s). The department does not have trench rescue capability. If an incident occurs, Ohio Region 3 Strike Team would be called for assistance.

Swift-Water Rescue – these incidents involve the rescue of a victim(s) from fast-moving water such as a river or other large stream. Of special concern are low-head dams, which can create dangerous currents, especially when river water levels are elevated or during flood stage. The Little Sugar Creek and other small creeks and drainage ways run through the city; however, there are no low-head dams within the department's response area. The department has some rescue equipment including ropes, rope throw bags, and personal flotation devices. Personnel have received basic training and can conduct shore-based rescue operations. If an incident would occur that requires boat-based rescue operations, Ohio Region 3 Strike Team would be called for assistance.

Static-Water and Ice Rescue – these incidents involve the rescue of a victim(s) from a non-moving body of water such as ponds, quarries, or lakes. During winter these types of incidents could involve surface ice. Each rescue involves a specific set of equipment and operating procedures. The department does not have equipment or training for this type of response. If an incident occurs, Ohio Region 3 Strike Team would be called for assistance.

Structural Collapse Search and Rescue – these incidents are often associated with large-scale urban search and rescue operations following natural occurrences such as tornadoes, earthquakes, etc. BFD will respond to an incident where structural collapse or instability will have to be managed. Examples of incidents where structural collapse has to be managed include: vehicles or aircraft versus buildings, unsafe structures as a result of a gas explosion or structure fire, building construction or renovation failures, or natural forces related to weather (e.g., rain or snow accumulations on roofs, tornadoes, etc.). In managing these incidents, it is often necessary to push, pull, cut, breach, lift, or tunnel through the materials that make up the collapsed structure. If an incident occurs, Ohio Region 3 Strike Team would be called for assistance.

In addition to the single-point response described above, multiple-point responses that are spread out over a larger area or involve many locations will require a larger resource pool, including outside agency support, large-scale incident management support, and technical expertise. Ohio Region 3 Strike Team would be called to provide assistance. Depending on the size of the incident, Ohio Task Force 1, an Ohio-based USAR Team, could also be requested to respond.

Hazardous Materials – BFD personnel are trained in hazardous materials response to the operations level. As identified in NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, operations level means that personnel have the training and equipment to identify hazardous materials presence through various recognition factors such as placards and labels, container shapes and sizes, and hazardous material sites in the response area. They also have the ability and equipment to undertake defensive type of actions and low-risk offensive operations such as plugging, patching, diking, and the placement of booms and absorbent pads and other containment actions that help control or mitigate the incident. More advanced offensive operations that require the use of level "A" (completely encapsulated protective equipment) or acid splash suits require a technician level response.

The department carries spill equipment to handle small fuel spills such as gasoline, diesel fuel, etc. Equipment and supplies include equipment to plug or control liquid releases, and clean-up equipment such as booms, absorbent pads, and granular absorbent. In the event of a large spill or significant release, BFD would request assistance from the Dayton Regional Hazardous Materials Response Team. BFD has a specific response procedure for hazardous materials incidents and provides hazardous materials in-service training annually.

Community Risk Reduction

Community Risk Reduction (CRR) programs and activities are important undertakings of a modern-day fire department. A comprehensive risk reduction system should include the key functions of what was formerly referred to generically as "fire prevention": fire-safety inspections and code enforcement, public education, and fire investigations. Preventing fires and other types of accidental incidents before they occur, and limiting the impact of those that do, should be priority objectives of every fire department. Fire investigation is a mission-important function of fire departments as this function serves to determine a fire's origin and cause and why the fire behaved the way it did, providing information that plays a significant role in fire prevention efforts. Educating the public about fire safety and teaching people appropriate behaviors on how to react should they be confronted with a fire is also an important life safety responsibility of the fire department.

BFD has adopted a CRR approach in reducing or preventing injury or loss from hazards commonly facing residents, businesses, and visitors to the community. This includes the Special Community Assistance Needs (SCAN) Program. This in-home assistance program assists with

elder and impaired residents with grab bar and smoke alarm installations as well as periodic welfare checks where needed. Lieutenant Nartker oversees the department's CRR efforts.

Inspections

The department has a coordinated effort to perform fire-safety inspections in commercial, assembly, and industrial occupancies. The goal is to inspect all commercial or non-residential occupancies annually. Inspections also are performed for new construction projects and foster homes by request. All full-time (six plus the fire chief) and two part-time personnel are certified fire-safety inspectors. Inspections are equally assigned to each shift and conducted by the full-time personnel on that shift. The department's inspection history for the past five years is shown in Table 1.

Year	Inspections
2020	243
2021	226
2022	229
2023	252
2024	259

Table 1: BFD's five-year inspection history

The city has adopted by ordinance the 2017 version of the Ohio Fire Code with amendments. These rules and regulations provide guidance and support for code enforcement activities. The department considers their working relationship with the Greene County Building Department to be good. The fire chief conducts plan reviews and provides input on new business and commercial construction projects.

Public Education

The department has an active public education effort in the community. In addition to fire extinguisher training for businesses and special groups, the department provides home safety and senior safety programming, first-aid, automated external defibrillator (AED) and cardiopulmonary resuscitation (CPR) training. Also available are child safety seat inspections and installations by those personnel who are certified technicians. In conjunction with Fire Prevention Week, the department provides age-specific fire-safety education programming in the elementary and intermediate schools (Pre-Kindergarten through Grade 5). An open house is held annually at the end of the week which features a children's coloring contest.

As they have for many years, the department participates in annual community events including the Sugar Maple, Christmas, and Lions Club festivals. Personnel interact with citizens, make equipment available for viewing, and provide fire and safety education material. The department also provides programming to the Bellbrook Sugarcreek Park District's summer camps and neighborhood block parties. Over the past four years (2021-2024), an average of 2,296 people

annually has received programming from department personnel. There was no programming offered in 2020 due to the COVID-19 pandemic.

Eligible residents can also obtain combination smoke and carbon monoxide alarms, with installation by department personnel if needed. The department also offers residential rapid entry emergency key boxes. Fire prevention and safety messages are displayed on an electronic message board in front of Station 22. More detailed prevention and safety information is available on the department's webpage.

Fire Investigations

BFD conducts cause and origin of all fires that occur in the city. If a more in-depth investigation is necessary, the State Fire Marshal's office is called to provide investigators to assist.

Insurance Services Office

The Insurance Services Office, Inc. (ISO) is the leading supplier of statistical, underwriting, and actuarial information for the property/casualty insurance industry. ISO conducts field evaluations to rate communities and their relative ability to provide fire protection and mitigate fire risk. This evaluation allows ISO to determine and publish the Public Protection Classification (PPC). The published classification is based on a scale of 1 through 10, with 1 being the highest rating and 10 indicating that a community's fire suppression program does not meet ISO's minimum criteria. It is important to understand the PPC is not just a fire department classification, but rather a compilation of community services that include the fire department, the emergency communications center, and the community's public water system. The PPC for Bellbrook is 02, which was published December 1, 2022. This is an excellent overall rating. The PPC program evaluates communities according to a uniform set of criteria defined in the *Fire Suppression Rating Schedule*, which incorporates nationally recognized standards developed by the NFPA and the American Water Works Association. A community's PPC classification is contingent on four major areas:

- Emergency Communications. This section of the summary report accounts for 10% of the total classification. This section reviews the facilities provided for the general public to report fires and for the operator(s) on duty at the communication center to dispatch fire department companies to fires and the CAD system with geographic information system (GIS) integration. Bellbrook received 7.98 points credit out of a total maximum credit of 10.00.

- Fire Department. This section of the review accounts for 50% of the total classification. This section focuses on the number of engine companies or pumping apparatus and reserve pumpers and pumper capacity; number of aerial ladder or service companies and reserve aerial ladder or service apparatus; deployment analysis; company personnel; training; and operational considerations. Ensuring that a sufficient amount of personnel

is on duty, sufficient apparatus is available to respond, and appropriate fire station locations are important for this part of the credit scoring. The fire department received 34.72 points credit out of total maximum credit of 50.00.

- Water Supply System. This review accounts for 40% of the total classification. This component examines the water supply a community uses for fire suppression including water main size, distribution, and storage system. Also reviewed are hydrant size, type, and installation as well as the inspection frequency, maintenance, and condition of fire hydrants. Also reviewed are alternative water supply operations and a careful evaluation of the amount of water available compared to the amount needed to suppress fires up to 3,500 gallons-per-minute (GPM). Bellbrook received 38.55 points credit out of a total maximum credit of 40.00. The city of Bellbrook operates and maintains their water distribution system.

Note: The PPC program evaluates fire protection for small to average size buildings. Specific properties with a needed fire flow in excess of 3,500 GPM are evaluated separately and assigned an individual classification.

- Community Risk Reduction. An additional factor now evaluated is the CRR section in which fire prevention, fire-safety education, and fire investigations are evaluated. The inclusion of this in the evaluation process provides recognition for those communities that employ effective fire prevention practices and allows for extra points in the grading process. BFD benefited directly from this inclusion earning 4.84 additional evaluation points credit that moved the city's rating from what would have been a 3 to a 2.

How the PPC for each community affects business and homeowners can be somewhat complicated because each insurance underwriter is free to utilize the information as they deem appropriate. However, most insurance underwriters follow what is called the "suburban rule". This means that Bellbrook businesses and residents who are located within five road miles of a fire station and 1,000 feet (ft.) of a credible water supply (i.e., fire hydrant, dry hydrant, etc.) receive a rating of 2. Many underwriters consider properties located over five miles from a recognized fire station to receive a 10 PPC and therefore would be subject to higher premium rates for coverage.

The notification letter and summary report from ISO advised the city's PPC should serve as part of any planning document for future city development and fire-safety protection improvement considerations as it relates to city residents.

Training

Firefighting and the delivery of pre-hospital EMS is regarded as a type of professional practice and is regulated at the state level. In Ohio, certificates to practice are required and issued for both areas at several different levels of professional practice. The applicable agency is the Ohio

Division of EMS. Ohio Revised Code (ORC) §4765.30 and Ohio Administrative Code (OAC) §3737 govern training requirements. Ohio training standards and level of certifications are found in Appendix A.

The department develops and publishes a monthly training schedule. The schedule includes at least one formal fire and EMS class each month supplemented with additional training conducted by each shift. Fire topics include incident command system, forward hose lays, fire attack panels, electric vehicle fires, inspections, response priorities, ventilation, and other related topics. Department personnel and outside instructors are used to deliver the training. Additional training is scheduled and made available to personnel via *FireRescue1 Academy*, an online training resource.

Emergency vehicle driver's training is provided annually for all personnel. Classroom review is augmented with a hands-on driving obstacle course. Personnel also receive hazardous materials training annually.

BFD officers obtain advanced training for their supervisory expectations and responsibilities through outside agencies. All department officers have received training sufficient to meet the provisions of NFPA 1021, *Standard for Fire Officer Professional Qualifications,* Level I.

EMS topics include trauma, pediatric advanced life support, mental health, obstetric emergencies, cardiac review, and other related topics. EMS instruction is typically provided by personnel from Kettering Health or Premier Health, the two primary hospitals in the region.

EMS delivery is guided by the department's EMS field protocol. BFD is a member of the Greater Miami Valley EMS Council (GMVEMSC). Working together, member departments in a nine-county region operate under one field protocol. This is a tremendous benefit for departments that may respond to a large incident and to those personnel who work at more than one department in the region. As a member of GMVEMSC, BFD personnel must pass a protocol review test annually and skill-check offs biannually. Skill-check offs require personnel, working within their scope of practice, to demonstrate proficiency with manipulative skills including intravenous (IV) therapy, endotracheal intubation and airway management, spinal immobilization, etc. BFD also recently received national recognition from the American Heart Association with their "Mission: Lifetime Gold Achievement Award." The medical director is William Marriot, M.D.

A review of training records from 2023 and 2024 indicate compliance with department requirements for attendance as well as sufficient hours to meet state of Ohio continuing education and recertification requirements. Training hours earned elsewhere may be submitted to the training lieutenant and upon acceptance, be included on the individual's training record. BFD is chartered by the Ohio Division of EMS as an approved training site, allowing for the issuance of continuing education credits for training provided by the department.

Station 22 has a training room that is supported by audio-visual and electronic equipment to conduct training sessions. The room has ample space and is equipped with mobile tables and chairs.

Risk Assessment

The concept of community risk assessment is an important tool in evaluating and planning for department services. Understanding the risk a community faces from a fire or rescue perspective, as well as some of the other natural, technological, and human-caused risks in the community, helps lay the groundwork for determining service objectives and the resources necessary to provide emergency services to the community. The community risk assessment (CRA) tool was used to assess the property risk within the city.

The CRA process involved performing a coordinated survey of every "target hazard" property in the department's response area. A target hazard is generally described as any large manufacturing or commercial property that typically requires a larger number of resources than is normally deployed for residential and other common types of occupancies. Target hazards also would include buildings of public assembly of 100 or more people and apartment buildings of 12 units or more. Schools, hospitals, nursing homes, and larger industrial complexes that may contain high-hazard processes or hazardous materials on site would be included.

The master target hazard file supplied by the department was used to identify, then survey and document the risk imposed by each property. This task was completed by BFD personnel upon receiving training from the assessment team. The properties were assessed for the risk posed for each of the following elements:

- Life hazard
- Community impact
- Hazard index
- Water supply
- Building usage
- Building construction
- Number of stories
- Square footage

Each of the areas described received a rating score from 1 to 3, with 1 equating to low risk or impact and 3 representing high risk or high impact. Each address was provided with a final CRA rating from 0-9 for the lowest risk properties to 21-24 for the highest risk (based on the eight rated categories). The scores were reviewed and the following levels of identified risk were classified.

Risk	CRA Score
Maximum	21-24
Significant	16-20
Moderate	10-15
Low	0-9

The risk assessment covered 30 target hazards. There were no occupancies that rated a maximum risk. However, 11 occupancies rated a significant risk while the remaining 19 occupancies rated a moderate risk. The risk profile is typical for a community of this size.

The Bellbrook Sugarcreek School District has two facilities located within the city: Stephen Bell Elementary School, 4133 Shadowleaf Drive and Bell Creek Intermediate School, located at 3777 Upper Bellbrook Road. Schools always pose a special challenge due to their size and number of occupants. An AES Ohio electrical substation and CenterPoint Energy natural gas transfer station are located in the western area of the city; both are located on West Franklin Street. Also located in the city are seven churches of various sizes.

Response Considerations

In fire suppression and EMS response there are several recognized safety and response standards or guidelines that are considered when analyzing emergency service delivery. NFPA 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness Program* is the safety standard for the fire and EMS service and deals with all aspects of fire department operational safety. Major components of the standard include personnel, apparatus, equipment, and incident management. The topics have general performance objectives, but the specific topic is generally more formally addressed in its own specific standard. Appendix B in NFPA 1500 contains a checklist that can be useful for departments to evaluate their overall safety and health program. While NFPA 1500 is non-binding, the OAC specifically addresses many aspects of firefighting safety standards and firefighting equipment.

OSHA has established a national standard for fire ground staffing as it relates to interior firefighting operations. Although the directive is very detailed, it essentially states that before two properly trained and equipped firefighters can enter a structural fire there must be at least two or more properly trained and equipped firefighters ready to replace, rescue or assist the initial entry firefighters. This standard is often referred to as the "2-in, 2-out" rule. This rule also is listed in OAC §4123:1-2, which applies to firefighting operations in Ohio.

Another critical factor in meeting service expectations is assuring that response crews are capable of performing the required tasks on arrival. The dispatching of a specific response with a minimum crew assignment is a concept that is widely supported by fire service literature and industry best practices. The NFPA's *Fire Protection Handbook* provides recommendations for the minimum response to various structures. Table 2 depicts those recommendations.

Structure Type	Minimum Response
High-hazard occupancies Schools, hospitals, nursing homes, explosives plants, refineries, high-rise buildings, and other high life hazard or large fire potential occupancies.	At least 4 pumpers, 2 ladder trucks (or combination apparatus with equivalent capabilities), 2 chief officers, and other specialized apparatus as may be needed to cope with the combustible involved, not fewer than 24 fire fighters and 2 chief officers. One or more safety officers and a rapid intervention team(s) are also necessary.
Medium-hazard occupancies Apartments, offices, mercantile and industrial occupancies not normally requiring extensive rescue or fire-fighting forces.	At least 3 pumpers, 1 ladder truck (or combination apparatus with equivalent capabilities), 1 chief officer, and other specialized apparatus as may be needed or available; not fewer than 15 fire fighters and 1 chief officer, plus a safety officer and a rapid intervention team.
Low-hazard occupancies One-, two-, or three-family dwellings and scattered small businesses and industrial occupancies.	At least 2 pumpers, 1 ladder truck (or combination apparatus with equivalent capabilities), 1 chief officer, and other specialized apparatus as may be needed or available; not fewer than 14 fire fighters and 1 chief officer, plus a safety officer and a rapid intervention team.
Rural operations Scattered dwellings, small businesses, and farm buildings.	At least 1 pumper with a large water tank (500 gal or more), one mobile water supply apparatus (1,000 gal or larger), and such other specialized apparatus as may be necessary to perform effective initial fire-fighting operations; at least 12 fire fighters and 1 chief officer, plus a safety officer and a rapid intervention team.
Additional alarms	At least the equivalent of that required for rural operations for second alarms. This may involve the immediate use of mutual-aid companies until local forces can be supplemented with additional off-duty personnel.

Table 2: NFPA recommended minimum response resources based on occupancy hazard type

BFD has written procedures for dispatching initial companies as well as specific actions and assignments for the first-arriving engine company. The department also has developed alarm assignments, which includes AMR companies, and greater alarm assignments, all based on the location of the incident within the city. A report of a fire or a confirmed working fire in a residential structure has a response of three engine companies, one ladder company, one medic company, and one chief officer. For example, if a fire occurs in the western area of the city, mutual-aid companies from Sugarcreek Township and Washington Township would be dispatched to the scene. A fire in the eastern portion of the city would have Sugarcreek Township and Beavercreek Township dispatched to the scene. These alarm assignments have been preprogrammed in the Greene County

Communications Center CAD, which allows for simultaneous and seamless dispatching of assigned units. Below are the department's response assignments based on the type of call.

Fire Response

Vehicle Fire, Trash Fire
- One Engine

Outside or Brush Fire
- One Engine

Service Call
- One Engine

Residential Fire Alarm
- One Engine
- One Chief Officer

Residential Fire
- Three Engines (Bellbrook, Sugarcreek Township, and one engine from either Beavercreek, Spring Valley, or Washington Township)
- One Ladder (Sugarcreek or Washington Township)
- One Medic (Kettering)
- One Chief Officer (Bellbrook or next available)

Commercial Fire
- Four Engines (Bellbrook, Sugarcreek Township, and two mutual-aid engines as described above)
- Two Ladders (Sugarcreek and Washington Township)
- One Medic (Kettering)
- One Chief Officer (Bellbrook or next available)

EMS Response

EMS – low acuity
- One Medic

EMS – high acuity (cardiac arrest, trauma, etc.)
- One Medic
- One Engine (Sugarcreek Township)

Motor Vehicle Accident with injury
- One Medic
- One Engine (Sugarcreek Township)
- One Chief Officer (Bellbrook or next available)

Response Performance

Response goals are a local decision and are based on a variety of factors. Some of those factors include demographics and size of the response area, risk, demand volume, and public expectation. A number of efforts have been made to develop a consensus standard for response time, unit staffing and deployment of resources. While there is no one consensus standard, there are several that provide guidance.

NFPA 1710 is the *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.* The standard outlines criteria that address functions and objectives of fire department emergency service delivery, response capabilities, and resources.

The Commission on Fire Accreditation International, which is part of the Center for Public Safety Excellence (CFAI), publishes criteria in their *Standards of Cover*. CFAI criterion refers to NFPA 1710 for communities that have personnel on-station, regardless if the personnel are full-time or part-time, or the community is suburban or urban in nature.

ISO provides some guidelines, but those are singularly focused on travel distance. For full credit, ISO recommends that all residential and commercial properties within BFD's service area have a first-due engine company within one and a half road miles and a ladder-service company within two and a half road miles.

Based on NFPA 1710 criteria, BFD should meet the following response time objective: for 90% of all fire incidents, the first-due unit shall arrive within seven-minutes, six seconds (7:06) total response time. This response objective includes 106 seconds (1:46) for call processing at the communication center, 80 seconds (1:20) for turnout, and 240 seconds (4:00) for travel time. This response time objective begins when the 9-1-1 call is received at the communication center. Time requirements for EMS calls are comparable to fire incidents and are based on research conducted on pre-hospital delivery of medical care and patient outcome and survivability. The purpose of a quick response, especially in the most critical situation (cardiac arrest) is that the brain, devoid of oxygen and circulation, begins to die within four to six minutes. Interventions include early CPR and electrical defibrillation.

The response time objective for EMS incidents includes 120 seconds (2:00) for call processing, 60 seconds (1:00) for turnout, and 240 seconds (4:00) for travel time. The total response time is seven minutes (7:00) for 90% of the incidents.

The published response criteria are based on national fire behavior research. There also is information on EMS response and defibrillation in relationship to patient outcomes. This research and other detailed information can be reviewed in Appendix B.

Call Processing Time

Determining an acceptable amount of time to process an emergency call can be difficult because communication center systems vary from jurisdiction to jurisdiction. NFPA 1225, *Standard for Emergency Services Communications Systems,* establishes various benchmarks for call handling depending on the system, type of call, and level of caller assistance provided. For example, Greene County telecommunicators are trained in emergency medical dispatch (EMD), which is an enhanced service to the public. EMD is where a properly trained telecommunicator can provide medical assistance instructions to a 9-1-1 caller who is requesting help. Examples would be bleeding control, emergency breathing, and CPR instructions. With this enhanced level of service, EMS call processing and dispatching shall be completed within 120 seconds (2:00) 99% of the time. For fire calls, emergency call processing and dispatching shall be completed within 106 seconds (1:46) for at least 95% of the alarms. This call processing criterion is from the time the 9-1-1 call is received to the time the emergency response agency is "toned out" for the call.

Turnout Time

Turnout time is measured from the time personnel are "toned out" or notified for an emergency response to the time the first unit marks enroute to the call. Turnout time is a measurement used for personnel who are typically "in-station". The turnout time benchmark is 80 seconds (1:20) for fire calls and 60 seconds (1:00) for EMS calls.

Travel time

Travel time is the time it takes for dispatched response units to arrive on scene at the emergency. Travel time is generally considered to encompass the distance and time traveled from the fire station housing the apparatus until it arrives on scene at the location of the emergency. However, several factors can affect travel time. Winter weather conditions as well as localized flooding can affect travel time during certain times of the year. Traffic patterns on heavily traveled roadways, especially during peak travel hours can affect the emergency response. Travel time and subsequently overall response time can also be affected by the location of the fire station. Bellbrook operates from two stations, but only Station 22 is staffed. Those areas farthest from Station 22 will have longer travel times.

