

**CITY OF SYLVANIA
LUCAS COUNTY, OHIO**

**ANALYSIS OF ALTERNATIVES IN
THE PROVISION OF FIRE AND
EMERGENCY
MEDICAL PROTECTION**

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EXECUTIVE SUMMARY

During the months of April, May and June, 2007 the firm Kramer & Associates conducted a study of the Fire and Rescue Services in Sylvania, Ohio.

Currently the City of Sylvania and the surrounding township of Sylvania both receive fire protection services from a common organization administered by the Township. While there is currently a proposal being studied that would merge the City and Township into one governmental entity, the City must be prepared to operate in its own interests should the proposal not become reality. The paragraphs of this report will explore the feasibility of the City providing its own fire protection services rather than remaining as part of the joint service delivery mechanism shared with Sylvania Township. The report will provide the advantages and drawbacks of such a move, along with the associated costs that would likely be incurred.

The report will show that there would be real advantages to the city in terms of identity, quality assurance and a reduction of the dependency on the Township. One obvious question might be “Can we in the City provide a comparable level of safety and fire protection/EMS service for the same cost?” the answer is Yes. The comparison is difficult however since fire and EMS protection will take on a new form. The service will be better in terms of quality control, responsiveness to city citizenry, identity and other factors. A larger concentration of emergency personnel can be placed on duty in the city economically if the city adopts creative staffing alternatives such as part-time personnel and a strong volunteer backup force. There are a few disadvantages such as the increased need for mutual aid for major events. There will be new one-time investment costs to the city for facilities but these are minimal compared to the ongoing costs of personnel. This report will show that the marginal overall gains would more than offset the overall marginal costs. The City has a “Can do” reputation which will facilitate the creation of its own department.

Several complicating factors addressed in the report are the distribution of assets and the city’s claims to a portion of the equipment, vehicles, and fire station from the existing joint department. Independent legal counsel has advised that the city would in fact have an entitlement to a share of the assets. Nonetheless, the City should calculate the costs of its own Fire Agency as if it will receive no equity from the Township Fire Department. The existing fire department organization which serves this city and township is respected by the citizens, and provides a quality level of both fire fighting and emergency medical services, as is the case in most communities. The study concluded that there would be no degradation of these services nor diminishment of the quality perception among the public should the city form its own department.

A higher profile City Department will likely be perceived as superior. An informal survey of the rank and file members indicate that the vast majority would prefer to work for a city department rather than a township government department, largely due to the healthier financial options available under city administration. Should the City of Sylvania decide to form its own department, recruitment would not be an issue.

Neither the City nor the Township can afford to adopt a position of isolationism if the departments are separate, since they will be dependent on each other and on surrounding departments for depth. Other departments will need the Sylvania City Department so cooperation arranged by the fire service leadership would be easily initiated and maintained.

If Sylvania city does decide to go independent the problem would shift to the township which would see a depletion of its ranks. If the combined total number of firefighters on duty increases as is likely, based on this consultant's projections, then a recruiting for additional firefighters would fall to the township.



Photo #1: The City of Sylvania has an identity that could be augmented by a City Fire Department.

Several new opportunities present themselves for the City of Sylvania if it were to begin service with a new department. It has two options to gain on-duty strength and reserve forces at a fraction of the normal cost that goes with a full time career firefighter.

To bolster on-duty strength Sylvania City could rely on a concept of part-time personnel who, unlike volunteers, must be on duty in a fire station working some part of a normal 24 hour schedule. Some departments, including Howland Township near Youngstown, Ohio, have actually allowed part-timers to work 24 continuous hours one day a week; others have them work 6-hour or 12-hour shifts during peak run demand periods.

For reserve strength volunteer firefighters – many of them veterans of the Township Department – are available and eager to serve. They seek only an organization which will give to them clear operating guidelines and a legitimate role.

The costs for fire stations, apparatus and equipment seem formidable up front but over the life span of a typical paid career fire department represent a small portion of the total investment, Personnel account for the major expenditures. Costs of various types of staffing configurations, buildings, and apparatus are all presented and compared. Clear and distinct alternatives are presented along with advantages, and disadvantages of each. Projected costs for a new fire department are calculated.

The City of Sylvania deserves credit for seeking a neutral opinion regarding the Fire Department and EMS Operations since these are among the most vital and expensive of Township services.

A consultant is usually no more intelligent than the client that he or she is serving, but can bring objectivity and a non-bias to a jurisdiction that can be invaluable. It is hoped that this study will provide information that can be used by The City of Sylvania Officials to create a fire department commensurate with increasing demands, and quality service which residents and businesses in the Sylvania community have come to expect.



Photo #2: A Sylvania Township fire crew checking on an alarm drop

ALTERNATIVES FOR SYLVANIA

During the research study, the consultant analyzed alternative methods whereby the City of Sylvania could deliver necessary fire protection and emergency medical protection to its residents and businesses, both now and into the future. Two primary alternatives are;

- a. To create a new City of Sylvania Fire Department
- b. To continue to share a fire department with Sylvania Township

Primary consultant William M. Kramer, assisted with input from Randall Hanifen conducted a coordinated analysis of the many fixed and variable factors involved in these two options, and presents their findings in this report. (Resumes of the team members are found in **Appendix 1** at the end of this report.)

The consultant found that many individuals in the City administration displayed a keen interest in The City of Sylvania, and a devotion to public service. To a person they expressed a sincere desire to provide quality Fire and Rescue service to the businesses and residents of The City of Sylvania, and all provided detailed input to the Consultant. Sincere appreciation is extended to Mayor Craig Stough, City Council members Mark Luetke and Dr. Read Backus, Personnel Director George Eichenauer, Safety Director Gerald Sobb, Law Director Jim Moan, and Finance Director John Plock. These individuals displayed a keen interest in the entire Sylvania community, and a devotion to public service. They expressed a sincere desire to provide quality fire and rescue service in the City of Sylvania, while continuing to cooperate and work with Sylvania Township.

Thanks also to Deputy Chiefs Tom Eisel and Jeff Kowalski of the Sylvania Township Fire Department, who worked with the consultants and provided much helpful information. President Chris Nye of IAFF Local 2243 displayed a confident progressive spirit which was refreshing. Also the consultant met with Steve Lafferty, John Raszka and a delegation of volunteer firefighters all eager to serve in new department if the opportunity presents itself.