Total Response Time

Total response time (sometimes referred to as total reflex time) is that time which totally encompasses the response event, from the time the call for service is initially received at the communications center through the time the first units arrive on the scene. If the call handling time previously identified is taken into consideration, the total response time for fire emergencies, based on NFPA published criteria, is seven-minutes, six seconds (7:06) for 90% of the incidents. The total response time for EMS emergencies is seven-minutes (7:00) for 90% of the incidents.

BFD has a stated goal of "two-minute turnout time", which means the goal is to have the unit responding receive notification of the call and leave the station enroute to the scene within two

minutes or less. The department also has a stated "response time" goal of five-minutes. This means the goal for response time (from the time of the dispatch to the time of arrival on the scene) of the fire or EMS unit is five-minutes or less. The response time goal has different parameters than the NFPA published criteria in that the call handling time segment is not included. Both of these performance goals are established by directive. This is an excellent method of establishing and measuring the department's response performance in the community. The data analysis that follows will include the department's performance following the published criteria and the established local performance goals.

Data Analysis

Data generated during the reporting period of January 1, 2023 through December 31, 2024 was analyzed to determine response performance. The data set included fire responses and EMS responses coded as an emergency response. Responses that were coded as non-emergency responses (no lights and sirens) were not included in the analysis. False alarm responses where the responding units were canceled before arrival and mutual-aid responses were also excluded from the data set. In addition, the following response time elements in Table 3 were considered outliers and not included in the analysis.

Call Handling	Turnout	Travel	Total Response
>5 minutes	>5 minutes	>20 minutes	>25 minutes

Table 3: Response data analysis parameters

It is common for many organizations to use average response times in determining response performance. However, the use of averages and median measurements does not provide a true indication of performance. One or two "outliers" may adversely affect the response analysis, leading management and residents to an inaccurate and at times, unfair service expectation. NFPA and CFAI have recognized the use of percentiles as the most accurate method to analyze and evaluate response performance.

Table 4 displays the department's overall response performance for fire responses within the city when compared to NFPA response criteria. For fire responses, the target time benchmark is 95% for call handling and 90% for turnout time, travel time, and total response time. The percentage column shows the actual percentage the department is meeting the target time objective. Meeting the target-time benchmark for at least 70% of the incidents is often considered the minimum performance goal. The 90th percentile column identifies the department's actual segment or response time for 90% of the responses.

ELEMENT	TARGET	PERCENTAGE	90th PERCENTILE	95TH PERCENTILE
Call processing time	1:46	87%		2:40
Turnout time	1:20	37%	2:37	
Travel time	4:00	89%	4:13	
Total response time	7:06	87%	8:10	

Table 4: BFD's fire incident response performance against NFPA criteria

Overall, the data analysis for total fire response time indicates good performance by the department, meeting the performance benchmark 87% of the time. A performance gap was noted in turnout time, meeting the performance benchmark 37% of the time.

Table 5 displays the department's response performance for fire responses within the city when compared to the department's established response criteria. The turnout time goal is two-minutes and the total response time goal is five-minutes, which is time of dispatch through time on arrival. A percentage of goal attainment was not established with the response goals.

ELEMENT	TARGET	PERCENTAGE	90th PERCENTILE
Turnout time	2:00	64%	2:37
Total response time	5:00	74%	5:50

Table 5: BFD's fire incident response performance against department criteria

The data analysis for the department's total response time (time of dispatch to the time of arrival) goal of five-minutes is being met 74% of the time. With a two-minute turnout time goal (met 64% of the time) this leaves only three-minutes for travel time. Given the layout of the city and the distance from Station 22 to some parts of the city, 74% reflects good performance.

Table 6 displays the department's overall response performance for EMS responses within the city when compared to NFPA response criteria. For EMS responses, the target-time benchmark is 99% for call handling and 90% for turnout time, travel time, and total response time.

ELEMENT	TARGET	PERCENTAGE	90th PERCENTILE	99th PERCENTILE
Call processing time	2:00	75%		3:59
Turnout time	1:00	37%	2:01	
Travel time	4:00	89%	4:06	
Total response time	7:00	82%	7:41	

Table 6: BFD's EMS response performance against NFPA criteria

The total EMS response time shows the department is meeting the performance benchmark 82%

of the time. The EMS turnout performance benchmark of 37% is the same as the turnout time for fire response. The turnout times for both fire and EMS responses established by the NFPA are quite restrictive, so the turnout time performance is not unusual.

Table 7 displays the department's response performance for EMS responses within the city when compared to the department's established response criteria. The turnout time goal is two-minutes and the total response time goal is five-minutes, which is time of dispatch through time on arrival. A percentage of goal attainment was not established with the response goals.

ELEMENT	TARGET	PERCENTAGE	90th PERCENTILE
Turnout time	2:00	89%	2:02
Total response time	5:00	83%	5:34

Table 7: BFD's EMS response performance against department criteria

The data analysis for the department's total response time (time of dispatch to the time of arrival) goal of five-minutes is being met 83% of the time. The two-minute turnout goal is being met 89% of the time. The response performance of BFD against department criteria is very good.

Radio Communications

BFD is served by the Greene County Communications Center. Operated by the Xenia Police Department, the communications center serves as a public safety answering point (PSAP) for all 9-1-1 calls in the city. The communication center utilizes the Tyler Technologies CAD software system. A CAD system provides displays and tools that enable the telecommunications officer to handle calls for service as efficiently as possible. There are four to five telecommunications personnel on duty that handle fire, EMS, and law enforcement dispatching including radio communications and tracking of field units.

BFD and other departments in the county operate on the Greene County 800 MHz trunked simulcast radio and data system. This system is part of the Ohio Multi-Agency Radio System (MARCS), a state-of the art, multi-channel system with numerous tower sites in the region that are linked with microwave. The system allows for interoperability for all departments in the region.

Facilities

BFD operates from two fire station facilities situated in the western and eastern areas of the city. Station 21 is located at 35 North West Street and Station 22 is located at 4254 West Franklin Street. Station numbers are assigned by a countywide numbering system for the purposes of communication and identification.

Station 21

This facility was acquired in 1996 from a previous overhead door manufacturer and repurposed as a fire station, serving as a second station for the department. At that time, the department was primarily a volunteer organization, thus the facility was not designed for personnel to be "on duty" at the station. The building currently serves as a shared facility, housing the fire department administration and the road department. The apparatus bays, which are located to the rear of the structure, house a reserve engine and medic unit as well as the department's all-terrain vehicle (ATV). The fire chief's office is located in this facility; no other offices or personnel are located at this station. Overall, the building is in fair condition.

Station 21 front entrance

The front of the building and main entrance faces West Street. The entrance door is normally locked; personnel make entry into the building using a code-entry lock system. There is a doorbell at the main entrance to alert personnel to a visitor. There also is an emergency phone that allows citizens stopping at the station to report an emergency. Accessibility for handicapped individuals is possible (with assistance) at the front entrance door.

The rear of the building sets approximately 1,000 ft. from North Main Street with access from a full-width concrete pad. There are two overhead doors; one is 8 ft. x 10 ft. and the other is a double 16 ft. x 10 ft. door. Both are equipped with emergency releases enabling manual operation in the event of a mechanical failure or loss of power. There are no emergency indicators installed on bay doors that would warn a door is not fully raised. The bay doors are not protected by bollards.

The facility has a 75-kW diesel-fueled generator that can supply the entire building in the event of electric power failure. It is equipped with an automatic transfer switch that enables the generator to start automatically and transfer key building circuits anytime power is lost. The generator is tested annually and programmed to start and run on a weekly basis.

Fire chief's office

As noted previously, the fire chief is the only fire department member who occupies this facility. The chief's office has adequate work space along with file and other storage. There also is a conference table to conduct formal meetings. There is unused office space that can be utilized for storage and there also is limited storage space in the apparatus bay area. An extractor for cleaning firefighter turnout gear is located in the bay area.

There appears to be inadequate room on the parcel to expand the building footprint if needed in the future. In addition, the building does not have the necessary space and systems needed for a modern fire station facility to allow around-the-clock, in-station staffing.

Station 22

Station 22 is located at 4254 West Franklin Street (SR 725) and is situated on a rectangle-shaped parcel of land. The front of the building faces south and sets 62 ft. from the roadway with a 45-foot-wide concrete apron that provides adequate room for emergency units leaving on a response to view oncoming traffic. There appears to be adequate room on the parcel to expand the building footprint to the east if needed in the future. To the rear of the station is a fuel depot used by all city vehicles and shared with the Bellbrook Sugarcreek Local School District. The fuel depot has two 10,000-gallon underground fuel storage tanks.

Station 22

The front entrance door is normally locked; personnel make entry into the building using a code-entry lock system. The building exterior is monitored by a security camera. There is a doorbell at the main entrance to alert personnel to a visitor. There also is an emergency phone that allows citizens stopping at the station to report an emergency. Accessibility for handicapped individuals is possible (with assistance) at the front entrance door; however, the building is not designed for or equipped with special handicap appliances for door opening or interior door and counter clearances consistent with full handicap access.

The facility has a small gasoline-fueled generator located in a utility closet off the training room. Generator exhaust is properly vented through the roof of the building. When power is lost the generator will illuminate emergency lighting in the apparatus bay. If power is lost for an extended time, the city has a portable generator that can be transported to the station and connected to an outside receptacle, which connects to a transfer switch that will supply an electrical feed. Personnel are trained on a monthly basis on the operation of this unit.

Constructed in 1972, the building features concrete block construction with brick veneer and has approximately 5,800 square (sq.) ft. of space; a 2,688 sq. ft. apparatus bay and 3,112 sq. ft. for

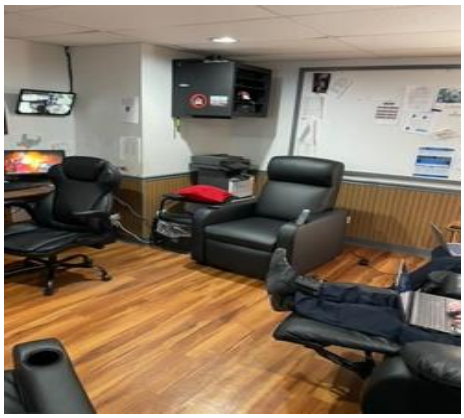
offices and living area. This station houses one engine, one ladder, two medic (ambulance) units, and one staff vehicle. It accommodates three to four personnel on duty around-the-clock.

There are three drive-thru apparatus bays. The overhead doors are 14 ft. x 12 ft. and equipped with emergency releases that allow manual operation in the event of mechanical or power failures. There are no emergency indicators installed on bay doors that would warn a door is not fully raised. Bay doors are equipped with electronic door beam sensors that would cause the door to reopen in the event an object is in the door passage when closing. The bay doors are not protected by bollards.

The apparatus bays were clean and the floors safety marked. The bay floor has 8-inch trench-style floor drains for all apparatus locations that drain to the sanitary sewer system. The drains have grease interceptors to capture dripping oil, fuel, and other potential contaminants.

This station appears to have adequate storage space. There are storage cabinets along the west wall in the apparatus bay. Along the east side of the bays are open lockers where firefighters store their turnout gear in individual racks. There is a residential-grade clothes washer and dryer in the apparatus bay. Cleaners and solvents are stored on shelves in this area. There is no diesel exhaust capture and removal system in the apparatus bay nor are the department's apparatus equipped with diesel-exhaust filter systems.

Controlled substances such as narcotics are securely kept on ambulance units in a narcotics safe with key-pad entry. Anytime a drug or controlled substance is used in the field, the drug bag is exchanged at the receiving hospital. Biohazard materials and sharp containers stored in the EMS storage room and ambulance units are disposed at local hospitals as needed.



Dayroom with work station

Kitchen

The living area of the station has a dayroom, kitchen, restrooms, and storage. The dayroom has limited space and accommodates four recliners and television along with a work station for the shift lieutenant. The kitchen area is also very small in size and is equipped with residential-grade appliances; however, there is no automatic suppression system above the electric range.

There are inadequate shower facilities for personnel. There are men's and women's restrooms; however, there is only one shower, which is located in the men's restroom. There are four dormitory rooms for personnel; two located off the dayroom and two located off the training room.

The training room has portable tables and chairs for a classroom setting and is equipped with the necessary audio-visual and electronic equipment to conduct training sessions. It is also equipped with a work station for on-duty firefighters to complete reports and other necessary work. The training room also doubles as a dining area.

Training room

The living and administrative areas are heated by a natural gas-fueled forced-air furnace and air conditioner. The dayroom and office areas are protected by single-station smoke alarms and carbon monoxide alarms are located in the first-floor hallway. These devices are not connected to a monitoring station.

Apparatus and Equipment

Overall, the department's fleet and equipment appear to be in good condition, well-maintained, and appropriate to meet the department's needs. The corresponding maintenance records and equipment inventory were reviewed by the assessment team during the site visit and found them to be in order. The fleet consists of two engines (one as a reserve), an aerial ladder, three medic units (one as a reserve), a utility vehicle, two staff vehicles, and an ATV. All fire apparatus are equipped with the necessary hose and loose equipment as outlined in NFPA 1901, *Standard for Automotive Fire Apparatus* and ISO standards. All fire apparatus are also equipped with mobile data terminals (MDTs), which are specially designed and configured laptop-style computers that are interfaced with the county communications center. This allows personnel to obtain real-time dispatch information as well as additional incident scene information. The following is a brief description of each piece of apparatus and equipment.

Engine 22 is a 2012 KME rescue-pumper with a 1,500 GPM pump and carries 750 gallons of water. This unit carries electric hydraulic rescue tools, air bags, struts, and other equipment for auto extrication and other rescue situations. This apparatus is also equipped with on-board Class A and B foam systems. This vehicle has 12,627 miles and is in good condition. It is housed at Station 22.

Engine 21 is a 2003 KME pumper with a 1,250 GPM pump and carries 750 gallons of water. This unit carries a hydraulic rescue tool and other equipment for auto extrication and other rescue situations. This apparatus is also equipped with on-board Class A and B foam systems. This apparatus serves as the department's reserve engine and is housed at Station 21. It has 33,027 miles and is in fair condition.

Ladder 22 is a 1995 Smeal quint with a 75 ft. rear-mount aerial ladder. It has a 1,250 GPM pump and carries 300 gallons of water. This vehicle has 26,833 miles and is in fair condition. It is housed at Station 22.

Medic 22 is a 2025 Horton Type I modular ambulance on a Ford F-550 chassis. It is configured and equipped to deliver ALS level care and transport service, including a LIFEPAK 15 heart monitor/defibrillator and a patient power-load system. This unit serves as the primary medic unit and is housed at Station 22. The vehicle has 1,422 miles and is in excellent condition.

Medic 21 is a 2015 McCoy-Miller Type III modular ambulance on a Ford E-450 chassis. It is configured and equipped to deliver ALS level care and transport service including a LIFEPAK 15 heart monitor/defibrillator and a patient power-load system. This unit serves as a back-up medic unit and is housed at Station 22. It has 46,859 miles and is in good condition.

Medic 23 is a 2011 McCoy-Miller Type III modular ambulance on a Chevrolet 350 chassis. This unit is configured and equipped to deliver ALS level care and transport service. This unit serves as a reserve unit and is housed at Station 21. It has 44,086 miles and is in fair condition.

Battalion 22 is a 2019 Chevrolet Tahoe sport utility vehicle (SUV). It is assigned to the on-duty shift lieutenant at Station 22 and used as a first response vehicle. In addition to incident management supplies and equipment this unit carries a thermal imaging camera, drone, self-contained breathing apparatus (SCBA), EMS supplies and an AED. This unit has 28,468 miles and is in good condition.

Chief 20 is a 2024 Dodge Durango SUV. It is assigned to the fire chief and used as a staff and command vehicle. It carries incident management supplies and equipment and designed to be used as a command post at major incidents. It is also equipped with EMS supplies, and SCBA. The unit has 3,750 miles and is in excellent condition.

Support 22 is a 2016 GMC Sierra pick-up truck. This unit is used as a utility vehicle and pulls the department's ATV and trailer. It also carries some basic water rescue equipment. The vehicle is housed at Station 21, has 24,450 miles and is in good condition.

ATV 22 is a 2001 John Deere Gator ATV. This unit, which is housed at Station 21, is transported to scenes on a single-axle utility trailer. It is used for providing EMS at special events and off-road search and rescue incidents. It is designed to accommodate a patient for transportation to an ambulance and carries EMS supplies. It has 4,200 hours and is in good condition.

BFD has a 15-year capital replacement plan that is updated regularly to adjust for inflation and operational needs. This capital plan includes apparatus, vehicles, and more expensive equipment purchases, typically those that cost $10,000 or greater. The information from this plan is then submitted to the city for consideration and inclusion in the city's five-year capital improvement plan.

The department rotates ambulance units from front-line service to back-up and reserve to extend the service life of the units, which results in a planned 15-year replacement cycle. Medic 23 is next to be replaced, scheduled for 2027. The fire chief's staff car (Chief 20) was replaced in 2024 and acquired with a lease purchase agreement. Those annual debt service payments ($18,000) will conclude in 2027. Two heart monitor/defibrillator replacements originally scheduled for 2025 were pushed back due to insufficient funding from the department's existing tax levies. A replacement ladder truck was also in the department's 15-year plan. Due to insufficient funding, this apparatus was not included in the city's five-year capital improvement plan. A shortened five-year version of the department's internal capital replacement plan is displayed in Table 8.

Project Description	2026	2027	2028	2029	2030
Cardiac Monitors (x2)	$150,000				
Ambulance (replacement)		$400,000			
Thermal Imaging Camera				$7,000	$7,500
Ladder Truck (replacement)	$1,750,000				
Drone				$12,000	
LUCAS Device (EMS)		$20,000	$20,000		
ATV with medical bed			$35,000		
Diesel Exhaust System				$75,000	
Amount Totals	$1,900,000	$420,000	$55,000	$94,000	$7,500

Table 8: BFD's capital replacement plan 2026-2030

Equipment Maintenance and Self-contained Breathing Apparatus

In addition to apparatus, fire departments utilize a variety of specialized equipment to effectively deliver fire protection services and provide a level of safety for the individual firefighter. This specialized equipment is designed and manufactured according to NFPA standards to provide a high level of reliability, durability, and efficiency while operating in difficult and challenging environments. Manufacturers of this specialized equipment develop recommendations for the testing and maintenance of said equipment, which almost universally includes the recommendations developed by the NFPA. The state of Ohio also recognizes the importance of maintaining this special equipment and other safety requirements with the promulgation of OAC Chapter 4123:1-21, which addresses *Firefighter Occupational Safety and Health.* These recommended criteria and adopted rules provide the basis for the assessment team's inspection and review of the department's equipment, maintenance practices, and record keeping.

BFD uses Scott 30-minute, 4,500 psi SCBA units (model 4500 X3 Pro). The inventory of 19 SCBA range from new to six-years old and are in very good condition. There is an SCBA unit for each riding position in all apparatus, ambulances, and staff vehicles. There are spare cylinders for each of the units, which are carried on the apparatus. The department also has two rapid intervention team (RIT) kits with 60-minute cylinders.

The current respiratory protection program includes annual facepiece qualitative fit testing. Annual medical clearance for personnel to wear and use a respirator in a hazardous environment (as outlined in the OAC) is not currently performed. SCBA annual flow testing is conducted by MES Life Safety Services of Warren, OH. Respiratory protection program records (flow testing, repair and fit-testing) were reviewed and found to be up-to-date and well-maintained.

The department has a Bauer 5,000 psi breathing air compressor and cascade air-filling system at Station 22. The department contracts with Breathing Air Systems of Reynoldsburg, OH to

inspect and maintain the compressor on a regular basis, which includes air quality testing. Those records are appropriately recorded and maintained.

Annual pump testing is conducted by Atlantic Emergency Solutions of Springboro, OH in accordance with NFPA standards. Testing documentation is maintained. Every four years, the department should consider expanding pump testing to include non-destructive apparatus frame inspection and analysis. This testing looks for early signs of cracks, delamination, and corrosion of frame rails, supports, and tire rims. This helps assure safe and proper operation of apparatus during an emergency response.

Ground ladders and the aerial are inspected and tested annually in accordance with NFPA standards by Consolidated Fleet Services of Searcy, AK. The records were reviewed and found to be appropriately recorded and maintained.

Hose testing is conducted annually by BFD personnel in accordance with NFPA standards. Hose testing records from the past four years were reviewed and found to be in order. An inspection of the hose found the department's inventory to be in overall good condition.

Personal Protective Equipment

The department provides structural personal protective equipment (PPE) to all personnel. Structural PPE is often referred to as turnout gear. The turnout gear is Lion Apparel PBI manufactured according to NFPA standards. The department purchases new turnout gear annually to establish a regular replacement cycle. Each member receives a new set of gear every five-years with the existing set of gear becoming a back-up set. The goal of providing each member with two sets allows for regular cleaning and maintenance while still providing an operational set of gear. This improves the safety for each firefighter, reducing the exposure to fire byproducts and carcinogens on the surface of turnout gear.

The PPE is cleaned in-house using the department's extractor located at Station 21. Each set of turnout gear undergoes an annual inspection. At Station 22, the PPE is stored in open wooden racks along the apparatus bay. However, the station is not equipped with a diesel-exhaust capture and exhaust system, which exposes the PPE to the accumulation of diesel exhaust fumes and particulates generated when apparatus are operated in the station.

Administrative Policies and Standard Operating Procedures

The department is subscribed to Lexipol™, a fee-based subscription service for fire departments and local governments in Ohio. Lexipol provides a comprehensive set of policies and standard operating procedures (SOPs). The policy manual covers a variety of topics including drug- and alcohol-free workplace, protected health information (HIPAA), wellness, workplace violence, etc. The department also has policies on hiring, medical examinations, and other topics. Included with the policies are the city of Bellbrook's policies, which are also published by

Lexipol. City polices include standards of conduct, social media use, payroll, performance evaluations, accident procedures, Americans with Disabilities Act (ADA) compliance, insurance plans, Family and Medical Leave Act (FMLA), etc.

The SOPs include written procedures for incident management, mutual-aid response, fireground operations, and active shooter response. The department follows countywide procedures for accountability, Mayday, evacuation, and RIT. A number of daily operational areas were addressed including chain of command, job descriptions, and internet use.

Sugarcreek Township

Sugarcreek Township is located in the southwestern corner of Greene County. Encompassing an area of 26.6 sq. mi., the township surrounds the city of Bellbrook except for a small portion of the city's northwestern corporation line that borders the city of Centerville (Montgomery County) and a portion of the southwestern corporation line that borders Washington Township (Montgomery County). Sugarcreek Township is bordered by the city of Beavercreek and Beavercreek Township on the north, Spring Valley Township on the east, Wayne Township (Warren County) on the south, Washington Township (Montgomery County) on the west, and the city of Kettering on the northwest. Figure 6 is a map of Sugarcreek Township.