Sylvania deserves credit for seeking a neutral opinion regarding alternative ways to deliver fire protection and emergency medical services (EMS), since these are among the most vital and expensive of governmental services. A consultant is usually no more intelligent than the client that he or she is serving, but can bring objectivity and a non-bias to a jurisdiction that can be valuable. It is hoped that this study will provide information that can be used by Sylvania as a blueprint for the future.

Consider the alternative: “To create a new City of Sylvania Fire Department.” The advantages would include autonomy, identity and quality assurance in service. This option clearly places Sylvania in the best position with regard to self-destiny and future growth even though reliance on automatic and mutual aid would still be required. The disadvantages would be the requirement of significant capital expense for implementation of such a plan, the additional ongoing revenue required.

Also there are the challenges of implementing an organization and providing the equipment and the infrastructure to be successful in providing adequate service to the citizens in the City of Sylvania.

HISTORICAL PERSPECTIVE

Both the City and Township of Sylvania have received fire protection and emergency medical service over the years from one organization with control shifting from the City to the Township in approximately the year 1928. The Sylvania Township Fire Department has four fire stations strategically located with one in the heart of the City of Sylvania



Photo #3: Aerial ladder at Sylvania Township fire station No. 3, east of the city on Monroe St., with a 2-person crew

As Sylvania and the township surrounding the City have both grown, fire protection has changed and evolved to meet the increasing service demands.

Although the combined fire district has committed to serve all existing residents and commercial occupancies equally regardless of whether they are in the city or township, but there are no guarantees. This creates a challenge for the City, in that the township has no long-term commitment to the city's fire and EMS protection. The City understandably wants to assure that there will be fire and EMS services for their city.

The fact is that only one of the four stations is in the city and it was threatened with closure at one point in time. Acceptable alternatives must be researched and prepared for by the City.

As these fire protection services continue to evolve in and around Sylvania, changes are occurring at the national level, which are relevant to our study.

Three Fire Service Eras

At the national level, fire protection presents an interesting history, which can be divided into three eras. One of the founding fathers of our Country, Benjamin Franklin, was a leader in the early American volunteer fire service. Early in our history, the U.S. citizenry depended upon fire protection in the form of vehicles, such as hand-drawn pumps and hose carts, brought to the incident location (“Era I”). In a sense, this form of fire protection has not changed much, and from coast-to-coast across North America, fire departments both large and small back their apparatus into quarters, await the sound of a call, and rush to the scene when the alarm is sounded.



Photo #4: Early horse-drawn steamer from “Era I”

A second era of fire protection (“Era II”) is represented fire suppression systems (sprinklers and alarms) inside of structures. Commercial buildings, factories, hotels, and any other buildings which present a potential for large loss, or which represent a life hazard in terms of occupancy, can be protected with automatic sprinkler systems. These will hold a fire at bay and often will summon a fire department when the water flow in the piping system triggers an automatic alarm. This fire protection is immediately deployed and is capable of operating independently of the external protection provided by a fire department.

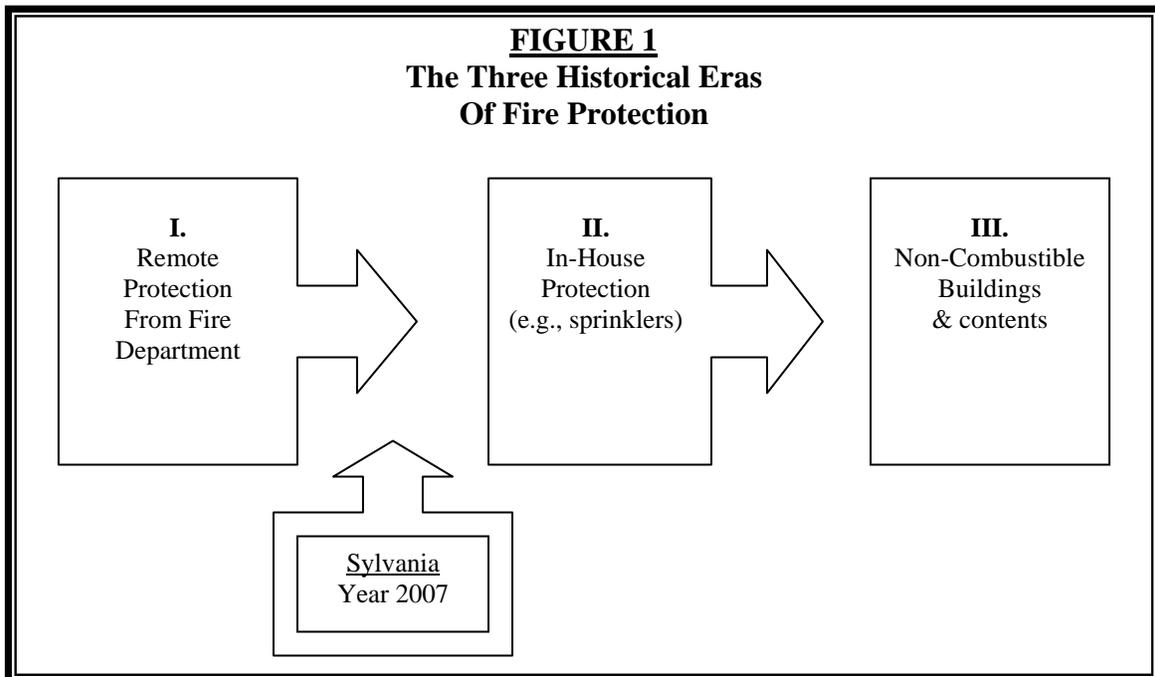
As part of Era II, smoke alarms, mandated in many commercial occupancies, have become popular in homes, and have resulted in the early detection of many fires while in the incipient stage. This has allowed the occupants to take immediate action and is responsible for saving untold numbers of people from the ravages of fire.

An obvious tradeoff exists between in-house proximate protection, provided by sprinklers and alarms (“Era II”), and the external protection provided by the fire department (“Era I”). Since newer commercial properties, notably the Tire Discounters operation and the new Rite Aid Pharmacy, have been developed and have been constructed in Sylvania in recent years, they enjoy Era II internal protection, reducing some of the future demand for firefighting forces.