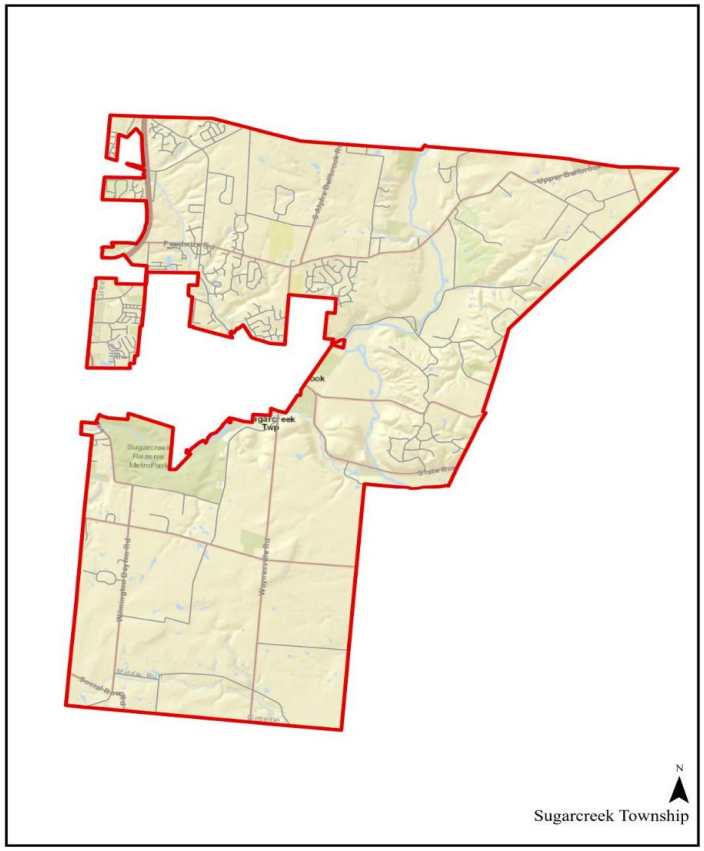


Figure 6: Map of Sugarcreek Township

The township has a unique blend of residential, commercial, and retail development combined with agricultural land and open green space. Sugarcreek Township is well known for its residential opportunities with over 21 residential subdivisions ranging from 30 to 400 homes in each. These subdivisions are a varied mix of starter homes, young urban professional, and elderly housing. There are currently two active subdivisions with new single-family homes under construction. The township also features six parks, which are part of the larger Bellbrook Sugarcreek Park District as well as other outdoor recreational venues. There are regular events held at numerous parks as well as the annual Sugar Maple Festival. Township residents are served by the Bellbrook Sugarcreek Local Schools, regarded as a high-performing school district. Major employers in the area include the Bellbrook Sugarcreek Local School District, Ernst Concrete, Kroger's Marketplace, and the township.

Major roadways in the township include Franklin Street (SR 725), Clyo Road, Wilmington Pike, which changes to Wilmington-Dayton Road south of Bellbrook, Feedwire Road, which changes to Upper Bellbrook Road east of Waynesville Road, Centerville Road, Waynesville Road, and Little Sugarcreek Road. A 2.13-mile section of Interstate-475 is located in the northwest portion of the township. This includes the northbound entrance ramp and southbound exit ramp at Wilmington Pike. Township officials recently announced a multi-year joint project with the city of Centerville and Greene County Engineer's Office to upgrade this high-volume traffic area including the widening of Feedwire Road and Feedwire Road bridge.

The Little Miami River meanders through the township from the north to the south and southeast into Spring Valley Township. The Little Sugar Creek meanders through the township from the northwest to the southeast and empties into the Little Miami River just south of SR 725 at the township's southeastern border with Spring Valley Township.

Sugarcreek Township is a township form of government as outlined in the Ohio Constitution. The township is governed by a three-member board of trustees elected to staggered four-year terms. There also is an elected fiscal officer and an appointed township administrator, who oversees daily operations of the township.

Demographics

According to the most recent published U.S. Census data, the township's population in 2020 was 9,534, which is an increase of 1,894 residents (18.6%) from the 2010 census. The current population is 86% White, 3% Asian, and 3% Black; other ethnicities make up 7% of the population. Citizens over the age of 65 account for 23% of the population and children under five years of age account for 5% of the population.[3] The township has a population density of 358 people per square mile.

[3] U.S. Census 2020

Growth

Sugarcreek Township has experienced controlled residential growth over the past decade. A commercial corridor has also expanded along Wilmington Pike south of the Interstate-675 interchange. Most of the development has occurred in the northwestern and northern areas, which includes areas just north of the city of Bellbrook.

Township officials predict continued growth will be controlled with limited light- and medium density residential development. This follows with goals and expectations outlined in *Sugarcreek Township's 2025 Comprehensive Land Use Plan*. Key criteria from the plan include maintaining the rural character of the community and focusing on targeted residential development while retaining viable agricultural land. The plan also calls for the consideration of higher-density, multi-family development near existing municipal boundaries. Limited growth is expected in the southern and southeastern areas of the township, which is currently identified primarily as agricultural or undeveloped land. Single-family residential zones in this area of the township have five-acre lot size minimums, which helps control the number of larger and more densely developed residential subdivisions as well as planned unit developments. Additional commercial development is expected but limited to the northwestern area of the township near the Wilmington Pike corridor.

Department History

The history of the Sugarcreek Township Fire Department (STFD) is shared with the Bellbrook Fire Department. As described on page 5, the Sugarcreek-Bellbrook Fire Department was organized in 1949. A new fire station was constructed in downtown Bellbrook and additional firefighting equipment was acquired to support the then all volunteer department. A fire station was constructed in 1972 at West Franklin Street and North Linda Drive (the site of the current Bellbrook Fire Station 22) and a second fire station in 1982 at the intersection of East Franklin and South East Streets (the current site of Sugarcreek Township Fire Department Station 71).

STFD was formed in 1989 when the Sugarcreek-Bellbrook Fire Department split after township residents filed a petition to have the city removed from the township. STFD retained Fire Station 71 and a portion of the equipment and apparatus. Full-time staffing was added in 2002. In 2004, the township opened a second station (Station 72) on Clyo Road.

Mission, Vision, and Core Values

All organizations should have a mission statement. A carefully crafted mission statement describes an organization's purpose, function, and services provided. STFD has a clearly developed mission statement along with a vision and defined core values that identify the organization's culture and belief system.

Mission

The Sugarcreek Township Fire Department is dedicated to preserving life, property, and the environment. We will achieve our commitment and maximize community resources by utilizing effective principles and practices of modern fire and life safety technology.

Vision

Caring professionals protecting the community.

Core Values

Respect – *We manifest the value of mutual respect by setting high personal standards and encouraging trust, fairness, and the recognition of dignity.*

Teamwork – *We believe skillful communication and personal cooperation will result in improved teamwork, thereby helping us achieve common goals.*

Integrity – *We expect honesty, loyalty, and dedication.*

Accountability – *We believe that as professionals we are responsible for our actions.*

Service – *We strive for excellence in fire and emergency services through periodic evaluations and progressive training.*

Involvement – *We believe in fire prevention through education.*

Staffing

STFD is a combination department with 49 uniformed personnel. The current roster includes a full-time fire chief, full-time assistant chief, full-time fire marshal, three full-time shift captains, three full-time shift lieutenants, and six full-time and 33 part-time firefighters and EMS personnel; one part-time employee holds the rank of lieutenant.

Daily staffing at Station 71 includes a full-time lieutenant, one full-time firefighter, and one part-time firefighter. Staffing at Station 72 includes a full-time captain who serves as the shift commander, one full-time firefighter, and one to two part-time personnel. The department's minimum staffing is five; two personnel at Station 71 and three personnel at Station 72. If the staffing falls below station minimums, off-duty personnel are recalled to fill the vacant position and paid an overtime rate for the time worked. STFD also has an internal program for certifying personnel to drive and operate apparatus. Certified personnel could also be recalled to fill driver/operator positions if needed. Data shows the department worked at minimum staffing 50% of the time over the past year.

Full-time personnel work a standard fire service three-platoon system with personnel on each of the three shifts working 24 hours on duty followed by 48 hours off duty. This is referred to as a 56-hour workweek. However, STFD shift personnel work a 53-hour workweek as identified in the CBA between the township and International Association of Firefighters Local 4175. With a 53-hour workweek personnel earn additional time off each 28-day work cycle, which equates to seven extra days off annually.

Eight of the department's part-time personnel work a 24-hour shift every sixth day. Other part-time personnel schedule 12-hour shifts as they are available. Part-time personnel are required to work 48 hours monthly with a maximum of 120 hours. The fire chief, assistant fire chief, and fire marshal work a standard 40-hour workweek. An organizational chart depicting the department's current structure is displayed in Figure 7.

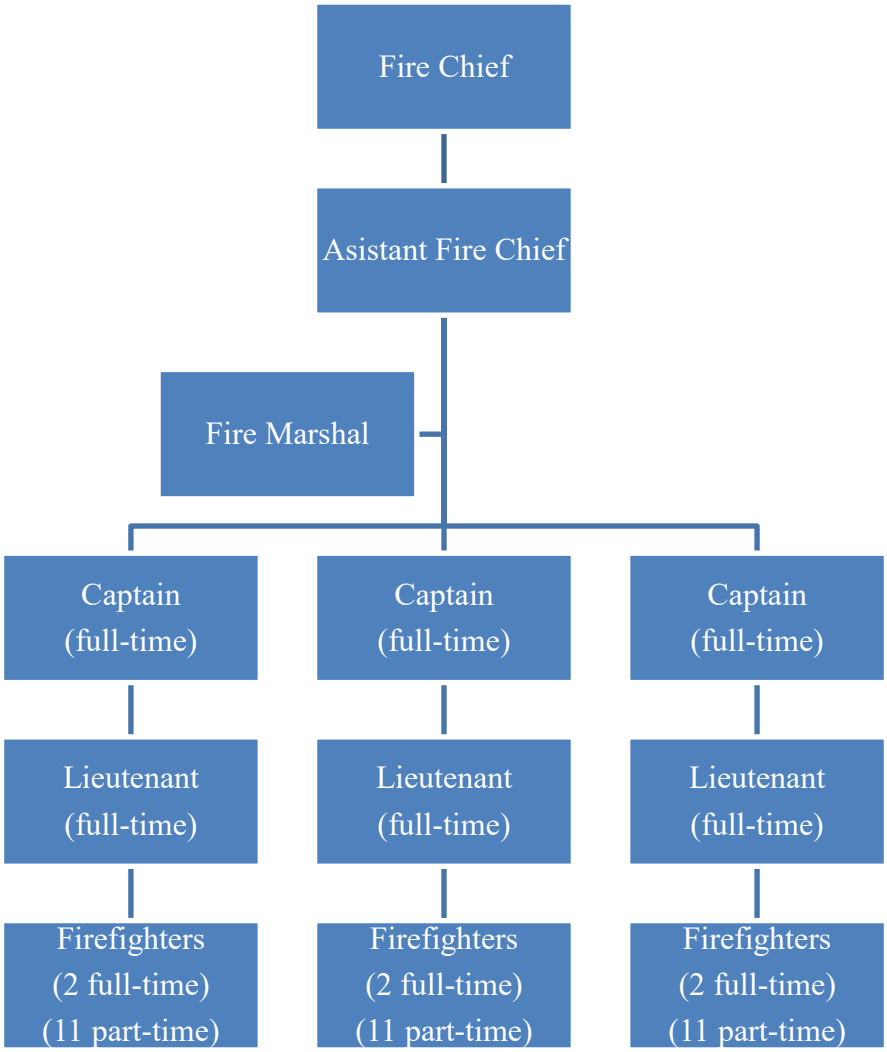


Figure 7: STFD organizational chart

Full-time positions receive an annual salary plus fringe benefits. Wages for captains, lieutenants and firefighters are listed in the CBA. Firefighters have a seven-step wage scale that incrementally increases annually based on their original date of hire. Captains and lieutenants have a three-step wage scale. For 2025, the annual wage at the top pay step is $96,710 for captain, $86,865 for lieutenant, and $75,283 for firefighter. Additional benefits include vacation leave, sick leave, up to 48 hours of personal leave (depending on sick leave usage), 12 paid holidays, health care, which includes a dental and vision plan, and life insurance. Annual salaries for the executive positions are fire chief $116,949; assistant fire chief $110,570; and fire marshal $61,651, plus other benefits as described.

Part-time personnel have a five-step hourly wage scale based on firefighting and EMT certification levels. The wage scale for individuals with FF II and paramedic certification ranges from $21.15 to $23.82 per hour and $18.80 to $21.15 per hour for those with FF II and EMT certification. The wage scale for those with EMS only certification ranges from $19.13 to $21.54 per hour for paramedic certification and $17.54 to $19.75 per hour for EMT certification.

Hiring

The hiring process for new full-time and part-time personnel is a robust, multiple-step process. Once an application is received for a full-time position, the applicant is subject to a background investigation conducted by the Greene County Sheriff's Office. The applicant must then pass both an in-house written examination and physical capability test. The next phase of the process is an interview with the fire chief, assistant fire chief, and a shift captain. The applicant is then tendered a tentative offer of employment pending completion of a medical examination and drug screen. The successful applicant, with a recommendation from the fire chief, is presented to the board of trustees for appointment to the position. The new hire physical and drug screen is completed at Kettering Health located in nearby Kettering at cost of $1,582.

Full-time personnel must possess the following minimum certifications at the time of appointment: FF II, EMT, and a valid Ohio operator's license. Personnel are required to obtain fire-safety inspector certification within their first year of employment followed by obtaining paramedic certification.

Applicants for part-time positions are subject to a background investigation and interview as described previously. The applicant is then offered a tentative offer of employment pending completion of a medical examination and drug screen. Part-time personnel must possess the following minimum certifications at the time of appointment: FF I, EMT, and a valid Ohio operator's license. However, the department also accepts applications for part-time positions from those who desire to function in an EMS only role. EMT is the minimum certification for these applicants. All new personnel are subject to a one-year probationary period with regular employee evaluations. They also must complete a probationary packet under the supervision of their shift officer.

If existing part-time personnel wish to apply for an open full-time position, they must submit an application for the position. They are subject to the same application process for full-time positions as described previously. After receiving a tentative offer of employment, the applicant must complete a medical examination and drug screen. The successful applicant, with a recommendation from the fire chief, is presented to the board of trustees for appointment to the position.

Funding

The fire department is funded with voter approved fire and EMS levies that apply a millage rate against the taxable value of real properties within the township, excluding properties located in the city of Bellbrook. There are currently five levies totaling 7.80-mills that support fire department operations: a .30-mill continuous levy passed by voters in 1982; a 2.90-mill continuous levy passed in 2006; a 1.30-mill continuous levy passed in 2005; a 1.30-mill continuous levy passed in 2009; and a 2.00-mill, five-year levy passed in 2022 that runs through 2027. Estimated revenue from these levies in 2025 is $3.275 million. In May of 2025, voters approved a 1.0-mill levy for fire department operations. Beginning in 2026, this levy will generate an additional $637,000 annually.

The department also receives revenue from EMS billing for treatment and transportation of patients to the hospital. EMS revenue for 2024 was $315,472. The department contracts with Medicount Management of Evendale, OH to manage and process all EMS billing for the fire department. The township has a "soft-bill" policy for township residents and "hard-bill" policy for non-residents.

STFD's appropriated operating budget for 2024 was $3.69 million with actual expenditures totaling $3.15 million. Expenditures for personnel accounted for 77% of the total expenditures which includes wages, health and other insurance benefits, Medicare, FICA, and Ohio BWC premiums.

The township has a capital improvement plan to address the fire department and other township department's needs. STFD's apparatus replacement plan is found on page 68. Some of the department's capital equipment replacements or new acquisitions in 2023 and early 2025 include fire hose ($23,000), three battery-powered stair chairs ($40,000), and four thermal imaging cameras ($14,000). Three LIFEPAK 35 heart monitor/defibrillators ($157,000) were also acquired on a purchase plan with three annual debt service payments of approximately $54,000.

Service Demands

Over the past eight years, the total calls for service have steadily increased. For example, the department responded to 997 calls in 2017 and 1,526 calls in 2024. Overall, the department experienced a 53% increase in total calls for service during the eight-year period of 2017 through 2024. If multiple fire companies respond to a fire, it counts as one incident or call for service.

STFD's total calls for service are displayed graphically in Figure 8. Note: call data for 2015 and 2016 was lost during a switch to a new software database system and therefore was not available.

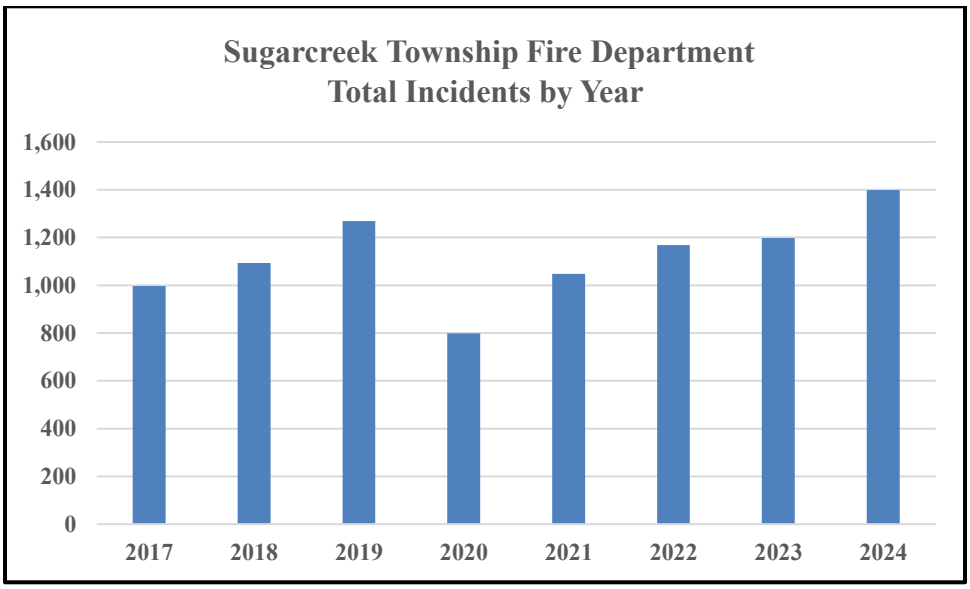


Figure 8: STFD's eight-year incident response history

During this eight-year period, fire responses increased 66% while EMS response increased 48%. Figure 9 shows a comparison of fire and EMS demand from 2017 to 2024. A significant decrease in service demand was experienced in 2020 due to the COVID-19 pandemic.

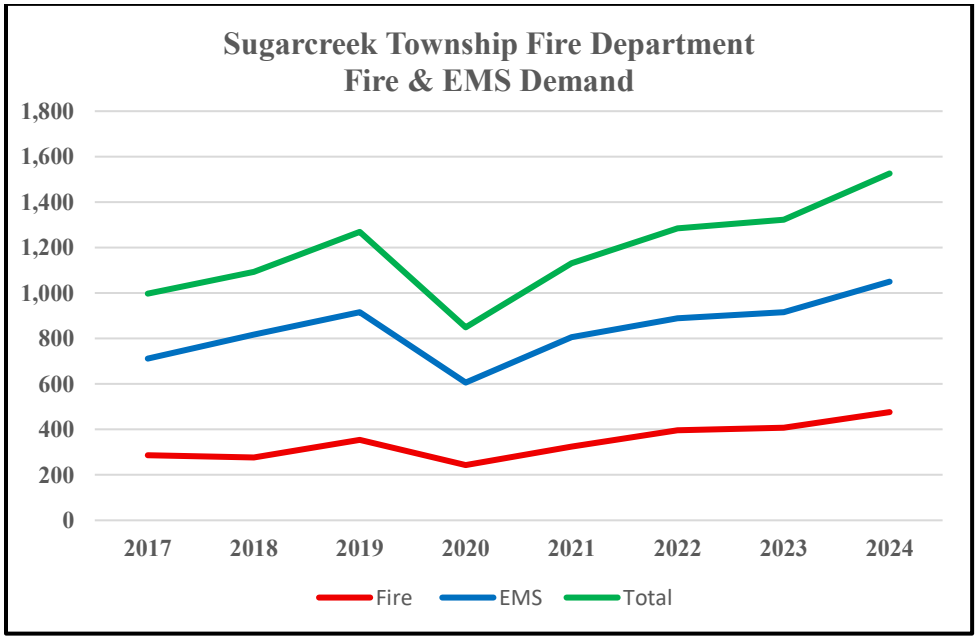


Figure 9: STFD's eight-year incident response trends

For the purposes of this report, fire responses include building, auto, and grass fires, as well as fire alarms, rescues, carbon monoxide calls, service calls, and other non-EMS responses. Also included in the total calls for service are mutual-aid responses. STFD has mutual-aid agreements with surrounding departments, achieved with a single multiple-county contractual agreement. STFD also has informal AMR agreements with Bellbrook, Beavercreek Township, Washington Township (Montgomery County), Kettering (Montgomery County), and Spring Valley Township (Warren County). These departments are predetermined based on the type and location of the incident and are listed in the Greene County Communications Center's CAD software.

Over the past five-year period (2020-2024), the number of mutual-aid responses have increased 103%. There were 61 mutual-aid responses in 2020 and 124 in 20204; however, the number of mutual-aid responses and the total number of responses were down in 2020 due to the COVID-19 pandemic. There were 50 mutual-aid responses received by STFD in 2020 and 78 in 2024. Of the total mutual-aid responses received in 2024, 50 (64%) were EMS related.

The fire loss recorded for the township has averaged $280,580 over the past five years (2020-2024). The total recorded fire loss in 2020 was $29,900 and $212,505 in 2024. However, the total fire loss spiked in 2021 with $1.07 million in loss. Recorded fire loss is difficult to predict as one large-loss event can skew any statistical analysis.

Technical Rescue

Technical rescue was described in detail on pages 11-14. STFD's response capability in each technical rescue response discipline was reviewed by the assessment team.

Vehicle Rescue – these incidents involve removing trapped victims as a result of a motor vehicle accident when conventional means of exit are impossible or inadvisable. Fire departments routinely respond to motor vehicle accidents that result in an injury to one or more victims. Some of the incidents require the use of specialized equipment carried by the department such as hydraulic-powered rescue tools, air bags, etc., to disentangle the victim for removal. A skilled and coordinated approach is needed to minimize or prevent further injury to the victim during the extrication process. STFD has a general response procedure and is equipped and trained to handle these types of incidents.

Machinery Rescue – these incidents involve removing a worker trapped in some type of industrial machine. Victims trapped in machines in an industrial or construction site setting is typically more complex, but may require the same type of rescue equipment utilized in vehicle rescue. The department has no specific response procedure for this type of incident. If an incident occurs, Washington Township Fire Department would be called for assistance.

Confined Space Rescue – includes incidents in which victims are trapped within an area that qualifies as a confined space. A confined space may be found in agricultural, industrial, and other settings as defined by OSHA. The department does not have the equipment or training for

this type of response. If an incident occurs, Washington Township and Kettering Fire Departments would be called for assistance.