The third generation of fire protection will consist of a “non-combustible society”, (“Era III”). Currently, the technology exists to construct fire resistant buildings, and to outfit these buildings with non-combustible furnishings. Coupled with this is the ability to treat all fibrous products, such as clothing, paper, decorations, or anything else that could conceivably be brought into a structure with a fire retardant process. (One such product called “no char®” has been used to treat all of the barns at the Ohio State Fairgrounds).

Should we as a society ever agree to make the necessary expenditures to create a virtually non-combustible society, then not only are fire departments from “Era I” rendered less important, but sprinkler systems and in-house protection from “Era II” will likewise become far less necessary. “Era III” will not enter into our study or equation, since society is not even close to entering a non-combustible age. ***However, this change has impacted the fire service since its evolution, and progressive fire service organizations have expanded their focus into providing other critical services, such as emergency medical services and hazardous materials response.***

The history of fire occurrences inside the City limits shows that fires have routinely been controlled in the building of origin with the use of fire protection delivered by the fire department. **Figure 1** shows this three-step evolution, and the current positioning of Sylvania.



EXISTING TOWNSHIP FIRE DEPT.

Sylvania Township can be proud of the Fire Rescue Service it fields day in and day out. Although stretched thin, on duty bring quality and enthusiasm to the job and deliver quality service. When the men and women depth and/or additional resources are needed for major or simultaneous emergencies, neighboring fire departments are available, and are quickly summoned. The City of Sylvania contributes to and benefits from this quality service but has no real control regarding operations or future direction of the organization. Although the on-duty force may be minimal in The City of Sylvania it is capable of providing some immediate assistance quickly. Soft regional borders assure necessary depth from within and beyond the city and township.

Later in this report, the location and distribution of fire stations will be analyzed in greater detail. Because Sylvania Township operates out of a dispersed pattern of fire stations, some immediate help is usually available quickly to all residents for either fire or paramedic needs.

Table 1 below shows the frequency of responses in the City of Sylvania Fire Department over the past five years, and **Figure 2** and **Figure 3** on the next page show the same total call volume statistics graphically.

TABLE 1: FIRE AND EMS CALL STATISTICS FOR SYLVANIA AND SYLVANIA TOWNSHIP FOR THE LAST 5 YEARS

	Year:	2002	2003	2004	2005	2006
<i>FIRE INCIDENTS:</i>	Sylvania City	248	218	185	197	222
	Unincorporated Twp	537	478	500	511	496
	Other	6	3	15	15	15
	TOTAL	791	699	700	723	733
<i>EMS INCIDENTS:</i>	Sylvania City	1024	946	973	921	1064
	Unincorporated Twp	1687	1606	1708	1857	1956
	Other	11	19	20	26	17
	TOTAL	2722	2571	2701	2804	3037

Figure 2 - The breakdown in response between the city and township for Fire Calls for the last five years:

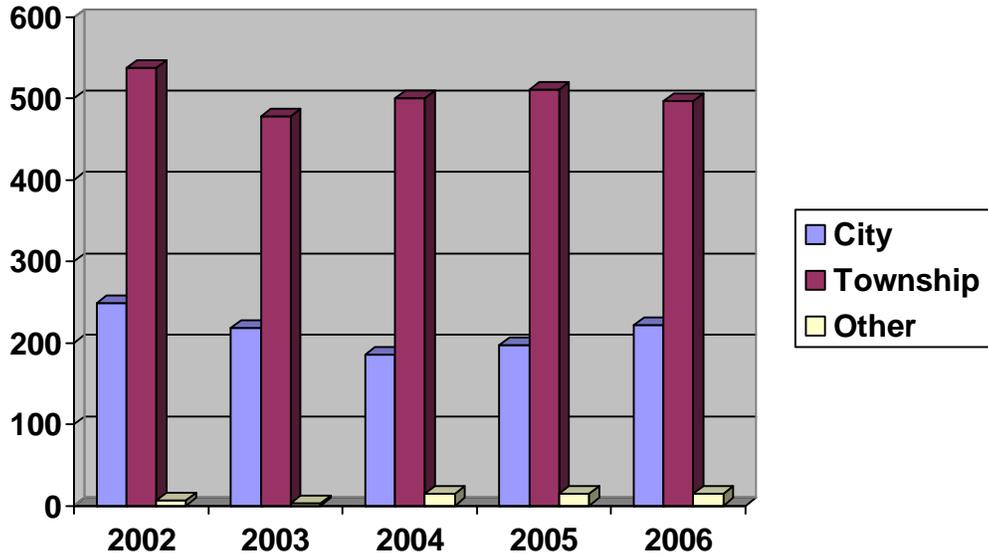
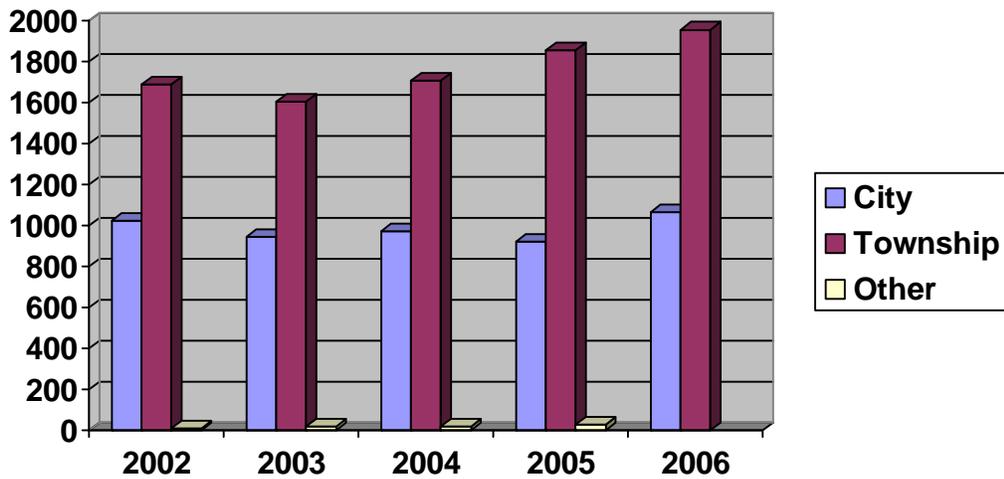


Figure 3 - The breakdown in response between the city and township for EMS Calls for the last five years:



All vital functions are performed by the Sylvania Township Fire Department and it can call itself a true “Full-Service” Fire Rescue agency. Fundamental fire suppression, fire prevention, and fire code enforcement capabilities are present. Full paramedic services are delivered by the Lucas County unit stationed in the heart of the City. Specialty rescue and Hazardous Material operations are also available with members of the Sylvania Township Fire Department participating in regional response teams.