Rope Rescue – includes incidents that are high-angle (elevated) or below grade and require the use of rope rescue systems to reach and rescue victims. A rope rescue incident could be part of a confined space incident due to the location of the victim. The department has a response procedure and is equipped and trained to handle low-angle rope rescue incidents. If a high-angle rope rescue incident occurs, Washington Township and Kettering Fire Departments would be called for assistance.

Trench Rescue – these incidents are also referred to as trench "cave-in" incidents and involve an excavation trench or underground cave-in that traps a victim(s). The department does not have trench rescue capability. If an incident occurs, Washington Township and Kettering Fire Departments would be called for assistance.

Swift-Water Rescue – these incidents involve the rescue of a victim(s) from fast moving water such as a river or other large stream. Of special concern are low-head dams, which can create dangerous currents, especially when river water levels are elevated or during flood stage. Both the Little Miami River and Little Sugar Creek meander through the township as well as several tributaries and watershed streams; however, there are no low-head dams within the department's response area. The department has some equipment including personal flotation devices, rope throw bags, and exposure suits. However, there is no specific response procedure and no department-wide training for this type of rescue situation. Beavercreek Township Fire Department would be called for assistance if an incident would occur.

Surface-Water and Ice Rescue – these incidents involve the rescue of a victim(s) from a non-moving body of water such as ponds, quarries, or lakes. During winter, these types of incidents could involve surface ice. Each rescue involves a specific set of equipment and operating procedures. STFD has a response procedure and is equipped and trained for ice rescue incidents. The department does not have the equipment or a specific response procedure for surface-water rescue incidents. If an incident occurs, Mad River Township Fire Department (Clark County) would be called for assistance.

Structural Collapse Search and Rescue – these incidents are often associated with large-scale urban search and rescue operations following natural occurrences such as tornadoes, earthquakes, etc. STFD will respond to an incident where structural collapse or instability will have to be managed. Examples of incidents where structural collapse has to be managed include: vehicles or aircraft versus buildings, unsafe structures as a result of a gas explosion or structure fire, building construction or renovation failures, or natural forces related to weather (e.g., rain or snow accumulations on roofs, tornadoes, etc.). In managing these incidents, it is often necessary to push, pull, cut, breach, lift, or tunnel through the materials that make up the collapsed structure. If an incident occurs, Ohio Region 3 Strike Team for be called for assistance.

In addition to the single-point response described above, multiple-point responses that are spread out over a larger area or involve many locations will require a larger resource pool, including outside agency support, large-scale incident management support, and technical expertise. Ohio Region 3 Strike Team would be called for assistance. Depending on the size of the incident, Ohio Task Force 1 could also be requested to respond.

Hazardous Materials – STFD personnel are trained in hazardous materials response to the operations level. As identified in NFPA 470, personnel have the training and equipment to identify hazardous materials presence through various recognition factors such as placards and labels, container shapes and sizes, and hazardous material sites in the response area. They also have the ability and equipment to undertake defensive type of actions and low-risk offensive operations such as plugging, patching, diking, and the placement of booms and absorbent pads and other containment actions that help control or mitigate the incident. More advanced offensive operations that require the use of level "A" (completely encapsulated protective equipment) or acid splash suits require a technician level response.

The department carries spill equipment to handle small fuel spills such as gasoline, diesel fuel, etc. Equipment and supplies include equipment to plug or control liquid releases, and clean-up equipment such as booms, absorbent pads, and granular absorbent. In the event of a large spill or significant release, STFD would request assistance from the Dayton Regional Hazardous Materials Response Team.

Community Risk Reduction

CRR programs and activities are important undertakings of a modern-day fire department. A comprehensive risk reduction system should include the key functions of what was formerly referred to generically as "fire prevention": fire-safety inspections and code enforcement, public education, and fire investigations. Preventing fires and other types of accidental incidents before they occur, and limiting the impact of those that do, should be priority objectives of every fire department. Fire investigation is a mission-important function of fire departments as this function serves to determine a fire's origin and cause and why the fire behaved the way it did, providing information that plays a significant role in fire prevention efforts. Educating the public about fire safety and teaching people appropriate behaviors on how to react should they be confronted with a fire is also an important life safety responsibility of the fire department. The department's CRR program is managed by Fire Marshal Ewing.

Inspections

The department has a coordinated effort to perform fire-safety inspections in commercial, assembly, and industrial occupancies. The goal is to inspect all commercial or non-residential occupancies annually. Inspections also are performed for new construction projects and foster homes by request. All full-time personnel are certified fire-safety inspectors. The department's inspection history for the past five years is shown in Table 9.

Year	Inspections
2020	145
2021	224
2022	62
2023	200
2024	181

Table 9: STFD's five-year inspection

STFD utilizes the codes and rules as found in the 2017 version of the Ohio Fire Code with amendments to provide guidance and support for code enforcement activities. The department considers their working relationship with the Greene County Building Department to be good. The fire chief and fire marshal conduct plan reviews and provide input on new business and commercial construction projects. Cooperative and seamless efforts are also experienced with the township zoning department.

Public Education

The department has an active public education effort in the community. In addition to fire extinguisher training for businesses and special groups, the department provides home safety, senior safety, and CPR training. In conjunction with Fire Prevention Week the department provides fire-safety education programming at the local pre-school as well as fire station tours. STFD also participates in annual community events including the Sugar Maple Festival. Personnel make equipment available for viewing and provide fire and safety education material as well as personal interaction with the public. The department also provides programming for neighborhood block parties. Over the past four years (2021-2024), an average of 1,846 people annually has received programming from department personnel. There was limited programming offered in 2020 due to the COVID-19 pandemic.

Eligible residents can also obtain combination smoke and carbon monoxide alarms, with installation by department personnel if needed. Fire prevention and safety messages are displayed on an electronic message board in front of Station 72. More detailed safety and prevention information is available on the department's webpage.

Fire Investigations

STFD conducts cause and origin investigations of all fires that occur in the township. The shift commander or fire marshal typically conduct the initial investigation. If a more in-depth investigation is necessary, the Ohio State Fire Marshal's office is called to provide investigators to assist.

Insurance Services Office

As described previously, ISO is the leading supplier of statistical, underwriting, and actuarial

information for the property/casualty insurance industry. ISO conducts field evaluations in an effort to rate communities and their relative ability to provide fire protection and mitigate fire risk. The PPC rating for the Sugarcreek Township service area is 03/3Y, which is an excellent rating. The most recent evaluation was published July, 2024.

The PPC program evaluates communities according to a uniform set of criteria defined in the *Fire Suppression Rating Schedule*, which incorporates nationally recognized standards developed by the NFPA and the American Water Works Association. The classification is developed after an evaluation in four major areas:

- Emergency Communications. This review accounts for 10% of the total classification and reviews the facilities provided for the general public to report fires and for the operator(s) on duty at the communication center to dispatch fire department companies to fires. Sugarcreek Township received 8.88 points credit out of a total maximum credit of 10.00.

- Fire Department. This review accounts for 50% of the total classification and focuses on the number of engine companies or pumping apparatus, reserve pumpers and pumper capacity; number of aerial ladder or service companies and reserve aerial ladder or service apparatus; deployment analysis; company personnel; training; and operational considerations. Ensuring that a sufficient amount of personnel is on duty, sufficient apparatus is available to respond, and appropriate fire station locations are important for this part of the credit scoring. STFD received 32.59 points credit out of a total maximum credit of 50.00.

- Water Supply System. This review accounts for 40% of the total classification. This component examines the water supply a community uses for fire suppression including water main size, distribution, and storage system. This examination includes hydrant size, type, and installation as well as the inspection frequency, maintenance, and condition of fire hydrants. Also reviewed are alternative water supply operations and a careful evaluation of the amount of water available compared to the amount needed to suppress fires up to 3,500 GPM.

  Sugarcreek Township received 34.23 points credit out of a total maximum credit of 40.00. There are three water systems serving approximately 50% of the department's service area. The city of Bellbrook, Greene County, and Montgomery County all have water distribution systems that serve parts of the township, with the majority of water services provided by Greene County. These three water systems are owned by the individual entity with Sugarcreek Township providing maintenance and hydrant testing. There are no water distribution lines or hydrants to the areas south and southeast of Bellbrook.

- Community Risk Reduction. An additional factor now evaluated is the CRR section in which fire prevention, fire-safety education, and fire investigations are evaluated. The inclusion of this in the evaluation process provides further recognition for those communities that employ effective fire protection practices and allows for extra points in the grading process. STFD benefited directly from this inclusion earning 3.59 additional evaluation points credit.

As previously described, how the PPC affects each community can vary. Most underwriters in Ohio utilize what is called in the industry the "suburban rule." This means that Sugarcreek Township businesses and residents who are located within five miles of a fire station and 1,000 ft. of a credible water supply (i.e., fire hydrant, dry hydrant, etc.) receive a rating of 3. Those located more than 1,000 ft. from a credible water supply but not over five road miles from a fire station receive a rating of 3Y (formerly an 8B). Those properties located more than five miles from a fire station typically receive a 10 PPC and therefore would be subject to higher insurance premium rates for coverage.

Training

As noted previously, certifications are required by the state of Ohio to deliver firefighting and pre-hospital emergency medical care, as both are considered a professional service. STFD is charted by the Ohio Division of EMS as an approved training site, allowing for the issuance of continuing education credits for training provided by the department.

The department conducts weekly training on Wednesday, Thursday, and Friday mornings from 9:00 am to 12:00 pm. The training is repeated on each day to allow uniform training for all three shifts. The training topics include a combination of classroom and hands-on evolutions which alternate from week to week; week one is a firefighting topic, week two is an EMS topic, etc. Training sessions are open for part-time personnel attend. For those who cannot attend, the training session is repeated by the shift officer during the next shift worked by the part-time employee. Some of the firefighting topics include: scene size-up, building construction, fire attack, ventilation, vehicle extrication, and other related topics. Additional training is scheduled and made available to personnel with *FireRescue1 Academy*, an online training resource.

The department tests core competencies for personnel annually. This involves demonstrating proficiency of key performance criteria such as proper use of SCBA, proper use of RIT packs, ladder placement, etc. Personnel complete a live burn annually utilizing Xenia Fire Department's live burn mobile trailer.

STFD also has an internal program to train and certify personal as apparatus drivers and operators. Included in this program is supervised driving time in each apparatus augmented with a hands-on driving obstacle course. Personnel also receive hazardous materials training annually. All full-time personnel have also completed the Blue Card® Hazard Zone Incident Command Training Program.

All officers and full-time personnel have received officer development training. In 2024, all full-time personnel completed Fire Officer I and II training, which would allow personnel to meet the performance objectives outlined in NFPA 1021, *Standard on Fire Officer Professional Qualifications.*

EMS instruction is typically provided by personnel from Kettering Health or Premier Health, the two primary hospitals in the region. EMS topics include trauma assessment, triage, respiratory emergencies, pediatric advanced life support, mental health, obstetric emergencies, cardiac review, and other related topics. EMS delivery is guided by the department's EMS field protocol. As a member of GMVEMSC, STFD personnel must pass a protocol review test and skill-check off annually. Skill checks require personnel, working within their scope of practice, to demonstrate proficiency with manipulative skills including IV therapy, endotracheal intubation and airway management, spinal immobilization, etc. The medical director is Richmond Lemos, D.O.

A review of the training records from 2023 and 2024 indicate compliance with department requirements for training attendance as well as sufficient hours to meet state of Ohio continuing education and recertification requirements. Training hours earned elsewhere may be submitted to the training captain and upon acceptance, be included on the individual's training document. Station 72 has an on-site training room that is supported by audio-visual and electronic equipment to conduct training sessions. The room can accommodate up to 12 personnel and is equipped with mobile tables and chairs.

Risk Assessment

As noted previously on page 19, understanding the risk a community faces from a fire or rescue perspective helps lay the groundwork for determining service objectives and the resources necessary to provide emergency services to the community. This can also include other natural, technological, and human-caused risks within the community.

The CRA tool was used to assess the property risk which involved performing a coordinated survey of every target hazard in STFD's response area. A target hazard is generally described as any large manufacturing or commercial property that typically requires a larger number of resources than provided for residential and other common types of occupancies. Target hazards also would include buildings of public assembly of 100 or more people and apartment buildings of 12 units or more. Schools, hospitals, nursing homes, and larger industrial complexes that may contain high-hazard processes or hazardous materials on site would be included.

The master target hazard file supplied by the department was used to identify, then survey and document the risk imposed by each property. This task was completed by STFD personnel upon receiving training from the assessment team. The properties were assessed for the risk posed for each of the following elements:

- Life hazard
- Community impact
- Hazard index
- Water supply
- Building usage
- Building construction
- Number of stories
- Square footage

Each of the areas described received a rating score from 1 to 3, with 1 equating to low risk or impact and 3 representing high risk or high impact. Each address was provided with a final CRA rating from 0-9 for the lowest risk properties to 21-24 for the highest risk (based on the eight rated categories). The scores were reviewed and the following levels of identified risk were classified.

Risk	CRA Score
Maximum	21-24
Significant	16-20
Moderate	10-15
Low	0-9

The risk analysis covered 68 target hazards. There were no occupancies that rated a maximum risk. However, 42 occupancies rated a significant risk while the remaining 26 occupancies rated a moderate risk.

Some of the significant risk properties that pose challenges for the department include Bellbrook Health & Rehab located at 1957 North Lakeman Drive. This 65-bed facility offers assisted living, long-term skilled nursing, and rehabilitation care. Independent living apartments are also available. The Kettering Health Sugarcreek Health Center is located at 6438 Wilmington Pike. This three-story, 79,000 sq. ft. facility has professional medical offices as well as outpatient medical services. Home2 Suites by Hilton is a three-story, 96-bed hotel and is located at 5161 Cornerstone North Boulevard. The Bellbrook Sugarcreek School District has two facilities located in the township: Bellbrook High School, 3737 Upper Bellbrook Road and Bellbrook Middle School, 3600 Feedwire Road. There also are 11 churches in the township.

There are five apartment complexes located in the township. The configuration of these buildings can pose accessibility challenges for responding fire apparatus. These include:

- The Reserve of Sugarcreek located at 964 Reserve Boulevard. This complex has 13 three-story buildings of various design and configuration.
- Cornerstone Apartments located at 5050 Cornerstone North Boulevard. This complex has six three-story buildings of various design and configuration.

- Cedar Trail Apartments located at 1832 Surrey Trail. This complex has 11 three-story buildings.
- Waterford at Sugarcreek located at 4135 Brookdale Lane. This complex has 18 two-story buildings.
- Bayberry Cove Apartments located at 4363 Bayberry Cove Drive. This complex has 21 two-story buildings of various design and configuration.

Response Considerations

Recognized safety and response standards and guidelines that are considered when analyzing fire protection services were previously discussed and identified on pages 20-21. The NFPA's *Fire Protection Handbook* provides recommendations for the minimum response to various structures. Those recommendations are repeated in Table 10.

STRUCTURE TYPE	MINIMUM RESPONSE
High-hazard occupancies Schools, hospitals, nursing homes, explosives plants, refineries, high-rise buildings, and other high life hazard or large fire potential occupancies.	At least 4 pumpers, 2 ladder trucks (or combination apparatus with equivalent capabilities), 2 chief officers, and other specialized apparatus as may be needed to cope with the combustible involved, not fewer than 24 firefighters and 2 chief officers. One or more safety officers and a rapid intervention team(s) are also necessary.
Medium-hazard occupancies Apartments, offices, mercantile and industrial occupancies not normally requiring extensive rescue or fire-fighting forces.	At least 3 pumpers, 1 ladder truck (or combination apparatus with equivalent capabilities), 1 chief officer, and other specialized apparatus as may be needed or available; not fewer than 15 firefighters and 1 chief officer, plus a safety officer and a rapid intervention team.
Low-hazard occupancies One-, two-, or three-family dwellings and scattered small businesses and industrial occupancies.	At least 2 pumpers, 1 ladder truck (or combination apparatus with equivalent capabilities), 1 chief officer, and other specialized apparatus as may be needed or available; not fewer than 14 firefighters and 1 chief officer, plus a safety officer and a rapid intervention team.
Rural operations Scattered dwellings, small businesses, and farm buildings.	At least 1 pumper with a large water tank (500 gal or more), one mobile water supply apparatus (1,000 gal or larger), and such other specialized apparatus as may be necessary to perform effective initial firefighting operations; at least 12 firefighters and 1 chief officer, plus a safety officer and a rapid intervention team.

Additional alarms	At least the equivalent of that required for rural operations for second alarms. This may involve the immediate use of mutual-aid companies until local forces can be supplemented with additional off-duty personnel.

Table 10: NFPA recommended minimum response resources based on occupancy hazard type

STFD has written procedures outlining specific action and assignments for initial responding companies. The department has also developed alarm assignments, which includes AMR companies and greater alarm assignments, based on the location of the call in the township. A report of a fire or a confirmed fire in a residential structure has a response of three engine companies, one ladder company, one heavy rescue company, one medic company, and one chief officer. For example, if a fire occurs in the northern portion of the township, mutual-aid companies from Bellbrook, Washington Township, Kettering, or Beavercreek Township would be dispatched to the scene, depending on the exact location. These alarm assignments have been preprogrammed in the Greene County Communications Center CAD, which allows for simultaneous and seamless dispatching of assigned units. This helps get additional resources on the scene quicker for structural fire incidents. Below are the department's response assignments based on the type of incident.

Fire Response

Vehicle Fire, Trash Fire

- One Engine

Outside or Brush Fire

- One Engine

Service Call

- One Engine

Residential Fire Alarm

- One Engine
- One Ladder
- One Shift Commander

Residential Fire

- Three Engines (Sugarcreek Township, Bellbrook, and one mutual-engine from either Kettering or Beavercreek, Spring Valley, or Washington Township)
- One Ladder
- One Heavy Rescue (Beavercreek or Washington Township)
- One Medic (Washington Township)

- One Shift Commander

Note: for structure fires in areas without hydrants, multiple tankers are also assigned to the response to provide sufficient water for firefighting operations.

Commercial Fire Alarm

- One Engine
- One Ladder
- One Shift Commander

Commercial Fire

- Four Engines (Sugarcreek Township, Bellbrook and two mutual-aid engines as described for a residential fire)
- Two Ladders (Sugarcreek Township and one ladder from either Beavercreek or Washington Township)
- One Heavy Rescue (Beavercreek or Washington Township)
- Two Medics (Beavercreek, Spring Valley or Washington Township)
- One Air Unit (Washington Township)
- One Shift Commander

EMS Response

EMS – low acuity

- One Medic
- One Shift Commander

EMS – high acuity

- One Medic
- One Engine
- One Shift Commander

Motor Vehicle Accident with Injury

- One Medic
- One Engine
- One Shift Commander
- If entrapment, closest mutual-aid Heavy Rescue (Beavercreek or Washington Township)

Response Performance

Response performance was described on pages 23-25. Factors affecting local response goals include demographics, risk, size of the response area, demand volume, and public expectation. Based on NFPA 1710 criteria, STFD should meet the following response time objective: for 90%

of all fire incidents, the first-due unit shall arrive within seven-minutes, six seconds (7:06) total response time. This response objective includes 106 seconds (1:46) for call processing at the communications center, 80 seconds (1:20) for turnout, and 240 seconds (4:00) for travel time. This response time objective begins when the 9-1-1 call is received at the communication center.

Time requirements for EMS calls are comparable to fire incidents and are based on research conducted on pre-hospital delivery of medical care and patient outcome and survivability. The purpose of a quick response, especially in the most critical situation (cardiac arrest) is that the brain, devoid of oxygen and circulation, begins to die within four to six minutes. Interventions include early CPR and electrical defibrillation.

The response time objective for EMS incidents includes 120 seconds (2:00) for call processing, 60 seconds (1:00) for turnout, and 240 seconds (4:00) for travel time. The total response time is seven minutes (7:00) for 90% of the incidents. Published response criteria based on national fire behavior research and information on EMS response in relationship to patient outcomes can be reviewed in Appendix B.

STFD has a stated goal of "two-minute turnout time", which means the goal is to have the unit responding receive notification of the call and leave the station enroute to the scene within two minutes or less. The turnout response time goal has different parameters than NFPA 1710 published criteria. The data analysis that follows will include the department's performance following published criteria and the established local performance goals.

Data Analysis

Data generated during the reporting period of January 1, 2023 through December 31, 2024 was analyzed to determine response performance. The data set included fire responses and EMS responses coded as an emergency response. Responses that were coded as non-emergency responses (no lights and sirens) were not included in the analysis. False alarm responses where the responding units were canceled before arrival and mutual-aid responses were also excluded from the data set. In addition, the following response time elements in Table 11 were considered outliers and not included in the analysis.

Call Handling	Turnout	Travel	Total Response
>5 minutes	>5 minutes	>20 minutes	>25 minutes

Table 11: Response data analysis parameters

It is common for many organizations to use average response times in determining response performance. However, the use of averages and median measurements does not provide a true indication of performance. One or two "outliers" may adversely affect the response analysis, leading management and residents to an inaccurate and at times, unfair service expectation. NFPA and CFAI have recognized the use of percentiles as the most accurate method to analyze and evaluate response performance.

Table 12 displays the department's overall response performance for fire responses in the township when compared to NFPA response criteria. For fire responses, the target time benchmark is 95% for call handling and 90% for turnout time, travel time, and total response time. The percentage column shows the actual percentage the department is meeting the target time objective. Meeting the target-time benchmark for at least 70% of the incidents is often considered the minimum performance goal. The 90th percentile column identifies the department's actual segment or response time for 90% of the responses.

ELEMENT	TARGET	PERCENTAGE	90th PERCENTILE	95TH PERCENTILE
Call processing time	1:46	75%		3:26
Turnout time	1:20	33%	3:07	
Travel time	4:00	48%	8:31	
Total response time	7:06	42%	12:25	

Table 12: STFD's fire incident response performance against NFPA criteria

The analysis indicates a performance gap in the overall fire response performance townshipwide, meeting the seven-minutes, six seconds total response time for the first-due fire company 42% of the time. The department is meeting the four-minute travel time benchmark 48% of the time. The performance gaps are not uncommon for a township response district where several responses to the farthest areas of the township can affect overall total response time. Responses to the far northeastern and southern portions of the township would involve significant distances from the closest fire station. Other factors that can affect response time include: multiple (overlapping) calls, apparatus deployment, training assignments, traffic patterns, weather, and human performance.

Table 13 displays the department's overall response performance for EMS responses. The percentage column identifies the frequency the department meets the target-time benchmark. Meeting the target-time benchmark for at least 70% of the responses is often considered the minimum performance goal.