The next several pages will illustrate the positive features and opportunities for improvement in the Sylvania Township Fire Department. These are in a rather random format, based on the order in which they were uncovered, either in the formal interview process, or during the consultant’s analysis.

Nine “strengths” are listed and seven “areas needing attention” follow. Not only do the positive features of the Sylvania Township Fire Department greatly outnumber the areas needing attention, but also on a weighted basis the positive features are, on an average, much more significant. In short, **the existing department is in good shape.**

STRENGTHS OF THE SYLVANIA TWP. FIRE DEPT.

The Township of Sylvania can be proud of the many positive features that characterize its Fire Department. These are briefly summarized below:

1. ***Political and Administrative Support*** –Elected officials in both the city and township were interviewed by the consultant. To a person they expressed support for the work performed by the fire rescue service and appeared open minded in their support for any future endeavors, including those that might require additional budget expenditures.
2. ***High Quality Personnel*** – The Consultant had the opportunity to personally discuss issues with members of the Sylvania Township Fire Department and found that they are dedicated employees, anxious to provide quality work while on-duty both in the fire and in the paramedic service delivery areas. The dress was professional, grooming was evident, and in other ways the professional appearance of the fire department members mirrored the quality service they deliver.
3. ***Quality Training*** – Sylvania firefighters have achieved a reputation of being well trained thus enhancing the talent that members bring to the field when called upon to provide life saving services.
4. ***Distributed Fire Stations*** – The distribution of the fire stations, although not optimal, does ensure that help is provided rapidly from four distribution points. This allows vital life saving or fire fighting services to at least be started in all parts of the township while additional resources arrive from further locations.

5. ***A Constructive Local Firefighters Union #2243*** – The Consultant took time to address numerous questions to President Chris Nye and Secretary Mike Street in order to obtain input regarding the Union’s position on current and future affairs in the fire department. He was pleased to see a non-militant, professional attitude that can be used as an asset by the Administration regardless of whether the Department stays as one or separates. Chris did not reject the role that might be played by volunteers in Sylvania, having himself once been among their ranks. While maintaining a position of strength in bargaining for the wages, fringe benefits and rights of its membership, the Union has nonetheless been willing to work with Management in a positive fashion as new developments and challenges arise for the Sylvania Township Fire Department.
6. ***Community Support*** - As in most communities, the Fire and Paramedic services are held in high regard by the public. Their unwillingness to support additional taxation seemed to have more to do with taxpayer fatigue than a rejection of the fire service. The consultant interviewed corporate leaders and residents whose lives and property are protected in Sylvania. Satisfaction on all fronts was evident.
7. ***Allegiance to Platoons*** – There is an identity among members of each of the three platoons that give them a certain pride in being identified with their own group. While some legitimate criticism of “the way things are done on the other shift” became evident, all three shifts tended to agree that the other two worked well, but there was no uniformity among the three ways of doing business in the Fire Department.
8. ***Participation in Regional Specialty Teams*** – The City of Sylvania has significant participation by its members in local teams such as:
 - a. Regional Hazardous Materials Team
 - b. Regional Urban Search and Rescue TeamsThis means that The City of Sylvania has local expertise in these key fields readily available, and also enjoys a direct link if the full resources of these specialty teams are ever needed.
9. ***Working Relationship With the Police*** - Good rapport is evident among members of the Township Fire Department and both the City of Sylvania Police Department and the Township Police Department.

AREAS NEEDING ATTENTION

1. ***Inability to control the condition of the Medic Units*** – Since these vehicles belong to Lucas County, and perform the lion’s share of Advance Life Support (ALS) duties, often making many runs to area hospitals, it is understandable that they will wear out more rapidly than the fire vehicles which are used less frequently and which make shorter distance responses when they are used. Attention to their condition over time is warranted but cannot be controlled by the fire department.

2. ***Individual Training Sessions*** - While the overall *Training Program* was considered to be of high quality in Sylvania, *Individual Training Sessions* leave something to be desired in the eyes of many of the rank-and-file. Most firefighters are anxious to participate in training if quality outlines are available, instructors are prepared and anxious to put on a first class program. Interest will quickly wane when those eager to learn see only a sub-standard performance by a given training instructor. This is a universal problem, and one not easily solved. Individual members of the fire department could, however, be asked to contribute to the training process by taking on specialty subjects with which they would become familiar thus expanding the base of instructors and allowing numerous people to contribute to the training mission.
3. ***Inconsistent response from the On-Call Personnel*** - As Fire Departments are moving away from reliance on on-call people and more toward either full-time or paid in-station personnel, less reliance can be placed on the ability of volunteers to respond from home. All fire stations have additional equipment in station that can be staffed by later arriving volunteers, and brought to the scene, thus eliminating this difficulty. If the Township fire department continues its move toward additional full-time personnel, this problem will drift into insignificance.
4. ***Physical Facilities***. While the Fire Stations carry a proud history and tradition, several were built during the volunteer era when overnight accommodations and extended stays by firefighters were not necessary. They have outlived their functionality and need to be replaced or upgraded so as to provide safe and healthy working environment. This need is currently being addressed by Township officials.
5. ***Inadequate Staffing***. Creative ways need to be employed to bolster the staffing levels in the city/township area. The layoffs of three full-time personnel has caused a pinch, but later we will see how communities can only staff what is affordable, not what would be nice to have.
6. ***Internal Communication***. Every organization large and small can use an improvement in communication. Good efforts have been made by Chief s Eisel and Kowalski but additional improvement could be made using such techniques as morning briefings, which link headquarters to outlying stations via telephone.
7. ***An aging Fire Equipment Fleet*** – By taking advantage of some refurbishing, the Sylvania Fire Department could spread its capital investment for fire apparatus across several pieces simultaneously, maintaining a relatively modern force. While the merits of purchasing equipment versus refurbishing could be debated, and the subject of an entirely different report, practices employed by Sylvania – even though criticized by some members of the rank-and-file -- do seem to have worked out well.