ELEMENT	TARGET	PERCENTAGE	90th PERCENTILE	99th PERCENTILE
Call processing time	2:00	69%		4:32
Turnout time	1:00	20%	2:50	
Travel time	4:00	59%	7:04	
Total response time	7:00	48%	11:54	

Table 13: STFD's EMS response performance against NFPA criteria

The EMS travel and total response time show a performance gap, meeting the travel time benchmark 59% of the time and 48% of the time for total response time. However, it should be

noted that EMS response performance standards are not adjusted for the type of community served. STFD is serving a large area (26.6 sq. mi.), with much of the area considered rural. Therefore, the response performance is not surprising given the large area served. The turnout time also shows a performance gap.

Table 14 displays STFD's response performance for fire and EMS responses when compared to the department's established turnout time criteria.

ELEMENT	TARGET	PERCENTAGE	90th PERCENTILE
Fire – turnout time	2:00	54%	3:07
EMS – turnout time	2:00	68%	2:50

Table 14: STFD's turnout time performance against department criteria

The two-minute turnout time goal is being met 54% of the time for fire responses and 68% of the time for EMS responses.

Radio Communications

STFD is served by the Greene County Communications Center. The communications center serves as the PSAP for all 9-1-1 calls in the township. The communication center utilizes the Tyler Technologies CAD software system. A CAD system provides displays and tools that enable the telecommunications officer to handle calls for service as efficiently as possible. There are four to five telecommunications personnel on duty that handle fire, EMS, and law enforcement dispatching including radio communications and tracking of field units.

STFD and other departments in the county operate on the Greene County 800 MHz trunked simulcast radio and data system. This system is part of MARCS, a state-of the art, multi-channel system with numerous tower sites in the region that are linked with microwave. The system allows for interoperability for all departments in the region.

Facilities

STFD operates from two fire station facilities. Station 71 is located at 33 East Franklin Street, which is located in the downtown area of Bellbrook, and Station 72 located at 4398 Clyo Road. Station numbers are assigned by a countywide station numbering system for communications and identification.

<u>Station 71</u>
This station is located at 33 East Franklin Street (SR 725) and is situated on a square parcel of land. It is located adjacent to and shares a parking lot with the city of Bellbrook administration building. The front of the building faces north and sets 50 ft. from the roadway and features a 48-foot-wide concrete apron with adequate room for emergency units leaving on a response to

view oncoming traffic. There appears to be inadequate room on the parcel to expand the building footprint if needed in the future.

Station 71

The building is normally locked; personnel make entry into the building using a code-entry lock system. There is an emergency phone that allows citizens stopping at the station to report an emergency. Accessibility for handicapped individuals is possible (with assistance) at the front entrance door; however, the building is not designed or equipped with special handicap appliances for door opening, or interior door and counter clearances with full handicap access. The building exterior is monitored by a security camera.

The facility is equipped with a 7-kW natural gas-fueled generator located on the exterior of the building. It is equipped with an automatic transfer switch that enables the generator to start automatically and transfer key building circuits anytime the system senses a loss of normal electric service. The generator undergoes annual maintenance and testing and is programmed to automatically cycle weekly to exercise the unit.

Constructed in 1981, the building was renovated in 2005 to accommodate around-the-clock staffing. It features concrete block construction with brick veneer and has approximately 4,089 sq. ft. of space; a 1,794 sq. ft. apparatus bay and 2,295 sq. ft. for offices and living space. This station houses one engine, one brush truck, and one medic (ambulance) unit. It accommodates three personnel on duty around-the-clock.

There are three back-in apparatus bays. The overhead doors are 14 ft. x 12 ft. and equipped with emergency releases that allow manual operation in the event of mechanical or power failures. There are no emergency indicators installed on bay doors that would warn a door is not fully raised. The bay doors are protected by bollards.

The apparatus bays were clean, well-organized and the floors safety marked. The bay floor has 8-inch trench-style floor drains that empty into the sanitary sewer system. The drains have grease interceptors to capture dripping oil, fuel, and other potential contaminants.

This station appears to have adequate storage space. Designated storage areas accommodate small equipment and appliances, cleaning supplies, tools, and other miscellaneous items. Firefighter turnout gear is stored on mobile racks in the apparatus bay that allow for a quick response by personnel. However, the gear is exposed to ultraviolet light. An "Air-Vac" diesel exhaust system is located at the center of the bay area. This ceiling-mounted system activates upon opening of the bay doors and operates until the fumes have been exhausted.

There is a breathing air compressor located in the apparatus bay area. The air compressor has an outside air intake that is monitored by a carbon monoxide sensor and warning system. The air compressor system also includes a two-cylinder containment fill station and four-cylinder cascade fill assembly.

Along the east wall of the bay area is an "extractor" type washer for cleaning of PPE and a separate residential-grade washer and dryer. The facility does not have a dedicated decontamination area or room.

Controlled substances such as narcotics are securely kept on ambulance units in a narcotic drug safe with key-pad entry. Anytime a drug or controlled substance is used in the field, the drug bag is exchanged at the receiving hospital. Other than those carried on the ambulance, there is no drug or EMS supply storage at this station. Biohazard materials and sharp containers stored on ambulance units are disposed at local hospitals as needed.

The living area of the station has a dayroom, kitchen, restrooms, and storage. The dayroom has ample space and accommodates three recliners and television along with a work station for report writing. There is also ample space in the kitchen and dining area, which can accommodate up to six personnel. The kitchen is equipped with residential-grade appliances; however, there is no automatic suppression system above the electric range.

Dayroom

Dining area

There are two dormitory rooms for on-duty personnel; one room for male personnel and one for female personnel. Each dormitory room is furnished with two partitioned twin-size beds, personal lockers, showers and restrooms. Each shift lieutenant has an office to complete their work and file storage. One of the offices has a bed, which is shared by the three shift officers.

Lieutenant's office

The living quarters and office areas are safeguarded by battery-operated smoke alarms and carbon monoxide alarms are installed in the kitchen area. None of the alarms are monitored off-site.

Station 72

This station is located at 4398 Clyo Road and is a shared facility with the Sugarcreek Township Police Department. Situated on a rectangle-shaped parcel of land, the front of the building faces south and sets 120 ft. from the roadway. It has a 65-foot-wide concrete apron with adequate room for emergency units leaving on a response to view oncoming traffic. There appears to be minimal room on the parcel to expand the building footprint if needed in the future.

The front entrance door to the shared facility is located on the east side of building near the parking area. This door remains unlocked during normal business hours which allows visitors to enter a foyer; from this location visitors can then contact either the fire department or police department by a door bell and intercom system. An emergency phone is located on the building exterior at the main entrance which enables citizens to report an emergency after normal business hours. Accessibility for handicapped individuals is possible (with assistance) at the front door. Fire department personnel make entry into the building using a code-entry lock system.

Station 72

The facility is equipped with a 50-kW propane-fueled generator that is located in a dedicated

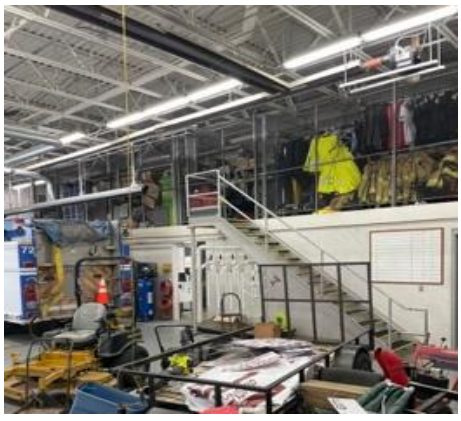
room with appropriate exhaust vents and air flow. It is equipped with an automatic transfer switch that enables the generators to start automatically and transfer key building circuits anytime the system senses a loss of normal electric service. The generator undergoes annual maintenance and is programmed to automatically cycle weekly to exercise the unit.

Constructed in 2004, the building features concrete block construction and has approximately 12,900 sq. ft. of space; a 4,200 sq. ft. apparatus bay and 8,700 sq. ft. for offices and living space. This station houses one ladder truck, one medic unit, one staff vehicle, one reserve engine and one reserve medic unit. Serving as the department's administrative headquarters, the facility accommodates three to four on-duty personnel along with offices for the fire chief, assistant fire chief, and fire marshal.

There are three apparatus bays facing south; two drive-thru bays and one back-in bay. The overhead doors as 14 ft. x 12 ft. and equipped with emergency releases that allow for manual operation in the event of mechanical or power failures. There is a fourth bay on the southwest side of the building that houses the on-duty command car. Bay doors are equipped with electronic door beam sensors that would cause the door to reopen in the event an object is in the door passage when closing. However, there are no emergency indicators installed on bay doors that would warn a door is not fully raised. External bollards are installed to protect the building at bay door openings.

The apparatus bays were clean, well-organized and the floors safety marked. The bay floor has a narrow trench-style floor drain that runs along the center length of the bay for all apparatus locations that empty into the sanitary sewer system. The drains have grease interceptors to capture dripping oil, fuel, and other potential contaminants. There is a "MagneGrip" diesel exhaust source-capture system installed for each bay area.

This station appears to have adequate storage space. A mezzanine is constructed along the western side of the apparatus bay, which contains an area to store spare turnout gear, fire equipment, and archived records. Immediately below this section is a tool room and an area for the station's emergency generator. There also is a dedicated infection control room that includes an extractor for cleaning contaminated items and PPE, a residential-grade washer and dryer, and an eye wash station and general cleaning area. Rack shelving for equipment and a storage room for EMS supplies are located in the command car bay area.



Mezzanine and storage area

A breathing air compressor and associated equipment is located in the southwestern bay area. The air compressor has an outside air intake that is monitored by a carbon monoxide sensor and

warning system. The air compressor system also includes a three-cylinder containment fill station and four-cylinder cascade fill assembly. A medical oxygen four-cylinder cascade system is also located in this area.

Controlled substances such as narcotics are securely kept on ambulance units in a narcotics safe with key-pad entry. Anytime a drug or controlled substance is used in the field, the drug bag is exchanged at the receiving hospital. Biohazard materials and sharp containers stored in the EMS storage room and on ambulance units are disposed at local hospitals as needed.

The living area of the station has a dayroom, kitchen with dining table, dormitory, and restrooms. The dayroom has ample space and accommodates six recliners, television and work station for report writing. There also is ample space in the kitchen and dining area, which can accommodate up to eight personnel. The kitchen is equipped with residential-grade appliances; however, there is no automatic suppression system above the electric range.

There are six dormitory rooms for on-duty personnel. Each is equipped with a twin-sized bed and a desk, which are also used for storage of personal property. There are men's and women's restrooms, each equipped with showers and personal lockers.

Dining area

Training room

This station has a dedicated training room with portable tables and chairs which can accommodate up to 12 personnel in a classroom setting. It is equipped with the necessary audio-visual and electronic equipment to conduct training sessions along with ample storage space.

There also is a dedicated physical fitness room that is shared with the police department. It is furnished with cardio and free weight exercise equipment.

The entire building is protected by an automatic fire sprinkler system. In addition, the living quarters and office areas have electric (hard-wired) single-station smoke alarms. The sprinkler system and smoke alarms are monitored by a third-party monitoring company, which promptly informs the communications center upon activation.

Apparatus and Equipment

Overall, the department's fleet and equipment appear to be in good condition, well-maintained, and appropriate to meet the department's needs. The corresponding maintenance records and equipment inventory were reviewed by the assessment team during the site visit and found them to be in order. The fleet consists of two engines (one as a reserve), one ladder, three medic units (one as a reserve), one brush truck, and four staff vehicles. All fire apparatus are equipped with the necessary hose and loose equipment as outlined in NFPA 1901. All fire apparatus are also equipped with MDTs. The following is a brief description of each apparatus and related equipment.

Ladder 72 is a 2022 Sutphen quint with a 75 ft. mid-mount aerial ladder, 1,500 GPM pump and carries 500 gallons of water. This apparatus carries rescue tools and equipment for auto extrication and other rescue situations. This vehicle is housed at Station 72, has 11,877 miles and is in excellent condition.

Engine 72 is a 2001 KME pumper-tanker with a 1,250 GPM pump and carries 1,250 gallons of water. This unit is equipped with an on-board Class A and B foam system. This apparatus serves as the department's reserve engine and is housed at Station 72. It has 81,932 miles and is in fair condition.

Engine 71 is a 2017 Sutphen pumper with a 1,500 GPM pump and carries 1,000 gallons of water. This apparatus is equipped with an on-board Class A and B foam system. This vehicle has 40,092 miles and is in excellent condition. It is housed at Station 71.

Brush 71 is a 2012 Ford Super Duty 4-wheel drive brush truck. It has a 95 GPM pump, carries 250 gallons of water and has Class A foam capacity. This apparatus has a light rescue body that carries ice, rope, and water rescue equipment. This vehicle is housed at Station 71, has 44,865 miles and is in good condition.

Medic 71 is a 2019 Horton Type I modular ambulance on a Ford F-550 chassis. It is configured and equipped to deliver ALS level care and transport service, including a LIFEPAK 15 heart monitor/defibrillator and a patient power-load system. This unit serves as a primary medic unit and is housed at Station 71. It has 22,688 miles and is in excellent condition.

Medic 72 is a 2017 Horton Type I modular ambulance on a Ford F-550 chassis. It is configured and equipped to deliver ALS level care and transport service, including a LIFEPAK 15 heart monitor/defibrillator and a patient power-load system. This unit serves as a primary medic unit and is housed at Station 72. It has 59,219 miles and is in excellent condition.

Medic 73 is a 2009 McCoy-Miller Type III modular ambulance on a Ford E-450 chassis. It is configured and equipped to deliver ALS level care and transport service including a LIFEPAK 15 heart monitor/defibrillator and a patient power-load system. This unit serves as a reserve medic and is housed at Station 72. The vehicle has 59,380 miles and is in poor condition. At the time of the site visit the vehicle was out of service for repairs.

Battalion 70 is a 2017 Chevrolet Tahoe SUV. It is assigned to the on-duty shift commander at Station 72 and is used as a first response unit on all calls. In addition to incident management supplies and equipment this unit carries an SCBA, thermal imaging camera, EMS supplies and an AED. The vehicle has 73,145 miles and is in good condition.

Marshal 70 is a 2017 Chevrolet Tahoe SUV. It is assigned to the fire marshal and used as a staff vehicle. This vehicle carries fire inspection equipment and supplies as well as basic EMS equipment. It has 109,387 miles, is in good condition and is housed at Station 72.

AC 72 is a 2021 Ford Explorer SUV. It is assigned to the assistant fire chief and is used as a staff and command vehicle. In addition to incident management equipment and supplies this unit carries basic EMS equipment. This vehicle has 30,578 miles and is in excellent condition.

Chief 70 is a 2023 Ford Explorer SUV. It is assigned to the fire chief and used as a staff and command vehicle. In addition to incident management equipment and supplies, this unit carries basic EMS equipment. This vehicle has 23,577 miles and is in excellent condition.

STFD has a 15-year capital replacement plan that is updated regularly to adjust for inflation and operational needs. This capital plan includes apparatus and other fleet vehicles. The department

rotates ambulance units from front-line service to reserve to extend the service life of the units, which results in a planned 15-year replacement cycle. A replacement ambulance (Medic 72) is currently on order and tentatively scheduled for delivery in December of 2025. A replacement Engine 71 is also on order and tentatively scheduled for delivery in March of 2026. When this apparatus is received and placed in service the existing Engine 71 will be moved to reserve status. Both the medic and engine are being acquired with lease-purchase agreements. This will result in annual debt service payments of $37,100 for the medic and $81,472 for the engine. Both lease-purchase agreements are for a 10-year duration. A new ATV with an EMS skid load is also scheduled for purchase in 2025 at an estimated cost of $55,000. A shortened five-year version of the department's capital replacement plan is displayed in Table 15.

Unit	2026	2027	2028	2029	2030
Battalion 70		$70,000			
Marshal 70		$70,000			
Medic 72				$300,000	
Brush 71					TBD

Table 15: STFD's five-year apparatus replacement schedule

Equipment Maintenance and Self-Contained Breathing Apparatus

As previously described on page 35, fire departments utilize a variety of specialized equipment to effectively deliver fire protection services and provide a level of safety for the individual firefighter. Manufacturers of this specialized equipment develop recommendations for the testing and maintenance of said equipment, which almost universally includes the recommendations developed by the NFPA. The state of Ohio also recognizes the importance of maintaining this special equipment and other safety requirements with the promulgation of OAC Chapter 4123:1-21, which addresses *Firefighter Occupational Safety and Health.* These recommended criteria and adopted rules provide the basis for the assessment team's inspection and review of the department's equipment, maintenance practices, and record keeping.

STFD uses Scott 45-minute, 4,500 psi SCBA units (model 4500 X3 Pro). The inventory of 20 SCBA are five-years old and are in very good condition. There is an SCBA unit for each riding position in all apparatus and the on-duty command car. There are spare cylinders for each of the units, which are carried on the apparatus. The department also has three RIT kits with 60-minute cylinders. The current respiratory protection program includes annual facepiece qualitative fit testing. Annual medical clearance for personnel to wear and use a respirator in a hazardous environment is not currently performed. SCBA annual flow testing is conducted by MES Life Safety Service of Warren, OH. Respiratory protection program records were reviewed and found to be up-to-date and well-maintained.

The department has a two Bauer 5,000-psi breathing air compressor and cascade air-filling systems, one at each station. The department contracts with Breathing Air Systems of

Reynoldsburg, OH to inspect and maintain the compressors on a regular basis, which includes air quality testing. Those records are appropriately recorded and maintained.

Annual pump testing of department apparatus is conducted by Fire Apparatus Service and Repair of Xenia, OH in accordance with NFPA standards. Testing records from the past three years were reviewed and found to be in good order. Every four years the department should consider expanding pump testing to include non-destructive apparatus frame inspection and analysis. This testing looks for early signs of cracks, delamination, and corrosion of frame rails, supports, and tire rims. This helps assure safe and proper operation of apparatus during an emergency response.

Ground ladders and the aerial are inspected and tested annually in accordance with NFPA standards. Test records from the past three years were reviewed and found to be appropriately recorded and maintained. Testing was previously performed by Ohio CAT of Broadview Heights, OH; testing in 2024 was performed by Consolidated Fleet Services of Searcy, AK.

Hose testing is conducted annually by STFD personnel in accordance with NFPA standards. Hose testing records were reviewed and found to be in order. An inspection of the hose found the department's inventory to be in overall good condition.

Personal Protective Equipment

The department provides structural PPE to all personnel. Structural PPE is often referred to as turnout gear. The turnout gear is Lion Apparel with nomex outer shell and manufactured according to NFPA standards. The department purchases new turnout gear annually to establish a regular replacement cycle. Each member receives a new set of gear every 10 years. The turnout gear is cleaned in-house using the department's extractors, which are located at Station 71 and 72. Each set of turnout gear undergoes an annual inspection plus additional inspections based on use.

Administrative Policies and Standard Operating Procedures

The department has a comprehensive set of standard operating procedures (SOPs) that are maintained electronically. The SOPs include written procedures for incident management, mutual-aid response, fireground operations, emergency vehicle operations, active shooter response, etc. The department follows countywide procedures for accountability, Mayday, evacuation, and RIT. Many of the procedures were dated from 2013 and should be reviewed to assure the procedure aligns with current department practices.

Interspersed in the SOPs are numerous administrative policies and daily operational areas including HIPPA, payroll, transitional duty, etc. Township administrative policies include social media use, ADA, FMLA, insurance plans, etc.

Creation of a Joint Fire and EMS District

Creation of a joint fire and EMS district is governed by the ORC. Specifically, ORC §505.375 allows townships and municipal corporations to create a joint district to deliver fire and ambulance services. There are several other options available, including the creation of a joint fire district (ORC §505.371) or joint ambulance district (ORC §505.71). If a joint fire district is created, ambulance operations are permitted, so either ORC §505.375 or ORC §505.371 is applicable in this study. Two or more existing fire or ambulance districts can also create a new joint district.

The benefits of forming any joint district include: 1) creating an equal tax base among all residents within the district area*; 2) participating entities having equal representation in management oversight; 3) improved service levels with increased resources; and 4) in some cases, cost savings with economy of scale and reduction in duplication of resources. *However, in almost all cases, if a joint fire and EMS district is created to address staffing issues to improve response performance and reliability, cost savings is seldom realized; in fact, the operating cost of the new district may be significantly higher than expected.*

> *The common method of funding a joint district is a property tax against real estate for all properties within the district. If approved by the voters, all property owners pay the same millage rate. If other funding mechanisms are chosen, an equal tax base may not apply.

Disadvantages of creating a joint fire and EMS district include: 1) loss of identity by department personnel and the community; 2) loss of fiscal and operational control by elected bodies; and 3) merging multiple organizations with differing cultures, equipment, and operational procedures can be difficult.

Both BFD and STFD are experiencing staffing issues in recruiting and retaining part-time personnel. This situation is similar to those faced by other agencies around the state. The number of applicants for full-time positions has also decreased over the past decade. Cities and townships now aggressively recruit to fill full-time positions, which negatively impacts the number of part-time personnel which had been traditionally available for hire. BFD is authorized for 12 part-time personnel and currently have six on the roster. STFD is authorized 33 part-time personnel and currently have 30 on their roster.

In an effort to determine if the concept of a joint district is feasible, a joint fire and EMS district will be created conceptually to allow department members and elected officials to examine organizational structure, general operations, and the estimated cost of providing service delivery with this type of organization. For this study, the proposed joint fire and EMS district service area includes the city of Bellbrook and Sugarcreek Township.

The fire and EMS district, if formed, becomes an agency that will be serving a larger entity than the two individual departments. The response area will encompass 29.74 square miles with a

population estimated at 16,851. The fire and EMS district will have a combined 67 personnel and respond to approximately 2,271 calls for service annually. Table 16 shows the current demographics and resources of each entity and combined as one agency, including operating budgets, apparatus, and equipment.

	Bellbrook	Sugarcreek	Total
Population	7,317	9,534	16,851
Area in sq. mi.	3.14	34.8	37.94
ISO Rating	02	03/3Y	TBD
Operating Budget	$1,349,169	$3,155,596	$4,504,765
Personnel	18	49	67
Total Calls	745	1,526	2,271
Engines/Rescue-Eng.	2	2	4
Ladders	1	1	2
Tankers	0	0	0
Medics	3	3	6
Brush/Mini-Pumper	0	1	1
Utility Vehicles	1	0	1
Staff Vehicles	2	4	6
Other Vehicles	1	1	2

Table 16: proposed fire and EMS district facts

The assessment team has identified the joint fire and EMS district can be served with two fire stations. Based on current locations and space considerations, it was determined that Station 71 and Station 72, both STFD facilities, would be best suited to serve the district. Station 22 is limited on space and is not strategically located to best serve the joint fire and EMS district response area. Station 21 also has limited space and is not designed for in-station staffing. Depending on the desires of the joint fire district board, Station 21 or 22 may be needed to store reserve apparatus and some extra equipment, at least initially.

A map of the joint fire and EMS district, which includes the location of all existing fire stations, is displayed in Figure 10. The joint fire and EMS district boundary include two areas (shown as cross-hatching) that are within both the city of Centerville and Sugarcreek Township.