Photo #5: Staffing is bolstered at this alarm to the Rosary Care Center by two Sylvania members staffing the Lucas County paramedic unit.

DISPATCHING

Currently fire and emergency medical services are dispatched from a central facility where a team of dispatch personnel are on duty. There would be little difficulty in transferring dispatch responsibilities for a new city fire department to the existing Sylvania City Police Dispatching Center. There would likely be the cost for one additional dispatcher on duty 24 hours a day. On a 40 hour per week basis and allowing for vacations, holidays, sick time, etc. this would require 5 personnel. Allowing for some overlap of duties with the police it is likely that the actual number of dispatchers could be reduced.

LEGAL CONSIDERATIONS

Legal concerns are always legitimate, and sometimes worrisome. The City elected officials should be reassured that they are not the first to have faced similar fire and EMS protection changes. Options are available, and it takes time for communities to sort through the options, with varying benefits and drawbacks. There is, however, no need to “re-invent the wheel”. Other communities have gone down the same paths that Sylvania now faces, and the City can capitalize on their knowledge.

The consultant has on file a letter from the firm Katzman, Logan, Halper, and Bennett which indicates that the actual legal fees involved in the creation of a joint fire district for Deer Park and Silverton near Cincinnati amounted to \$12,241.

Although Sylvania is in an excellent position of strength regarding the Township it can take steps to insure that it assembles the necessary detailed planning needed to form its own fire rescue department. The law firm of Katzman, Logan, Halper, and Bennett has also provided additional, helpful information for the City, which is contained in **Appendix 2**. It relates to formation (and therefore dissolution) of a Joint Fire District.

It is quite likely that a judge overseeing a separation would award to the city some portion of the fire department assets, based on one or more of the following factors. A) population, B) tax valuation, C) fire station distribution. **Table 2** below shows how these various factors would compute in a separation of assets.

Table 2
Possible factors to consider in the separation of assets

SEPARATION OF ASSETS		
Separation Factor	City's Portion	Township's Portion
Population	19,000 – 41.5%	26,000 – 58.5%
Tax Valuation	33%	67%
Number of Fire Stations	1 – 25%	3 – 75%

This or some equation utilizing these factors could be used so that both parties would agree on a separation of assets, with each department maintaining a minimum amount of equipment and facilities necessary to deliver fire and emergency medical protection to their respective communities.

In light of the fact that the major investment in a fire department is personnel, with approximately 90% of an operating budget going to wages, pension contributions, and fringe benefits, it would not be necessary for the City of Sylvania to acquire any of the existing rolling stock or equipment from the township department to go into business. In light of the fact that the disposition of assets could be tied up in litigation the city should be prepared to launch its own department with new, used, or leased equipment if necessary. Without receiving any equipment from the township, the option still remains financially viable for the city.

NEW OPPORTUNITIES

A study has been prepared by the University of Toledo outlining factors involved with the merger of Sylvania City with Sylvania Township. Already the two communities share a common name and in many ways a common community identity. The common fire department which has long served both communities is a very vivid example of this shared identity. Should such a merger ultimately be approved by voters in both communities then the concept of a separate fire rescue department becomes moot. Advantages to the township would include reduction in property taxes more than offsetting the payroll taxes. The benefits to the city would include an enhanced payroll tax base, likely at the expense of other cities such as Toledo and Maumee.

If it is true that Sylvania Township and Sylvania City fire departments would have to work together and jointly respond to many serious incidents, why then would it make sense to consider separation in the first place? The answer to the City is that they could enjoy the best of both worlds by having depth and resources and by having the identity of its own fire service agency with the ability to exercise direct quality control and the ability to start a new organization unencumbered by past practice. For example, the City would have the ability to use part-time firefighters, individuals drawing part-time wages without fringe benefits and pension contributions, an efficient practice which is not used extensively in the greater Toledo/Sylvania area. Also the availability of volunteers for depth could be a viability resource for the city. These and similar new ideas could be promoted and used effectively in a new agency.



Photo #6: The nearby Flower Hospital provides quality care for patients and affords quick turnarounds for Medic units.

Nothing from the history of Sylvania indicates how the formation of the fire department was legally established. It is known that at one time it was under city control and then switched to the township. A textbook by Gaye Gindy provides an interesting narrative history that stops short of providing the legal origins of the fire department.

If the City of Sylvania does in fact create its own fire agency one single station facility, centrally located, would be able to provide immediate response and would be able to handle most routine emergencies without assistance. Like all fire departments, however, it will rely adjacent departments for serious structure fires, multiple emergencies and escalating or prolonged events.

Another alternative would be to have two stations, a central station in the vicinity of Monroe and Main St. and a second satellite station to the southwest.

FIRE STATION CONSTRUCTION COSTS

Nothing will provide identity to a community more than fixed facilities. The character and style will have a lasting impact, and the identity of the community is often reflected in the perception of their facilities.

A map of Sylvania City and Township is provided in **Appendix 3**. The map identifies with red dots the actual existing fire station locations. Also on the map are two blue dots representing a possible two-station model for the city. The irregular common border shows the sensibility of the City and Township to cooperate and mutually respond for each other when a more proximate station is available

Although the location of the existing Station 1 in the city is by itself suitable for most of the existing City, the utilization of time/distance analysis and geographic projections of the proposed expanded limits for the City of Sylvania could further determine where the second station would have to be located.

As Fire Department and City Officials deliberate on proper fire and EMS protection levels, they often want to find some *measurable* quantitative standard that can be applied in their communities. An example would be:

“We want every residence and business establishment inside Sylvania to be within 3 minutes of a responding engine company or a transporting EMS unit.”

Even in this case, however, the standard breaks down as soon as one company is already busy on one emergency when a second emergency occurs in the same area. This necessitates a more lengthy response from another unit. Hence, the decision regarding quantity of fire department companies and emergency medical service units remains fairly subjective, despite the best efforts at quantifying it.

Fire station replacement is not, however, dependent only upon the age of existing structures but is a decision involving many factors and variables. Many larger communities can afford to sell fire stations, which are located in prime commercial zones, and build a new station from the proceeds with little or no additional cost. Sylvania might be able to trade prime real estate to effect the optimal positioning of a proposed City fire rescue station. Fire station location is predicated ideally upon response times and service to the community.