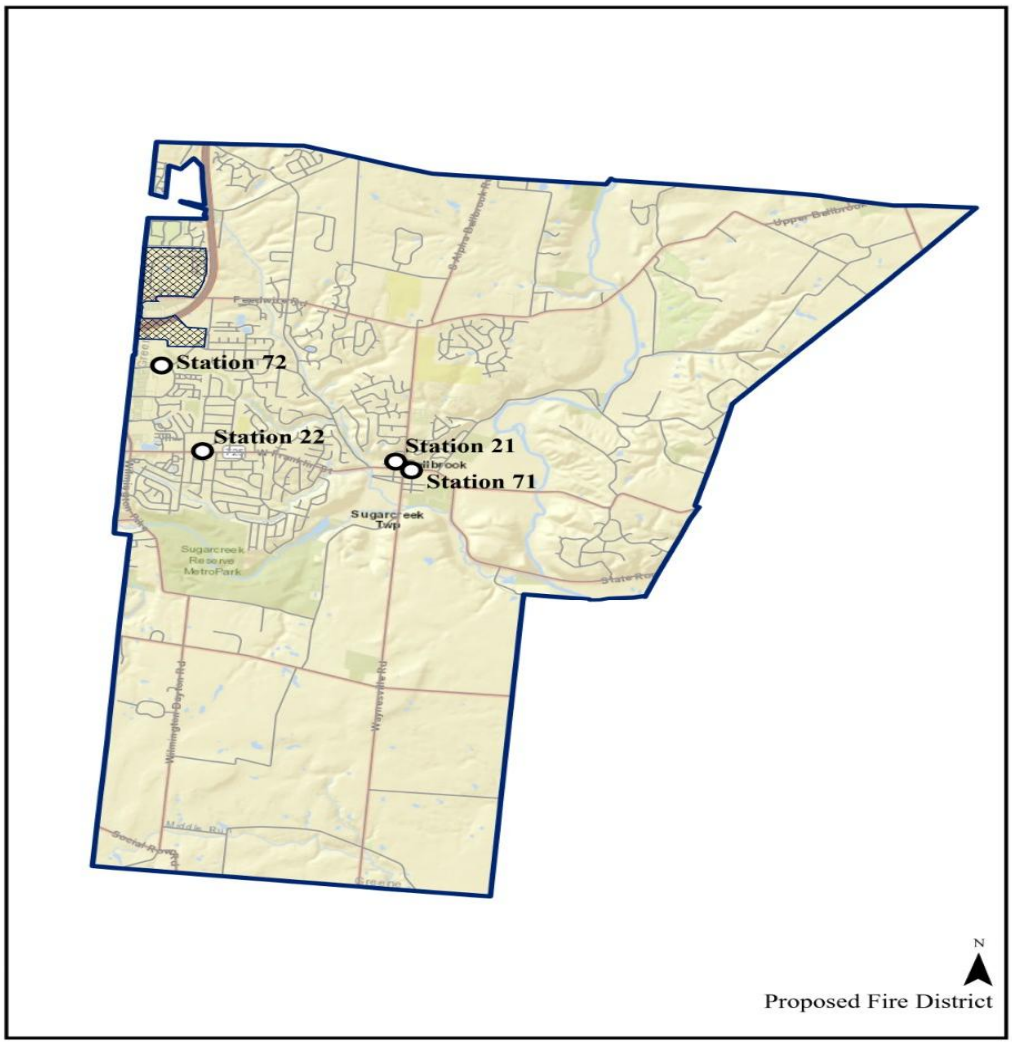


Figure 10: Map of conceptual fire and EMS district

Assets

One of the first steps in making a fire and EMS district functional is to configure apparatus and equipment. The governmental entities hold title to all of the apparatus and equipment as well as the fire station facilities and land. Normally, all apparatus, equipment, and supplies currently owned and used by the two departments would be titled over to the joint fire and EMS district, including any apparatus loan or lease obligations. However, Bellbrook and Sugarcreek Township could opt to lease the fire and EMS apparatus and equipment to the joint fire and EMS district. This could be at no cost or a nominal lease annually for each piece of equipment. If the apparatus and equipment are transferred to the district either at start up or in the future, the current estimated value of the assets should be determined and recorded.

The fire station facilities could be handled in one of two ways. The buildings and land can be transferred to the joint fire and EMS district, or the fire and EMS district could lease the facilities

from the township and city (if one of the city's stations is needed to store reserve equipment). A lease arrangement may be the better option, at least initially, especially since Sugarcreek Township Station 72 is also used by the Sugarcreek Township Police Department. A nominal lease payment for use of the facility could be developed between the parties. A nominal lease payment was added to the projected operating budget. The lease and loan obligations would need to be addressed during the formation of the district.

For any apparatus, equipment, or facility where the ownership is transferred to the fire and EMS district, an appraisal of the current fair market value is recommended. This provides the basis of the district's beginning assets. In future years, this information will be helpful if one of the entities withdraws from the district or other neighboring entities join the district.

Capital Needs

The joint fire and EMS district, if formed, will face capital replacement and improvement needs in the future. If the joint fire and EMS district is not formed, the departments and communities will have similar but not identical future capital needs.

STFD currently has two apparatus on order. An ambulance is scheduled for delivery in December of 2025 and a replacement engine is tentatively scheduled for delivery in March of 2026. Both of these units are being acquired with lease-purchase agreements. This will result in annual debt service payments, both for 10-year periods. In 2024, BFD replaced the chief's command car, which was acquired with a lease agreement. This also resulted in annual lease payments until 2027. These debt service payments have been included in the proposed joint fire and EMS district's estimated operating budget.

Currently, BFD plans to replace a medic unit (Medic 23) and the aerial ladder (Ladder 22) in the next five years. However, limited funding has prevented the city from moving forward with developing specifications and approving the purchases. STFD has also identified the need to replace two additional medic units (Medic 71 and 72) along with two staff vehicles over the next five years. However, once the district is formed and an operations and staffing plan is developed and implemented, a revised 15- to 20-year apparatus replacement plan should be developed by the management team to assist long-term financial planning for the district.

For example, BFD's aerial ladder truck (Ladder 22) is 30-years old. If the district is formed, the replacement of this apparatus may not be needed, at least initially. The risk assessment conducted as part of this report did not identify the number of risk properties that would warrant more than one aerial ladder truck for the service area. Additional ladder trucks, as currently identified on the commercial fire alarm response cards, are available from mutual-aid companies. By maintaining one aerial ladder truck, the district would save significant capital funds for ladder truck replacement and also reduce maintenance and operating expenses.

Another element in plan development is the number of ambulances that are needed in the fleet to meet service demands. Currently, there are six ambulances between the two departments. This can most likely be reduced to four. For example, there would be two front-line ambulances at each station for EMS incidents and one back-up ambulance, which can be used for response to multi-patient incidents, multiple calls, or when one ambulance is out of service for maintenance, etc. One ambulance could also be maintained as a reserve, used as needed or special events. This will reduce fleet size, reduce on-going maintenance and capital replacement costs, and reduce the number of heart monitors/defibrillators, etc.

The assessment team also has determined the district could be served adequately with three engines instead of the current four; one front-line engine at each station and one maintained as a reserve. This will reduce fleet size, reduce on-going maintenance and capital replacement costs. Staff and utility vehicles also need to be examined by the joint fire and EMS district board and administration to determine the number of vehicles needed and maintained.

> In developing the estimated operational budgets, the assessment team used three engines, one aerial ladder truck, four ambulances, one brush truck, one utility vehicle and four staff vehicles. This reduction in fleet (through apparatus retirement) will reduce capital outlay for apparatus replacement and reduce preventive maintenance and unplanned repair costs.

Long-term, the new joint fire and EMS district may also need to plan for facility upgrade, renovation, and possible replacement. The best approach is to employ a consulting firm that has the software programming to integrate with GIS technology to determine the number of stations needed and the best location for maximum efficiency. This study should also include a more in-depth analysis of the current facilities to determine which can continue to be utilized. The number of and location of fire stations is impacted on the desired response performance goals of the citizens, elected officials, and district board members.

This assessment of the fire and EMS district's capital needs reinforces the need for a funded capital account. The cost of replacing apparatus and large equipment, facility renovation and replacement, etc., all require significant funding. However, not funding a capital account would result in a financial burden for the fire and EMS district in the near future. It is better to acquire the necessary funds up front instead of continuing to ask the taxpayer for money later. Otherwise, long-term planning becomes increasingly more difficult.

> A funded capital account is included in the estimated operational budget for the various scenarios. The capital amount was computed between 5% and 7% of the total budget amount, which is a common financial planning assumption.

Staffing

The staffing needs of the joint fire and EMS district are important, as this will establish the staffing model desired to meet response performance goals and funding necessary to support the staffing model. The staffing model must meet the response performance expectations of the communities for the joint district concept to be successful. The example scenarios were developed to position the district to respond to overlapping EMS incidents while having sufficient personnel to respond to a fire incident with at least one engine company.

The number of personnel and deploying those personnel from two stations instead of three allows the staffing of fire apparatus with three personnel instead of two, if all personnel are on station. This greatly improves efficiency and safety for both the firefighters and citizens they serve. Each scenario also includes appropriate administrative and management oversight for organizational efficiency. The staffing scenarios were developed by the assessment team with input from both Chief Bizzarro and Chief Buffenbarger.

Staffing Scenario #1

Staffing Scenario #1 serves as the basis for evaluation and analysis; two additional scenarios with various staffing configurations will be developed, using the base scenario for comparison. This provides the entities sufficient information to develop their own staffing scenarios if they feel other staffing models than those offered as examples would work better.

This scenario provides four personnel on duty each day (24 hours) at both Station 71 and 72 plus a shift commander (which will be referred to as a battalion chief), for a total of nine personnel on duty. With four personnel at each station plus a shift commander, this allows the district to maintain a seven-person minimum staffing level with two personnel off on scheduled time off or sick leave. Seven personnel on duty maintains the current minimum staffing levels if BFD and STFD are looked at collectively (two-person minimum at BFD and five-person minimum at STFD). BFD currently meets the EMS total response time benchmark (seven-minutes) 82% of the time and fire response time benchmark (seven-minutes, six seconds) 87% of the time, which is excellent. This configuration will maintain this overall response performance or in some cases, depending on the location of the incident, improve the response performance. STFD currently meets the EMS total response time benchmark 48% of the time and 42% of the time for fire responses. This configuration will maintain STFD's total response time performance. Note: whenever the term firefighter/paramedic is used, it is understood that positions could also be filled in some instances with those who have firefighter/EMT certification.

Station 71

One Lieutenant (full-time)
One Firefighter/Paramedic (full-time)
Two Firefighter/Paramedics (part-time)

Station 72
One Lieutenant (full-time)
Two Firefighter/Paramedics (full-time)
One Firefighter/Paramedic (part-time)
One Battalion Chief (full-time)

This scenario includes a full-time fire chief, full-time assistant chief, full-time fire marshal, and a part-time administrative assistant (20 hours weekly). Also included is a fiscal officer position, as required by law. The fiscal officer's responsibilities include payroll, accounts payable, and other financial and personnel related functions. A sample organizational structure of the proposed joint fire and EMS district is depicted in Figure 11.

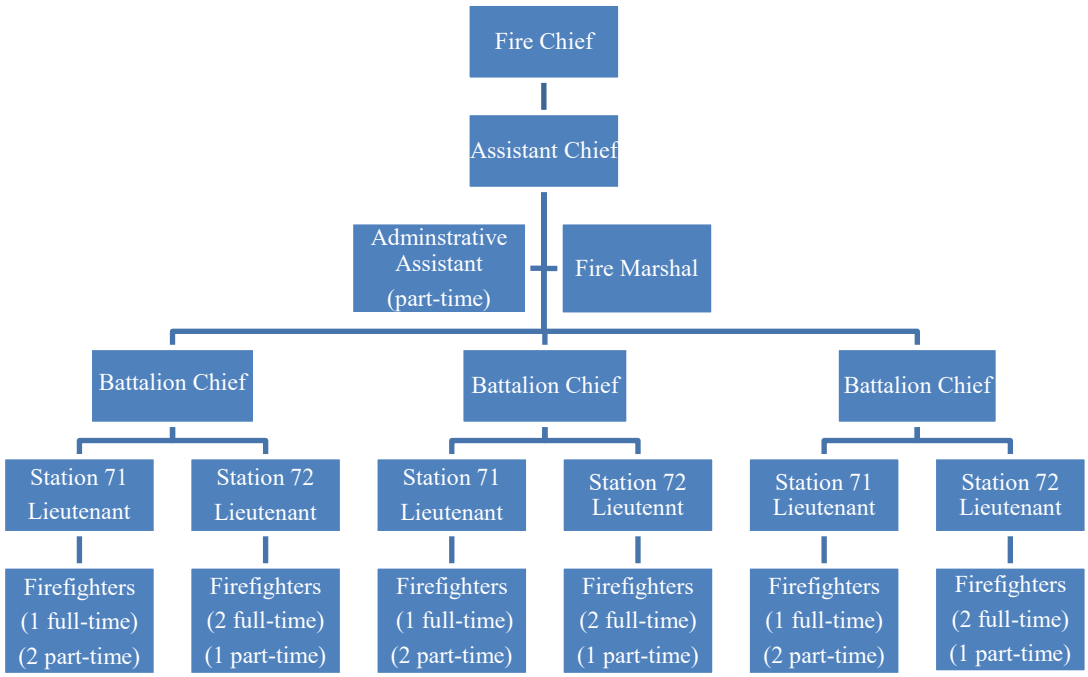


Figure 11: Scenario #1 organizational chart

Staffing Scenario #1 Estimated Budget

A projected budget was developed with information from the current operating budgets and expenditures of both agencies. Grant funds, which are typically competitive, are not included in the preparation of the budgets. Grants are typically competitive and reliance on grant funds could create financial difficulty for a new organization.

The following salary and wage assumptions were used in developing the projected budget:

- Fire Chief $120,000
- Assistant Chief $112,000
- Fire Marshal $65,000

- Battalion Chief $97,000
- Lieutenant $90,000
- Firefighter/paramedic (full-time) $76,000
- Firefighter/paramedic (part-time) $22.00 per hour
- Health insurance provided to full-time employees (based on $20,000 each)

Note: Salaries and pay scales used were a compilation of those currently used by the two departments and data from an area salary survey completed by Chief Bizzarro in late 2024. It is understood that a dual-certified part-time firefighter with paramedic certification should be paid at a higher rate than a dual-certified part-time firefighter with EMT certification. However, since so many staffing combinations exist, a standard $22.00 per hour rate for part-time personnel was used for budget calculations. Table 17 provides explanatory information of the accounts used in the development of the estimated budgets of all of the staffing scenarios. Table 18 on page 78 shows the projected annual operating budget for Staffing Scenario #1.

Explanation of Non-Personnel Budget Accounts	
Insurance	Building, fleet, etc.
Utilities	Water/sewer; gas/electric; trash; telephones, which includes air cards for MDTs
Debt Service	Annual payments on apparatus purchase, cardiac monitors
Lease of Facilities	Self-explanatory
Building Maintenance	Repairs and maintenance of overhead doors, HVAC, building systems, roof, etc.
Fuel	Self-explanatory
Vehicle Maintenance	Scheduled preventative maintenance and repairs
Contractual Services-Testing	Dispatching services, pump, ladder, and SCBA testing, cardiac monitor, air compressor and other preventative maintenance, computer repair and maintenance, software licensing and updates, medical exams, etc.
Equipment Maintenance	Repairs of equipment not covered by contract
Firefighter Gear	Self-explanatory
EMS/Fire Equipment	Purchase and replacement of non-capital equipment
Training	Initial training courses, transition courses, continuing education classes, advanced training classes
Dues & Subscriptions	Membership in various associations, Lexipol fees
Uniforms	Self-explanatory
Miscellaneous	Purchases for unbudgeted items
Operating Supplies	Expendable supplies, cleaning supplies, etc.
Office Expense	Office supplies, copier contracts
EMS Supplies	Drugs and supplies for EMS service delivery
Miscellaneous	Self-explanatory

Table 17: Budget account explanations

Fire/EMS District Scenario #1 Estimated Budget	
Personnel	
Wages	$2,496,070
Taxes: FICA & Medicare	$47,765
Pension	$505,282
Insurance	$420,000
Workers' Comp	$37,441
Overtime	$100,000
Subtotal	$3,606,559
Contractual & Materials	
Insurance: Fleet, building, liability	$23,000
Utilities	$42,000
Debt Service	$309,144
Lease of Facilities	$3,600
Building Maintenance	$10,000
Fuel	$30,000
Vehicle Maintenance	$80,000
Contractual; maintenance & testing, dispatching, IT maintenance	$356,000
Equipment Maintenance	$40,000
Firefighter Gear	$55,000
EMS/Fire Equipment	$25,000
Training, Professional Development	$30,000
Dues & Subscriptions	$13,500
Uniforms	$22,000
Miscellaneous Expense	$28,000
Subtotal	$1,057,244
Supplies	
Operating & Miscellaneous Supplies	$25,000
Office/Administrative Expense	$8,000
EMS Supplies	$16,000
Subtotal	$49,000
Capital	
Capital Equipment	$300,000
Subtotal	$300,000
District Fiscal Office	
Salary	$80,000
Pension, Insurance, Medicare, Workers Comp	$33,560
Bonding/Auditing	$8,000
Subtotal	$121,560
Total Budget	**$5,134,363**

Table 18: Scenario #1 estimated budget

A revenue and expense worksheet are shown in Table 20. This worksheet assists in determining the revenue necessary to support the $5.1 million operational budget developed in Table 18. The current valuation of each entity is shown in Table 19.[4]

	Combined Valuation	Revenue from 1.0 mill
Bellbrook	$279,353,000	$279,353
Sugarcreek Township	$643,615,090	$643,615
Total	$922,968,000	$922,968

Table 19: Current tax evaluations

	1.0 mill	5.75 mills	5.85 mills	6.00 mills	6.15 Mills
Bellbrook	$279,353	$1,606,280	$1,634,215	$1,676,118	$1,718,021
Sugarcreek Township	$643,615	$3,700,786	$3,765,148	$3,861,690	$3,958,232
Total	$922,968	$5,307,066	$5,399,393	$5,537,808	$5,676,253
Property Tax	$922,968	$5,307,066	$5,399,393	$5,537,808	$5,676,253
Less 6% fee*	$55,378	$318,424	$323,962	$332,268	$340,575
Net Collection	$876,820	$4,988,642	$5,075,401	$5,205,540	$5,335,678
EMS Billing	$453,000	$453,000	$453,000	$453,000	$453,000
Total Revenue	$1,329,820	$5,441,642	$5,528,401	$5,658,540	$5,788,678
Est. Expenses	NA	$5,134,363	$5,134,363	$5,134,363	$5,134,363
Over/Under	NA	$307,279	$304,038	$524,177	$654,315

**Tax collection; assessment fee and delinquencies*

Table 20: Scenario #1 revenue and expense worksheet

The revenue and expense worksheet indicates that a 5.75-mill, 5.85-mill, 6.00-mill, or 6.15-mill levy along with EMS billing revenue will provide sufficient funds to operate the fire and EMS district. Funds collected in excess of expenses (as noted in the Over/Under row) provide carryover to the next budget cycle. Carryover funds are needed to provide wage continuation for the first quarter of the next fiscal year and cover unanticipated expenses. However, inflation and other market factors, which may not be predictable, can increase operating expenses and can significantly impact the fire and EMS district's finances.

The three-year operating budget example in Table 21 shows how inflation can affect the district's finances. This can assist in determining revenue goals. Personnel costs are computed with a 4% annual increase and supplies and materials are computed assuming 3% increases. The average wage increase for firefighter labor contracts statewide were 4.73% in 2024, 3.76% in 2025 and 3.64% in 2026.[5] The current Consumer Price Index is 2.9% (as of September 11, 2025). The average Consumer Price Index over the past 20 years is 2.55%.[6]

[4] Greene County Auditor's Office
[5] Ohio State Labor Relations Board 2024 Wage Settlement Report
[6] U.S Bureau of Labor Statistics

	Year 1	Year 2	Year 3
Personnel	$3,606,559	$3,750,821	$3,900,854
Contractual & Materials	$1,057,244	$1,088,961	$1,121,630
Supplies	$49,000	$50,470	$51,984
Capital	$300,000	$300,000	$300,00
Fiscal Office	$121,560	$121,560	$121,560
Total	$5,134,363	$5,311,813	$5,496,028

Table 21: Scenario #1 three-year operating budget with inflation

It is understood that not all supplies and contractual needs will increase by 3% each and every year. Likewise, total personnel costs may not increase by 4% each and every year. However, it is important to understand the impact that inflation can have on operational budgets funded by fixed revenue streams.

Using information from the estimated three-year operating budget Table 22 shows the effect of increased operating costs on carryover funds and the accumulation of reserves. Accumulation of reserves is part of good financing practices and can assist in planning future financial needs.

	Year 1	Year 2	Year 3
5.75 mills			
Revenue	$5,441,642	$5,441,642	$5,441,642
Expense	$5,134,363	$5,311,813	$5,496,028
Net	$307,279	$129,829	($54,386)
Reserve	$307,279	$437,108	$382,722
5.85 mills			
Revenue	$5,528,401	$5,528,401	$5,528,401
Expense	$5,134,363	$5,311,813	$5,496,028
Net	$394,038	$216,588	$32,373
Reserve	$394,038	$610,626	$642,999
6.00 mills			
Revenue	$5,658,540	$5,658,540	$5,658,540
Expense	$5,134,363	$5,311,813	$5,496,028
Net	$524,177	$346,727	$162,512
Reserve	$524,177	$870,904	$1,033,416
6.15 mills			
Revenue	$5,788,678	$5,788,678	$5,788,678
Expense	$5,134,363	$5,311,813	$5,496,028
Net	$654,315	$476,865	$292,650
Reserve	$654,315	$1,131,180	$1,423,830

*Accumulated reserves do not include investment income

Table 22: Scenario #1 accumulation of reserves

Table 22 shows reserves of $382,722 after three years with a 5.75-mill levy, with the third year showing a negative balance of expenses versus revenue. Higher millage rates result in higher amounts in carryover funds: a 5.85-mill levy will have a projected carryover after three years of $564,999, a 6.00-mill levy will have a projected carryover of $1,033,416 and a 6.15-mill levy would have a carryover of $1,423,830. Carryover amounts coupled with budgeted capital funds allow the joint fire and EMS district board to plan for and purchase capital replacement items without going back to the voters for additional funding as well as meeting operational costs affected by normal inflation and increased personnel costs. As noted previously, a 15- to 20-year replacement plan will need to be developed by the new management team to assist long-term financial planning for the district.

Staffing Scenario #2

To improve staffing levels and response performance, a staffing option for the joint fire and EMS district is to increase the number of on-duty personnel. This staffing scenario is based on five personnel each at Stations 71 and 72 plus a shift battalion chief, for a total of 11 response personnel daily. This scenario would allow a minimum of nine personnel on duty with two personnel off duty on approved leave. Each station would have one full-time lieutenant two full-time and two part-time firefighter/paramedics. Note: some of the positions could be filled by a firefighter/EMT, as long as at least one position on the ambulance unit is a paramedic.

Station 71

1 Lieutenant (full-time)
2 Firefighter/Paramedics (full-time)
2 Firefighter/Paramedics (part-time)

Station 72

1 Lieutenant (full-time)
2 Firefighter/Paramedics (full-time)
2 Firefighter/Paramedics (part-time)
1 Battalion Chief (full-time)

In addition to the response personnel described, this scenario includes a full-time fire chief, full-time assistant chief, full-time fire marshal, and part-time administrative assistant. Also included is a fiscal officer position, as required by law.

This staffing scenario requires 21 personnel to fill the full-time shift positions around-the clock: 12 firefighters, six lieutenants (one for each station for each of the three shifts) and three battalion chiefs (one for each of the three shifts). Each shift would also require four part-time positions daily, two at each station. Together, BFD and STFD's rostered part-time personnel vary from 35 to 45, which should provide sufficient personnel to fill the daily positions.

With this staffing scenario, three or four personnel could respond on the initial responding

engine or ladder company as well as the second-due company along with personnel on medic units. If a medic unit (or both front-line medic units) are committed on calls, personnel would be available to respond with a medic to a third call or respond with a fire apparatus to a fire call. For motor vehicle accidents, an engine or ladder company would respond with the medic unit. Note: there are various response scenarios that can be developed; these are just several examples.

Having increased staffing levels on the initial responding engine greatly expands the fire attack options for personnel and enables the company to meet "2-in, 2-out" requirements. A second arriving company with three or four personnel greatly increases the capability of the department to conduct search and rescue tasks as may be needed. A timely response to a structure fire is very important and allows the department to accomplish a quick knockdown on many fires, preventing fire escalation, or keeping the fire in check until AMR units arrive. A sample organizational structure of the proposed joint fire and EMS district with Staffing Scenario #2 is depicted in Figure 12.

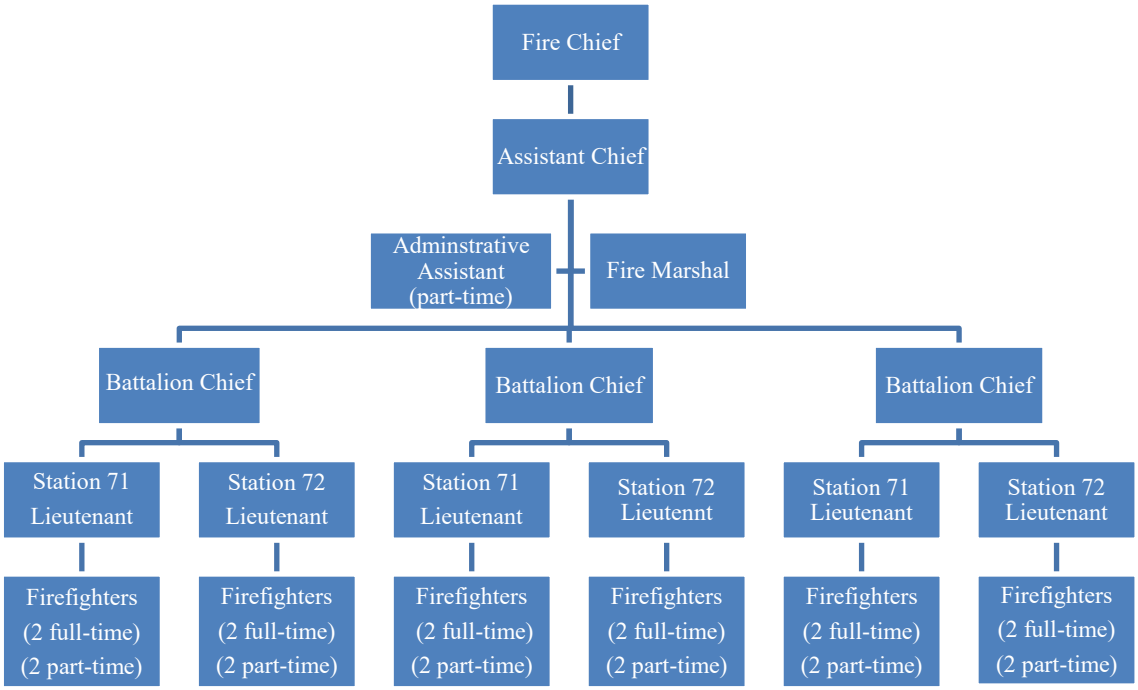


Figure 12: Scenario #2 organizational chart

Staffing Scenario #2 Estimated Budget

This estimated budget will notably have higher personnel costs. Other accounts were also increased to reflect the additional full-time employees, or in some cases, accounts were estimated at a lesser amount. The salary and wage assumptions used for Staffing Scenario #1 and listed on pages 76-77 were used in developing this projected budget. Table 23 shows the projected annual operating budget for Staffing Scenario #2 for the fire and EMS district.

Fire/EMS District Scenario #2 Estimated Budget	
Personnel	
Wages	$2,928,190
Taxes: FICA & Medicare	$91,703
Pension	$538,738
Workers Comp	$43,639
Insurance	$480,000
Overtime	$100,000
Subtotal	$4,182,271
Contractual & Materials	
Insurance: Fleet, building, liability	$23,000
Utilities	$42,000
Debt Service	$309,144
Lease of Facilities	$3,600
Building Maintenance	$10,000
Fuel	$30,000
Vehicle Maintenance	$80,000
Contractual; maintenance & testing	$356,000
Equipment Maintenance	$40,000
Firefighter Gear	$55,000
EMS/Fire Equipment	$25,000
Training, Professional Development	$30,000
Dues & Subscriptions	$13,500
Uniforms	$22,000
Miscellaneous Expense	$18,000
Subtotal	$1,057,244
Supplies	
Operating & Miscellaneous Supplies	$25,000
Office/Administrative Expense	$8,000
EMS Supplies	$16,000
Subtotal	$49,000
Capital	
Capital Equipment	$300,000
Subtotal	$300,000
District Fiscal Office	
Salary	$80,000
Pension, Insurance, Medicare, Workers' Comp	$33,560
Bonding/Auditing	$8,000
Subtotal	$121,560
Total Budget	**$5,710,075**

Table 23: Scenario #2 estimated budget

A revenue and expense worksheet are shown in Table 24. This worksheet assists in determining the revenue necessary to support the $5.7 million budget developed in Table 23.

	1.0-mill	6.50-mills	6.65-mills	6.75-mills	6.85-mills
Bellbrook	$279,353	$1,815,795	$1,857,697	$1,885,633	$1,913,568
Sugarcreek Township	$643,615	$4,183,498	$4,280,040	$4,344,401	$4,408,763
Total	$922,968	$5,999,292	$6,137,737	$6,230,034	$6,322,331
Property Tax	$922,968	$5,999,292	$6,137,737	$6,230,034	$6,322,331
Less 6% fee*	$55,378	$359,958	$368,264	$373,802	$379,340
Net Collection	$876,820	$5,639,334	$5,769,473	$5,856,232	$5,942,991
EMS Billing	$453,000	$453,000	$453,000	$453,000	$453,000
Total Revenue	$1,329,820	$6,092,334	$6,222,473	$6,309,232	$6,395,991
Est. Expenses	NA	$5,710,075	$5,710,075	$5,710,075	$5,710,075
Over/Under	NA	$382,259	$512,398	$599,157	$685,916

*Tax collection; assessment fee and delinquencies

Table 24: Scenario #2 revenue and expense worksheet

The revenue and expense worksheet indicates that a 6.50-mill, 6.65-mill, 6.75-mill or 6.85-mill levy along with EMS billing revenue will provide sufficient funds to operate the fire and EMS district. Funds collected in excess of expenses (as noted in the Over/Under row) provide carryover to the next budget cycle. Carryover funds are needed to provide wage continuation for the first quarter of the next fiscal year and cover unanticipated expenses. However, inflation and other market factors, which may not be predictable, can increase operating expenses and can significantly impact the fire and EMS district's finances.

A sample three-year operating budget displayed in Table 25 shows how the budget may be expected to increase and the overall effect on finances. Personnel costs are computed with a 4% annual increase and supplies and materials are computed assuming 3% increases

As noted in Staffing Scenario #1, it is understood that not all supplies and contractual needs will increase by 3% each and every year. Likewise, total personnel costs may not increase by 4% each and every year. However, it is important to understand the impact that inflation can have on operational budgets funded by fixed revenue streams.

	Year 1	Year 2	Year 3
Personnel	$4,182,271	$4,349,562	$4,523,544
Contractual & Materials	$1,057,244	$1,088,961	$1,121,630
Supplies	$49,000	$50,470	$51,984
Capital	$300,000	$300,000	$300,000
Fiscal Office	$121,560	$121,560	$121,560
Total	$5,710,075	$5,910,553	$6,118,719

Table 25: Scenario #2 three-year operating budget with inflation

Using information from the estimated three-year operating budget, Table 26 shows the effect of increased operating costs on carryover funds and the accumulation of reserves. Accumulation of reserves is vital for good financing practices and bolsters the capital improvement funds for future equipment replacement for fire apparatus and other capital equipment.

	Year 1	Year 2	Year 3
6.50-mills			
Revenue	$6,092,344	$6,092,344	$6,092,344
Expense	$5,710,075	$5,910,553	$6,118,719
Net	$382,269	$181,791	($26,375)
Reserve	$382,269	$564,060	$537,685
6.65-mills			
Revenue	$6,222,473	$6,222,473	$6,222,473
Expense	$5,710,075	$5,910,553	$6,118,719
Net	$512,398	$311,920	$103,754
Reserve	$512,398	$824,318	$928,072
6.75-mills			
Revenue	$6,309,232	$6,309,232	$6,309,232
Expense	$5,710,075	$5,910,553	$6,118,719
Net	$599,157	$398,679	$190,513
Reserve	$599,157	$997,836	$1,188,349
6.85-mills			
Revenue	$6,395,991	$6,395,991	$6,395,991
Expense	$5,710,075	$5,910,553	$6,118,719
Net	$685,916	$485,438	$277,272
Reserve	$685,916	$1,171,354	$1,448,626

*Accumulated reserves do not include investment income

Table 26: Scenario #2 accumulation of reserves

Table 26 shows reserve funds of $537,685 after three years with a 6.50-mill levy, $928,072 after three years with a 6.65-mill levy, $1,188,349 after three years with 6.75-mill levy and $1,448,626 after three years with a 6.85-mill levy. However, the third year of each levy amount shows a rapidly decreasing carryover amount. Carryover amounts coupled with budgeted capital

funds allow the joint fire and EMS district board to plan for and purchase capital replacement items without going back to the voters for additional funding as well as meeting operational costs affected by normal inflation and increased personnel costs. As noted previously, a 15- to 20-year replacement plan will need to be developed by the new management team to assist long-term financial planning for the district.

Staffing Scenario #3

If the fire and EMS district is challenged in the future recruiting and retaining part-time personnel, this scenario fills all positions with full-time personnel. It has a staffing configuration similar to Staffing Scenario #1, with four personnel at Stations 71 and 72 plus a shift battalion chief, for a total of nine response personnel daily. This would allow a seven-person minimum staffing with two personnel off on approved leave. Each of the two stations will have one full-time lieutenant and three full-time firefighter/paramedics.

Station 71

1 Lieutenant (full-time)
3 Firefighter/Paramedics (full-time)

Station 72

1 Lieutenant (full-time)
3 Firefighter/Paramedic (full-time)
1 Battalion Chief (full-time)

Note: The lieutenants would be dual certified as a firefighter/paramedic or firefighter/EMT. Some of the firefighters could be dual-certified as a firefighter/EMT.

This scenario includes a full-time fire chief, full-time assistant chief, full-time fire marshal, and part-time administrative assistant. Also included is a fiscal officer position, as required by law. In addition to the three full-time administrative and staff positions, this staffing scenario requires 27 employees to fill the full-time shift positions around-the clock; six lieutenants (one for each station for each of the three shifts), 18 firefighters (three for each station for each of the three shifts), and three battalion chiefs (one for each of the three shifts).

This staffing configuration may provide a more reliable deployment model with full-time personnel to meet minimum staffing levels. A sample organizational structure of the proposed joint fire and EMS district with Staffing Scenario #3 is depicted in Figure 13.

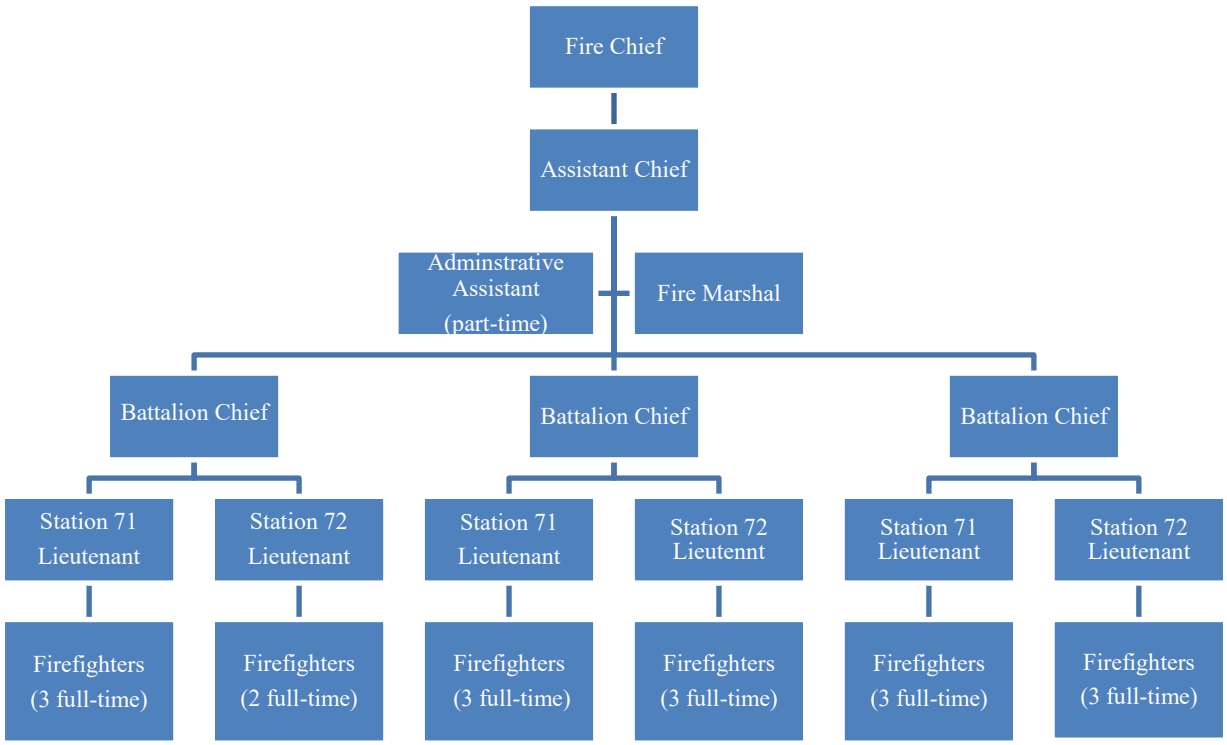


Figure 13: Scenario #3 organizational chart

Staffing Scenario #3 Estimated Budget

Even though this scenario has all full-time positions, the total budget is slightly less (1.67%) than Scenario #2. This is a result of having significantly fewer personnel without any part-time personnel on the roster. This reduces operating costs (purchase and maintenance of turnout gear, uniforms, training, SCBA testing, etc.). As stated previously, the acquisition of grant funds is not included in preparation of the budgets. The salary and wage assumptions used for Staffing Scenario #1 and listed on pages 76-77 were used in developing this projected budget.

Table 27 shows the projected annual operating budget for Staffing Scenario #3.

Fire/EMS District Scenario #3 Estimated Budget	
Personnel	
Wages	$2,636,110
Taxes: Medicare	$41,994
Pension	$660,850
Workers' Comp	$39,542
Insurance	$600,000
Overtime	$130,000
Subtotal	$4,108,496
Contractual & Materials	
Insurance: fleet, building, liability	$23,000
Utilities	$42,000
Debt Service	$309,144
Lease of Facilities	$3,600
Building Maintenance	$10,000
Fuel	$30,000
Vehicle Maintenance	$80,000
Contractual services; testing	$356,000
Equipment Maintenance	$40,000
Firefighter Gear	$44,000
EMS/Fire Equipment	$25,000
Training & Professional Development	$25,000
Dues & Subscriptions	$13,500
Uniforms	$18,000
Miscellaneous Expense	$18,000
Subtotal	$1,037,244
Supplies	
Operating & Miscellaneous Supplies	$25,000
Office/Administrative Expense	$8,000
EMS Supplies	$16,000
Subtotal	$49,000
Capital	
Capital Equipment	$300,000
Subtotal	$300,000
District Fiscal Office	
Salary	$80,000
Pension, Insurance, Medicare, Workers' Comp	$33,560
Bonding/Auditing	$8,000
Subtotal	$121,560
Total Budget	**$5,616,300**

Table 27: Scenario #3 estimated budget

A revenue and expense worksheet for Scenario #3 is shown in Table 28. This worksheet assists in determining the revenue necessary to support the $5.6 million budget developed in Table 27.

	1.0-mill	6.50-mills	6.65-mills	6.75-mills	6.85-mills
Bellbrook	$279,353	$1,815,795	$1,857,697	$1,885,633	$1,913,568
Sugarcreek Township	$643,615	$4,183,498	$4,280,040	$4,344,401	$4,408,763
Total	$922,968	$5,999,292	$6,137,737	$6,230,034	$6,322,331
Property Tax	$922,968	$5,999,292	$6,137,737	$6,230,034	$6,322,331
Less 6% fee*	$55,378	$359,958	$368,264	$373,802	$379,340
Net Collection	$876,820	$5,639,334	$5,769,473	$5,856,232	$5,942,991
EMS Billing	$453,000	$453,000	$453,000	$453,000	$453,000
Total Revenue	$1,329,820	$6,092,334	$6,222,473	$6,309,232	$6,395,991
Est. Expenses	NA	$5,616,300	$5,616,300	$5,616,300	$5,616,300
Over/Under	NA	$476,034	$606,173	$692,932	$779,691

*Tax collection; assessment fee and delinquencies

Table 28: Scenario #3 revenue and expense worksheet

The revenue and expense worksheet indicates that a 6.50-mill, 6.65-mill, and 6.75-mill levy along with EMS billing revenue will provide sufficient funds to operate the fire and EMS district. Funds collected in excess of expenses (as noted in the Over/Under row) provide carryover to the next budget cycle. Carryover funds are needed to provide wage continuation for the first quarter of the next fiscal year and cover unanticipated expenses. However, inflation and other market factors, which may not be predictable, can increase operating expenses and can significantly impact the fire and EMS district's finances.

The three-year operating budget displayed in Table 29 shows how the budget may be expected to increase and the overall effect on finances. Personnel costs are computed with a 4% annual increase and supplies and materials are computed assuming 3% increases. As noted in Scenario #1 and Scenario #2, it is understood that not all supplies and contractual needs will increase by 3% each and every year. Likewise, total personnel costs may not increase by 4% each and every year. However, it is important to understand the impact that inflation can have on operational budgets funded by fixed revenue streams.

	Year 1	Year 2	Year 3
Personnel	$4,108,496	$4,272,836	$4,443,749
Contractual & Materials	$1,037,244	$1,068,361	$1,100,412
Supplies	$49,000	$50,470	$51,984
Capital	$300,000	$300,000	$300,000
Fiscal Office	$121,560	$121,560	$121,560
Total	$5,616,300	$5,813,227	$6,017,706

Table 29: Scenario #3 three-year operating budget with inflation

Using information from the estimated three-year operating budget Table 30 shows the effect of increased operating costs on the accumulation of reserves.

	Year 1	Year 2	Year 3
6.50-mills			
Revenue	$6,092,334	$6,092,334	$6,092,334
Expense	$5,616,300	$5,813,227	$6,017,706
Net	$476,034	$279,107	$74,628
Reserve	$476,034	$755,141	$829,769
6.65-mills			
Revenue	$6,222,473	$6,222,473	$6,222,473
Expense	$5,616,300	$5,813,227	$6,017,706
Net	$606,173	$409,246	$204,767
Reserve	$606,173	$1,015,419	$1,220,186
6.75-mills			
Revenue	$6,309,232	$6,309,232	$6,309,232
Expense	$5,616,300	$5,813,227	$6,017,706
Net	$692,932	$496,005	$291,526
Reserve	$692,932	$1,188,937	$1,480,463
6.85-mills			
Revenue	$6,395,991	$6,395,991	$6,395,991
Expense	$5,616,300	$5,813,227	$6,017,706
Net	$779,691	$582,764	$378,285
Reserve	$779,691	$1,362,455	$1,740,740

*Accumulation of reserves do not include investment income

Table 30: Scenario #3 accumulation of reserves

Table 30 shows projected reserves of $829,769 after three years with a 6.50-mill levy, $1,220,186 after three years with a 6.65-mill levy, $1,480,463 after three years with a 6.75-mill levy, and $1,740,740 after three years with a 6.85-mill levy. Carryover amounts coupled with budgeted capital funds allow the joint fire and EMS district board to plan for and purchase capital replacement items without going back to the voters for additional funding as well as meeting operational costs affected by normal inflation and increased personnel costs. As noted previously, a 15- to 20-year replacement plan will need to be developed by the new management team to assist long-term financial planning for the district.

Funding

The most popular method of funding a joint fire and EMS district is a property tax levy against real estate. It provides the most equitable method in terms of all citizens within the fire and EMS district paying the same rate, similar to a school district tax levy.

During 2025 there have been attempts to pass legislation at the state level to provide property tax relief or in some cases, eliminate or significantly restrict property tax mechanisms. This has become a debated issue, with no specific guidance on replacement funding mechanisms should property tax relief proceed. This is a fluid situation and could impact the information provided in this study regarding the funding of local government services, including joint fire and EMS districts.

Impact on ISO

With the creation of the new fire and EMS district response area, there should be no negative impact on the current PPC of Bellbrook or Sugarcreek Township. If on-duty staffing is increased and the response reliability of the joint fire and EMS district strengthened, the ISO field evaluation and subsequent classification rating may be improved.

Process to Proceed

The steps necessary to form a joint fire and EMS district are guided by the ORC. However, while the steps are straightforward, there is considerable discussion and study necessary between the two entities to move the process forward. Specific action steps and recommendations are provided below. It is strongly recommended that qualified legal counsel be involved with the preliminary functions and formation of the joint fire and EMS district and board, including the development of board by-laws.