Photo #7: The fire department has outgrown Station No. 4 in the heart of Sylvania City. No drive-through option.

When the cost of a station is plotted next to the cost of the personnel who will staff that station over its lifetime, the investment of the building becomes relatively insignificant. For example, consider a new station for the City of Sylvania at a cost of \$3 million. While this may seem to be a major investment, if the building will last 50 years the cost per year on a straight-line basis is figured as follows:

$$3 \text{ million} \div 50 = \$60,000/ \text{ year}$$

Theoretically, in Sylvania the building could conservatively accommodate the following:

- Chief
 - 3 District Chiefs
 - Administrative Assistant
 - 3 Lieutenants
 - 12 Firefighters (4 per shift)
 - Civilian Inspector
- } **TOTAL**
 } **21**

Table 3 below shows how a wage and fringe package of \$67,000 would grow at an annual appreciation of 5% over the next twenty years. For ease of calculations, we could conservatively say that 21 persons averaging \$110,750 would cost an average of \$2,325,750 per year while the building is costing \$60,000. As the Sylvania Station continues its life cycle over 60 to 100 years, its cost is dwarfed by personnel costs that would continue to accelerate. Hence, it makes sense to *optimally locate* a station, if the service delivery from this labor-intensive work force can be better utilized for the community, in a prime location. Also it makes no sense to cut corners on construction costs.

TABLE 3

\$67,000 WAGE & FRINGE BENEFITS GROWING @ 5% ANNUALLY

Year	Salary & Fringes	Year	Salary & Fringes
2007	67, 000	2017	109, 141
2008	70, 354	2018	114, 598
2009	73, 872	2019	120, 328
2010	77,565	2020	126, 344
2011	81, 443	2021	132, 661
2012	85, 515	2022	139,294
2013	89, 790	2023	146,259
2014	94, 280	2024	153,572
2015	98, 994	2025	161,250
2016	103, 944	2026	169,391
		Approx. Avg.	110,750

Likewise, selecting a site because the City owns it is not necessarily a good investment, especially if non-optimal locations result in higher response times.

LAND/ACREAGE

Generally speaking, fire station facilities require 1 ½ to 2 acres of property for proper layout and apparatus maneuverability.

LOCATION

These facilities should be located in an area that is best suited for responses to call volumes and target areas, located in an area for best accessibility, yet located off primary routes of travel.

Facilities are preferably are not on or near immediate intersection corners to eliminate access problems that conflict with traffic patterns, unless they are at the extreme end of the property, away from the intersection.

The consultant studied the borders and the possibility of the city growing and therefore possibly outgrowing the ability to function with a single station. It appears that any growth in the city due to annexation in the future would be to the west or southwest. Therefore should a second station ever be needed the first station's location would not need to be changed and a second station southwest from the city could eventually be considered. This is not eminent and does permit the city to make a significant capital investment in a new facility closer to the heart of the existing City of Sylvania borders.

The City of Sylvania will be facing a need for a fire station which could be a real crown jewel for the City. It should be committed to the construction of a new facility in light of the structural problems with the existing Station #1. This would provide the opportunity to not only enhance fire rescue services by providing a more user-friendly building but would allow the city to incorporate new features unavailable in the existing structure. For example, a state-of-the art training room could serve the following two purposes.

- Enhance the knowledge in technical skill of the firefighters and emergency medical personnel on duty by providing a comfortable environment that would be inductive to learning.
- The training room could double as a community meeting room for civic groups, youth organizations, and other non-profit/philanthropic organizations within the city.

Three alternatives present themselves for a central station. This consultant has reviewed the geographical boundaries of the city, the primary roads for response, and other factors pertinent to fire and emergency medical equipment deployment. The conclusion is that a station in the vicinity of the existing Station 1 best serves the needs of the city both now and in the future. Should a second station be needed more toward the southwest at some future date when geographical growth would require this there would still be no need to relocate Station 1.

The three alternatives for a location would be:

- Reconstruct or rebuild Station 1. The Cole +Russell architectural study indicates that Station 1 should indeed be replaced and indicates that the existing location is not adequate for reconstruction.
- Alternative two would be a lot next to the existing Administration Building and west of the railroad tracks.
- The third alternative is a station west of the Burnham Building on Monroe Street. The photos below show these alternative site locations.

The consultant feels that either of the two latter sites would be suitable locations for a fire station, particularly if a drive-through capability is designed into the structure.



Photo #8: Possible site for a new station in the vicinity of the Burnham Bldg.



Photo #9: Possible site for a new station adjacent to the City Administration Building.

STYLE/LAYOUT

The overall layout and orientation of the facility is important to facilitate the rapid egress of emergency equipment. Drive-through bays are becoming increasingly more important for egress, reduced wear and tear on vehicles, as well as for improving visibility, and reducing the hazard of stopping traffic and backing apparatus with personnel present.

SQUARE FOOTAGE REQUIREMENTS

Although square footage requirements vary with the type of department and personnel needs, adequate space is critical to minimizing the need to expand unnecessarily in the future.

ESTIMATED COSTS

Fire station facilities are typically in the \$125-\$145 per square foot range. Pre-fabricated facilities can cost much less, and provide low utility costs due to high insulation values. These types of Morton or Butler buildings now have attractive facades that blend well within the surrounding neighborhood.



Photo #10: Morton Building used for a Fire Station in Hamilton Township, Warren County Ohio, built for approximately \$850,000



**Photo # 11 and 12: Fire Stations built in Blue Ash, Ohio and Cuyahoga Falls, Ohio
in the \$3.5 to \$4.5 million range depending on options.
Designs by *Cole + Russell*®**

Financing for projects is only as limited as the imagination, and the source. Facilities can be purchased outright, financed via note, paid for under Tax Incremental Financing (TIF funding) or other special enterprise zone funding tool, by special loans, via lease, or other specialized options such as “turnkey” projects such as build, lease buy-back options.

Tax Incremental Financing (TIF funding) is best summarized by describing the borrowing of future tax revenue from enterprise zones or TIF districts to build current infrastructure needs that will cause additional growth and an expanded future tax base.

FACILITY CONSTRUCTION OPTIONS

An article on fire station construction tips that was written by a member of the Kramer consulting firm, and published at firechief.com has been included in **Appendix 4**. Also, a written guide designed to assist public officials in complying with building design processes has been included in the **Appendix 5**.

DESIGN SELECTION PROCESS

A Request For Qualifications (RFQ) can be made to short-list architectural firms that have completed similar work, with similar project quality.

CONTRACTOR BIDDING

After plans have been developed by the selected firm, a Request For Proposals (RFP) can be published to attract bidders for the project. The architectural firm can be quite helpful in this process, as timing of the bid can substantially reduce the cost of the project. Also, be aware that Ohio utilizes multiple primes bidding, which reduces the leverage of the general contractor against other trades, and instead transfers that leverage to the project owner. The architects can provide many helpful suggestions for the process, as well as for the building design.

TRAINING CAPABILITIES

Although much of the training that is done by firefighters can be handled in a classroom setting, there is still a need for physical facilities where ladder evolutions, forcible entry and live fire training can occur. The City of Sylvania should design at least a minimal training facility as part of a new fire station. If nothing else, interior stairways, mezzanine design, and exterior walls that can be laddered are a must. This would accommodate most hands-on training such as hose evolution, approach tactics, etc. It would not seem economically feasible to have a live fire training facility within the City of Sylvania. On an annual basis the firefighters could utilize on some contract basis, or perhaps even on a gratis basis, adjacent facilities. The City of Toledo owns a facility to the west of Sylvania which would be available, and the township has a training facility. It would be recommended that when specialized training is needed that cannot be done within the City of Sylvania these other facilities can be used.



Photo #13: Training capability built into a fire station. Design by Cole + Russell®

If the above principles are kept in mind that most of the training will be done by crews who are already on duty and available for response within the city. Only the very specialized events such as large fire training would have to take place externally and therefore require overtime compensation.

ENVIRONMENTAL ASSESSMENT

Information and sample quotes of environmental analysis costs have been provided in **Appendix 6**. These types of analysis include Phase I Environmental Analysis, and rarely need further Phase II Environmental Analysis, or Phase III Environmental Analysis.

ADDITIONAL CONSTRUCTION COSTS

Certain fees will likely not be included in the construction costs. These may include permit fees, which are generally low for governmental agencies, as well as water and sewer tap fees. A sample building permit is included as **Appendix 7**. A request for waiver of water and sewer tap fees has been included in the **Appendix 8**. These are often quite remarkable, and may be waived.

Sylvania leaders are encouraged to nurture cooperative ventures with other surrounding fire agencies, so that the excellent response from a central Sylvania station can be bolstered with depth from surrounding departments.



Photo #14: Training room in a fire station which can double as a meeting room for community groups. Design by *Cole + Russell*®

APPARATUS AND EQUIPMENT COSTS

APPARATUS-PURCHASED (FIXED COST)

New apparatus can be easily purchased for a new fire department. Vendors often have demonstrator units available, although they tend to have excess wear and tear, high mileage, and won't meet every need of the department. Apparatus are frequently advertised, and availability of the proper type and style should not be a problem. Used, reliable apparatus are plentiful, particularly if they were just downgraded from active service. This equipment is usually also available at reasonable, reduced costs.

The life expectancy of apparatus varies greatly based on the annual mileage, wear and tear, and active engine hours. Generally, well-maintained fire engines last about 20 years. Often, the steel cabinetry will deteriorate from rust before the engine and pump reach life expectancy. Stainless steel cabinetry does minimize rust and extend life expectancy, although the cost incurred may not be worth the time benefit. Ambulances can also have good life expectancies, based on similar factors. The patient modules will often outlast a chassis, although very few miles would be expected from a smaller community with fewer calls. Again, used apparatus can be quite functional, with a comparatively limited investment.

New staff vehicles can be purchased using State bid pricing, to help keep costs down. Used staff vehicles are often acquired from downgraded police cruisers, and may not even require radio and emergency warning equipment removal.



Photo #15: Firefighter demonstrating the medic transport feature in this combination pumper-ambulance from Sycamore Township in Hamilton County, Ohio



Photo # 16: A combination pumper-ambulance would permit fire crews to deliver BLS patients to Flower hospital on way back to fire station.

APPARATUS-FINANCED (LIMITED LENGTH/DECREASING)

Financing and apparatus purchases must be considered carefully. Although no-interest grants, or at minimum low-interest loans, may be available, purchasing fire and medical equipment is still a significant expense. Used apparatus will likely lose their value much more slowly than new equipment, so apparatus in good working order will not cause such a loss in value as a new apparatus. This may be important if re-sale is necessary for any reason. Notes that are secured for these apparatus purchases will have a decreasing principal, so consistent budgeting figures will allow for increased savings over time.

APPARATUS LEASED (QUASI-PERMANENT/FIXED AMOUNT)

Another option, which is gaining significant popularity, is the leasing of both old and new apparatus. The cost is spread over time, and the leased vehicle can be returned after the term for a replacement with lower maintenance costs. Vendor availability is usually not an issue, as most vendors and banks provide leasing options. Many advertisements mention both purchase and lease options. Cities reportedly have the added benefit of not being required to encumber the total lease amounts, making the lease option more attractive.

The cost of new apparatus can look formidable but used equipment can be quite serviceable. Someone’s front line pumper is suddenly available at a “yard sale” price when a new pumper is delivered to replace it. **Table 4** below shows two extremes; all new, and minimally acceptable used equipment. This fleet of five vehicles would be adequate for the City of Sylvania whether operating from one or two stations.

**Table 4
City of Sylvania Fire Department- Apparatus start-up costs**

Apparatus & Vehicle costs to begin operations		
	New	Used
Quint	\$650,000	\$125,000
Rescue Pumper	350,000	40,000
Ambulance	120,000	20,000
Two staff cars	50,000	10,000
TOTAL	<u>\$1,170,000</u>	<u>\$195,000</u>

PERSONNEL COSTS

START-UP COSTS

Anytime a community decides to go into the fire fighting/emergency medical services business, there are some one-time start-up costs which the community must be able to bear. Assuming that the fire department will consist of six fire fighters (Eight including the Lucas County ALS unit) plus supervisory personnel we will consider the initial start up of the fire department personnel costs.