Recommendation: ***After reviewing the concepts detailed in this report, Bellbrook and Sugarcreek Township should form a work group***. As noted in the staffing scenarios and budgeting assumptions, there are numerous staffing approaches and operational considerations that need to be reviewed and finalized. There are also administrative processes and issues that need to be addressed in creating the joint fire and EMS district since it involves the merger of two well-established organizations.

Operational considerations include but are not limited to:

1. Determining response performance goals. Currently, BFD and STFD have modified response performance goals, which serve each community well. BFD has a stated turnout time goal of two minutes, which means the goal is to have the unit responding receive notification of the call and leave the station enroute to the scene within two minutes or less. They also have a five-minute response time goal, which means the goal is for the fire or EMS unit arrive on the scene within five minutes or less (from the time the unit is dispatched until arrival at the scene). STFD also has a turnout time goal of two minutes. These goals can continue to be used, or more specific response performance goals can be developed.

2. Staffing. This follows operational consideration #1, as this allows the work group to

determine the number of personnel, including the number of full-time and part-time personnel needed, to achieve the joint fire and EMS district's performance goals.

3. Organizational structure. Determining the appropriate command structure for proper management and administrative oversight of the joint fire and EMS agency.

4. Facilities. Which fire stations are needed to accommodate the staffing needs and meet performance goals. This would include space needs for reserve apparatus and equipment and potential lease agreements between the entities and the joint fire and EMS district.

5. Payroll. Wage scales including benefit packages. While similar, BFD and STFD have different pay scales for both full-time and part-time positions and differing benefit packages for full-time employees. The benefit packages provided to full-time employees need to be decided such as vacation leave, personal leave, sick leave, holidays, and health care insurance (including dental and vision packages).

In addition to the wage scales, the workweek for full-time shift employees must be determined. BFD personnel currently work a 56-hour workweek, which is 24 hours on duty followed by 48 hours off duty. To meet FLSA provisions, personnel receive six hours of overtime pay each 15-day work period. STFD shift personnel work a 53-hour workweek, which is 24 hours on duty followed 48 hours off duty. Personnel earn additional time off each 28-day work cycle, which equates to seven extra days off annually. Thus, the workweek will need to be discussed and decided.

Most incumbent personnel from both agencies have existing vacation and sick leave accrual balances. What happens to those balances if the district is formed and the employees now work for the joint fire and EMS district? The employees will expect those balances to transfer to the newly formed fire and EMS district. Ohio law allows transfer of sick leave balances and vacation balances can be transferred, if approved by the entity. If Bellbrook or Sugarcreek Township allocate funds within their respective financial accounting systems to cover the cost of accrual balances upon retirement or separation, this funding needs to be addressed.

6. Hiring. Throughout the report existing BFD and STFD employees were assumed to become members of the fire and EMS district agency. This process is a common practice where other districts have been formed and is rather a streamlined process. However, many of the issues identified previously (wage scales, benefit packages, leave, workweek and accrual balances) all must be addressed administratively. This will we require administrative work and time to process employee on-boarding.

7. Other. The work group also can also discuss the district board make-up. By law, at least one representative from each entity (a township trustee and council member) is to be appointed to the fire and EMS district board. It is highly recommended that the work group work develop to develop a method to select a member at-large to the district board so as to have three voting members.

The work group should also discuss if funding and administrative support (such as office or human resources staff) from Bellbrook and Sugarcreek Township, at least initially, is needed to support the formation of the district until the district's revenue stream is established.

Once these operational considerations and administrative processes are discussed and addressed, the district operating expense budget can be more accurately determined. The amount of funding needed to support the district's operating expenses can then be revisited.

Action Step - the Bellbrook City Council and Sugarcreek Township Board of Trustees will need to adopt resolutions to form the joint fire and EMS district.

Action Step - each of the two entities will be required to select one representative (a township trustee and council member) to the fire and EMS district board. It is highly recommended that the two elected bodies work together to develop a method to select a member at-large to the district board so as to have three voting members.

Action Step - the new fire and EMS district board will need to schedule meetings, select a chair and fiscal officer. Once functioning, the board can operate similarly as a township. Note: the fiscal officer will be required to execute a bond, in the amount and with surety approved by the district board, and payable to the state of Ohio. It shall be deposited with the board chair, who shall certify it and file a copy of it with the county auditor (ORC §505.375).

Action Step - the fire and EMS district board will need to determine the start-up date for the new fire and EMS district and plan accordingly.

Action Step - the fire and EMS district board determines the millage needed to operate the district and takes the necessary steps to have the issue placed on the ballot.

Action Step - voters support new operating levy.

Action Step - the fire and EMS district board will need to select a fire chief.

Action Step - the fire and EMS district management team and board prepare for operations to begin. Key areas of operation to address include administrative policies, operating procedures, pay scales, and appointing existing employees to the new fire and EMS district agency. Also

included is the dispatching contract with the Greene County Communications Center for the newly formed district as well as operating agreements with the MARCS radio system.

Action Step - vehicles and equipment from Bellbrook and Sugarcreek Township will need to be transferred to the new fire and EMS district unless leasing options are chosen.

Action Step - the new fire and EMS district begins operational response on designated date.

Other Key Issues

Existing Tax Levies

Whenever a joint district is formed, the question of the existing tax levies must be addressed. Bellbrook currently has three tax levies that total 7.65-mills that fund fire and EMS operations. Sugarcreek Township has five tax levies totaling 7.80-mills that fund fire and EMS operations. The township also passed an additional 1.0-mill levy in 2025 that begin collection in 2026, bringing their total millage to 8.80-mills. Both BFD and STFD receive revenue from EMS billing for patients transported to the hospital.

If the new joint fire and EMS district seeks a new tax levy to support operations and is approved, Bellbrook and Sugarcreek Township would cease collecting on their existing levies. This can be accomplished by resolution. However, that message to the electorate would be paramount for any levy campaign. Although this is a common practice, it should be verified with the county auditor. EMS billing can be continued by the new district by simply completing the necessary administrative changes with the third-party billing company selected.

Collective Bargaining Agreement

The city of Bellbrook and Sugarcreek Township have CBAs with their respective fire personnel. The question is what happens to the CBAs if the joint district is formed? Since BFD and STFD would cease to exist and all personnel must be appointed as employees of the district, the CBAs would at that point no longer have any standing. Thus, the new joint fire and EMS district board would not be bound by any part of the CBA. However, the employees of the new district may request to negotiate a new CBA with the joint fire and EMS district board. Note: this information is presented based on past experience of the OFCA and is not offered as legal advice or opinion.

Final Analysis

The purpose of this study was to determine if the creation of a joint fire and EMS district involving the city of Bellbrook and Sugarcreek Township was a viable option for consideration. In this study, the existing service delivery was reviewed as well as existing service demands. Next, a new fire and EMS district was developed conceptually, including a projected operational

budget and the necessary revenue needed to support operations. These items together provide the basis for officials to make their informed decisions.

After careful analysis and review, the assessment team has determined that it is feasible for the departments and the entities to form a joint fire and EMS district. While each department has their own identity and traditions, they operate similarly, with both full-time and part-time personnel. They face similar risks in their respective communities and they have a good working relationship with each other and other departments in the area. They also share a common radio system and have similar equipment, such as SCBA. With the proper leadership, the new organization should be successful with uninterrupted and seamless service delivery to the public.

As noted previously, there are several advantages to consider in forming a joint fire and EMS fire district. The joint fire and EMS district will result in an equitable tax base for all residents within the district response area. There will be an economy of scale that will reduce some of the operating expenditures, such as equipment and supplies. There will be improved operational efficiencies in staffing and training, and future apparatus purchases can be reduced, further reducing capital outlay and ongoing maintenance costs.

The staffing scenarios presented maintain or in some cases improve response capability for fire incidents and overlapping calls for service and reliability. However, the staffing scenarios are illustrative only; the joint fire and EMS district board, if formed, can develop other staffing scenarios they feel would best serve the two communities. It is strongly recommended that any preliminary discussions regarding the staffing plan for the new joint district include the fire chiefs and leadership teams of the respective departments. The taxation rates and work tables used in this study should provide the tools for the fire and EMS district board to analyze operational costs versus revenue.

From a financial perspective, the estimated joint fire and EMS district's operating budget would present an increase over the cost of funding the two fire departments. For example, in 2024, BFD had actual expenses of $1.39 million and STFD had expenses of $3.15 million for a total of $4.54 million, not including capital expenditures. Staffing Scenario #1 had an estimated operating cost of $5.1 million, which is a 12.8% increase. However, the estimated operating budget includes $300,000 earmarked for future capital expenditures.

The opportunity to start a new fire and EMS organization affords a chance to build a long-term funding structure that can provide the citizens and elected officials stability. It is the collective opinion of the assessment team that sufficient tax dollars must be sought to establish the district and set it on the right footing – do it right and do it up front so that long-range financial and operational planning can be performed. However, in the end, the decision on the amount of taxation that may be supported by the voters will be a discussion and deliberation for the elected officials of the participating entities.

Some of the important issues that will need to be addressed by the new fire and EMS district board include planning for apparatus acquisition and funds needed for potential long-term facility needs. Having sufficient accumulation of reserve funds will allow capital equipment replacement and also allow planning for facility upgrades as needed. Without sufficient reserve funds, capital equipment replacement and new equipment acquisition can become problematic. Many entities and organizations across the state have become reliant on grant funding, but these processes are normally highly competitive and the awarding of grant funds or the continued funding of the grant program at the federal level can never be assured.

Finally, it must be emphasized that the creation of a joint fire and EMS district will require considerable time and effort. As the projected budget and revenue analysis shows, the formation of a new district will not result in any initial cost savings, based on the amount of funds currently being expended. However, the new fire and EMS district will provide the residents and members of the fire department long-term stability. There may also be future opportunities for contracted services or expansion of the district, which may further stabilize the finances of the district.

The key issue for all those involved is determining the level of service desired by the public. It is recommended that an attempt to determine this service expectation, as noted in the operational considerations and workgroup discussion on pages 91 and 92, be initiated before placing tax levies on the ballot.

Additional Thoughts

Creating a joint fire and EMS district with two well-established organizations involves significant time, effort, and dedication of many individuals from both entities. There are many issues to address and this effort can take several years to make the fire and EMS district concept a reality. In this particular case, it is made more complicated with the discussions and efforts at the regional and state level regarding property tax relief. Should the two communities decide the creation of a fire and EMS district is not in the best interest of the communities at this time, the assessment team recommends the two fire departments examine the value of collaborative efforts.

Beyond mutual aid provided to the respective communities, collaboration is a deep-dive into ways and methods that can improve response performance and training efforts that result in improved service delivery in each community. For example, both departments have experienced instances where a department vehicle from one department has passed a fire station of the other department enroute to a call. What service delivery improvements would be realized if both communities adopted a closest unit response agreement? Collaboration efforts could also be examined in the area of part-time personnel. What improvements could be realized if both departments shared the part-time employee pool instead of competing for personnel to fill positions?

These are just a couple of examples that could be discussed and analyzed when discussing collaborative efforts. There are several examples of collaborative efforts across the state that could provide the departments with information and past experiences should this effort be undertaken.

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Appendix A

In the state of Ohio, the Ohio Division of EMS is responsible for provider licensure, certifications, oversight, and enforcement of all the laws governing EMS and firefighting. There are four levels of EMS certification: Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), and Paramedic. Each level of EMS certification is based on the National EMS Scope of Practice, which has been incorporated into ORC §4765.30 [http://codes.ohio.gov/orc/4765].

EMR (formerly known as First Responder) certification is designed to provide basic emergency medical care and stabilization of a patient until a higher level of care arrives. Often, you will see fire departments who provide first response services utilizing EMRs. Becoming an EMR requires at least 48 hours of initial training and 15 hours of continuing education every three years. An EMT (formerly known as an EMT-Basic or EMT-B) requires a minimum of 150 hours of initial training and at least 40 hours of continuing education every three years. An AEMT (formerly known as an EMT-Intermediate or EMT-I) requires an additional 200 hours of training above that of an EMT and at least 60 hours of continuing education every three years. AEMTs are able to perform many advanced life support procedures and administer certain medications to patients. To advance to the paramedic (formerly known as an EMT-Paramedic or EMT-P) level, a person must possess EMT certification and is required to attend nearly 900 additional hours of clinical and didactic training, which allows them to perform additional life-saving procedures and administer additional medications. Examples of these procedures would be performing cardioversion, applying an external pacemaker, cardiac defibrillation (shocks to the heart) and advanced invasive procedures such as chest decompression and needle cricothyroidotomy. The paramedic must obtain 86 hours of continuing education every three years, which includes maintaining advanced cardiac life support (ACLS) certification offered through the American Heart Association or other sources.

In firefighting, training and certification has three distinct levels. Volunteer Firefighter is the basic level and is limited by law to 36 hours of initial training. It is the minimum level required to perform the duties of a volunteer firefighter. This level of training is also the minimum required by law to serve as a part-time firefighter unless additional training is required by the local fire agency.

The next level of firefighter training is FF I. This level requires an additional 104 hours of training beyond the volunteer course level. This level of training also requires the demonstration of competency in several areas such as proper use of SCBA. The highest level of training is FF II. This includes 240-260 hours of training in a variety of subject matter and the ability to demonstrate competency in several required areas. Full-time firefighters in Ohio are required by law to achieve certification at this level to work in their position. Fifty-four hours of continuing education every three years is required to maintain firefighter certification.

Appendix B

The Science of Fire and the Need for Rapid Response to Affect Positive Change

Because there is such a wide variation in the fire dynamics of each particular fire, it is imperative to find a common reference point, something that is common to all fires regardless of the risk-level of the structure, the material involved, or length of time the fire has burned. Such a reference point exists. Regardless of the speed of growth or length of burn time, all fires go through the same stages of growth. One stage in particular emerges as a very significant one because it marks a critical change in conditions; it is called *flashover*.

The flashover stage of a fire event marks a major turning point in fire conditions that increases the challenge to a fire department's resources. How and why this occurs is explained in the following descriptions of each stage of fire growth in a structural fire.

Incipient stage

The smoldering stage is the first stage of any fire. When heat is applied to a combustible material, the heat *oxidizes* the material's surface into combustible gases. The oxidation process is exothermic, meaning that the oxidation process itself produces heat. The heat from the oxidation raises the temperature of other materials, which increases the rate of oxidation and begins a chemical chain reaction of heat-release and burning.

A fire progresses from the smoldering phase immediately or slowly depending upon the fuel, nearby combustibles, and the surrounding air. For example, a bundle or stack of newspapers will smolder only a few seconds before progressing to the next stage, but a couch with a burning cigarette may continue smoldering for an hour or more.

Growth stage

When the temperature gets high enough visible flames can be seen. This is called the growth stage or open burning. The visible burning at this stage is still limited to the immediate area of origin. The combustion process continues to release more heat, which heats nearby objects to their ignition temperature and they begin burning.

Flashover/fully developed stage

Not all of the combustible gases are consumed in the growth stage. They rise and form a superheated gas layer on the ceiling that can quickly reach 1,500° F (Fahrenheit). As the volume of this gas layer increases, it begins to bank down to the floor, heating all combustibles regardless of their proximity to the burning object. The gas layer is mostly carbon monoxide so the absence of oxygen prevents the heated objects from bursting into flame.

Oxygen gets introduced into the space in two ways. There is often enough available oxygen near

floor level to start the open burning process when the gas layer reaches that level. Or, the high heat breaks a window and the incoming oxygen allows the burning to begin. It should be noted that the room becomes untenable long before flashover. Even though open flaming may not be present until everything reaches 500°F and oxygen is introduced, the room becomes untenable for human survival at 212°F.

When flashover occurs, everything in the room ignites into open flame at once. This instantaneous eruption into flame generates a tremendous amount of heat, smoke, and pressure with enough force to push beyond the room of origin through doors and windows. The combustion process then speeds up because it has an even greater amount of heat to move to unburned objects.

Flashover is a critical stage of fire growth for two reasons. First, no living thing in the room of origin will survive, so the chance of saving lives drops dramatically. Second, flashover creates a quantum jump in the rate of combustion and a significantly greater amount of water is needed to reduce the burning material below its ignition temperature. A fire that has reached flashover means that it is too late to save anyone in the room of origin, and a significant increase in staffing is required to handle the larger hose streams necessary to extinguish the fire. A post-flashover fire burns hotter and moves faster, compounding the search and rescue problems in the remainder of the structure at the same time that more firefighters are needed for fire attack. See the information in Table 31.

PRE-FLASHOVER	POST-FLASHOVER
Fire limited to room or area of origin Requires small attack lines	Fire spreads beyond room or origin Requires more or larger attack lines
Search and rescue efforts easier	Compounds search and rescue efforts
Requires fewer resources and can be handled by initial effective response force	Requires additional resources (companies)

Table 31: Pre-flashover and post-flashover firefighting comparison

It has long been known that the real killer in a structural fire is smoke, not the flame or heat. Smoke contains many toxic gases released as byproducts of the combustion process. Carbon monoxide is one of these gases and the most prevalent. Test fires in residential structures have demonstrated the production of carbon monoxide in measurable amounts after 3½ minutes from the ignition of the fire.

The primary objective of fire operations is to provide enough firefighters and equipment in a strategic location so that an effective response force can respond to and reach fire scenes to

mitigate the problem before flashover occurs. The "time-temperature curve" standard is based on data from NFPA and ISO that establishes that a typical point source of ignition in a residential house will flashover at some time between five and 30 minutes after ignition, turning a typical *room and contents* fire into a structural fire of some magnitude. The time-temperature curve illustrated in Figure 14 comes from research efforts of the NFPA on smoke alarms and other detection equipment (2004). The illustration demonstrates the relationship between time and how a fire grows.

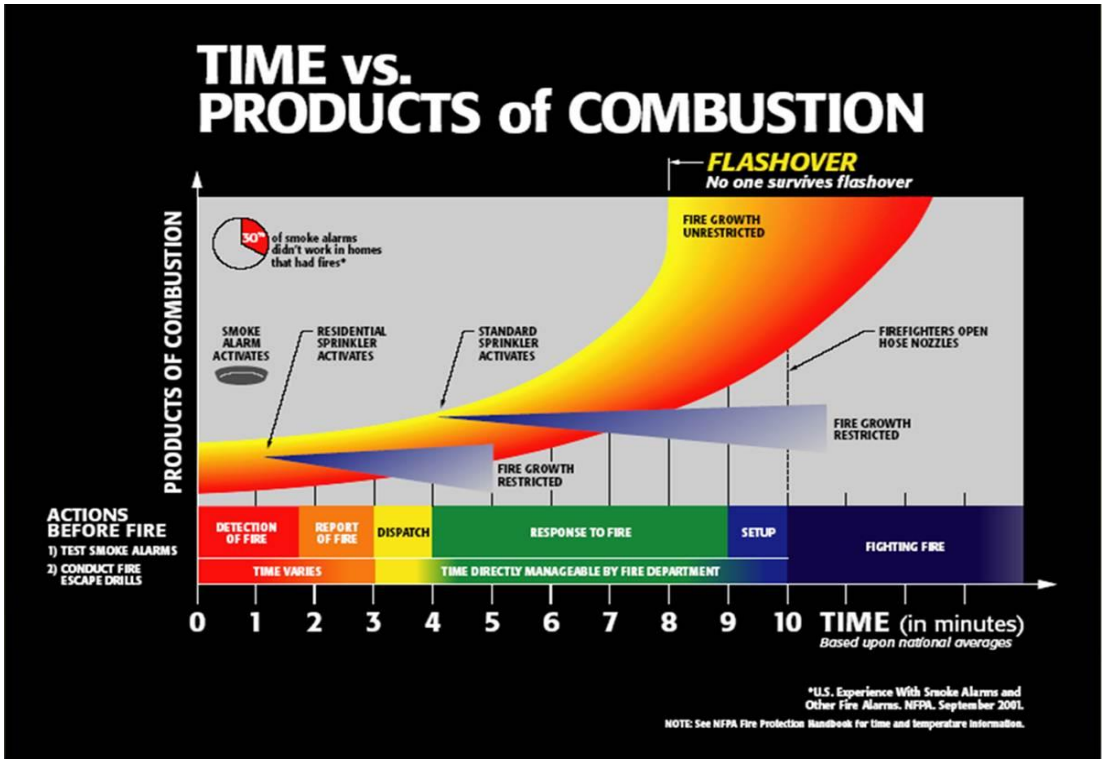

Figure 14: Time vs Products of Combustion

Time requirements for EMS calls are comparable to fire incidents. The purpose of a quick response, especially in the most critical situation (cardiac arrest), is that the brain, deprived of oxygen and circulation begins to die within four to six minutes. Brain damage is normally irreversible after 10 minutes. Interventions include early CPR and electrical defibrillation. Previous studies show the time to deliver a shock (called defibrillation) to the patient in cardiac arrest to be three to six minutes. Current guidelines from the American Heart Association plus additional guidelines from the American College of Emergency Physicians and the National Highway Traffic Safety Administration suggests a response time interval of not more than five minutes from alarm notification to scene arrival for responders capable of performing CPR and utilizing an AED.

An AED is a portable device that the first responder or trained civilian can use on a patient who is pulseless and not breathing. When the device is connected to the patient, it analyzes the

patient's heart rhythm and automatically delivers electric shocks to the patient if needed. Furthermore, guidelines provide for no more than a 10-minute response interval for providers capable of performing ALS level interventions, if that level of service is available. The importance of time of intervention in a cardiac arrest event is illustrated in Figure 15, which comes from the Arizona Heart Rhythm Center.

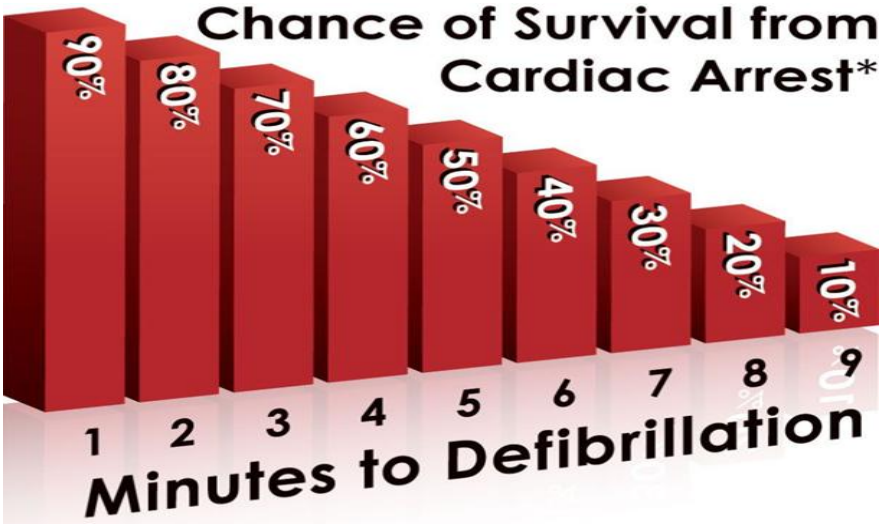

Figure 15: Survival from sudden cardiac arrest