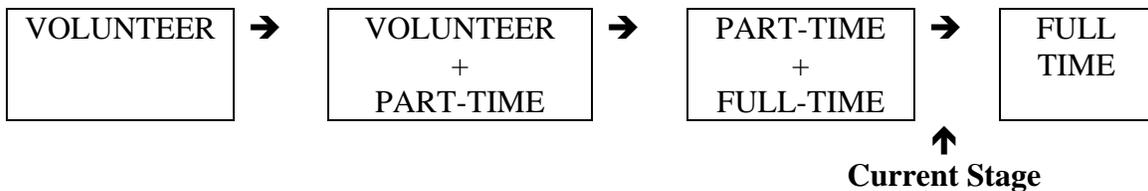
GENERAL STAFFING COST INFORMATION

The cost of firefighters is high and will grow higher in the future. Fire Chief Steve Ashbrock of the Maderia-Indian Hill Fire Department in suburban Cincinnati has completed a study which shows that the fire service in suburban Ohio is in the later stages of a transformation model as shown in **Figure 4**. Chief Ashbrock points out that more and more departments are competing for available part-time personnel. As a result, their average hourly wages are rising and part-time personnel are becoming increasingly harder to recruit and retain. This seems to be similar to existing conditions in the Lucas County area. It is interesting to note, however, that all three categories of personnel – full paid, part-time paid, and volunteer – could exist simultaneously in Sylvania.

Communities typically follow a staffing system progression that frequently parallels the growth, needs, and finances of their communities. This spectrum of staffing utilization is broken down in **Figure 4**.

FIGURE 4

EVOLUTION OF FIRE SERVICE IN SUBURBAN SOUTHERN OHIO



The paragraphs which follow list the various staffing options.

FULL-TIME ONLY

Departments with high call volumes and substantial potential risks typically rely solely on full-time staffing. They can be assured of a minimum staffing threshold, although the necessary funding is significant.

Either full-time or part-time employees in the City of Sylvania could be hired from the ranks of the dedicated area firefighters. Later, full-time Sylvania firefighters could be hired from part-time ranks, as the City grows. This is viewed as a commendable process for the following two reasons:

1. The qualities and work capabilities of the individual employees should be well known to the City of Sylvania, thus ensuring quality in the work force.
2. An incentive is built into the part-time system, as members will contribute quality and quantity to the work of the City of Sylvania in an anticipation of furthering their chances for selection to the full-time ranks.

COMBINATION FULL-TIME AND PART-TIME

Most departments try to balance their staffing needs with the most cost-effective approach. Decisions to balance these competing interests frequently result in combination staffing, where a base amount of full-time personnel is supplemented with a percentage of part-time staff. With the substantial cost of pension contributions and health insurance for full-time employees, part-time options look enticing. Although the documented financial cost is notably lower, some would argue that other challenges offset the financial gain

COMBINATION FULL-TIME, PART-TIME, AND ON-CALL-PAID

The combination department is sometimes blended with another variety of staffing. Personnel who are on-call, or standing by for calls, but are only paid “by the call” and not for time spent, fall into this category. This can be beneficial in communities that have citizens with differing levels of participatory interest. You can have spectrum of people involved. With that, however, are dramatic challenges with differing expectations among the same employee pool. Meeting the needs of one group, while struggling with others, will result in concerns of favoritism. Training requirements are often difficult to maintain in these types of organizations, because of these varying needs.

COMBINATION FULL-TIME AND ON-CALL-PAID

This variety of system is probably more rare, because it is composed of staffing types from opposite ends of the spectrum. On-call-paid employees tend to feel unappreciated or underutilized when working with full-time personnel who have more opportunity to keep up on their skills. Also, the IRS, under federal law, prohibits payment to personnel on an on-call basis during their off time, since employees providing the same service cannot be paid at differing levels if they are required to respond. Also, employees who are required to respond while off-duty, but who are considered “on-call,” must be compensated at time and a half, according to the Fair Labor Standards Act (FLSA).

PART-TIME ONLY

Many organizations are comprised of only part-time personnel. Costs are kept low because limited benefits are provided; yet on-duty crews are scheduled around the clock.

Concern has increased in the Cincinnati region in the past few years, related to the decreasing loyalty and reliability of part-time staff. Part-time employees will suddenly be unavailable since they may defect to another department, simply because they pay more. This can undermine the stability of the service provided to a community. It is also very difficult to get some part-time employees to work holidays unless substantial incentives are offered, and service must be provided 365 days per year.

COMBINATION PART-TIME AND ON-CALL-PAID

Departments in transition often utilize this staffing system. Departments with personnel who are paid by the call, and are mistakenly also called “volunteers”, also staff with a baseline of part-time personnel to assure a minimum staffing threshold. Again, the financial benefits in using such a system will be offset with challenges such as meeting stringent training requirements for personnel (particularly with EMS re-certifications).

COMBINATION PART-TIME AND VOLUNTEER

This type of staffing system has been used extensively in the past, although training requirements have placed a substantial burden on volunteer personnel. Although most part-time personnel do not live in the community they serve, small communities with strong identity and civic-minded citizens often benefit from the loyalty of their volunteer staff. A returning interest in staffing with local residents is being realized as communities struggle with maintaining their staffing levels. Competitive pay and various benefits are no longer guarantees to retention of part-time employees. Initial community loyalty among part-time personnel seems to create a positive draw, although it also eventually gives way to primarily financial and full-time employment motivations.

COMBINATION ON-CALL-PAID AND VOLUNTEER

This type of staffing system uses both paid-per-call personnel, and volunteers. It is more common on departments with limited call volumes. There are usually fewer staff challenges with this type of system because the two types used are very similar. Financial jealousy is usually not a factor in personnel issues. This system can be reliable, as long as the activity level is enough to maintain interest of employees, and training is maintained.

ON-CALL-PAID ONLY

This system has worked effectively in many organizations, and can be cost effective. Since personnel are not typically in the fire station when calls are dispatched, response time will likely be negatively affected. For both fire and emergency medical calls, response time is critical to successful service outcomes. Not having some form of on-duty staff in the stations will result in decreased quality of service.

VOLUNTEER ONLY

Many departments across our Country are successfully staffed entirely by volunteer personnel. In this day and age of increased training requirements and households with multiple jobs, less time is usually committed toward volunteer service. Since financial benefits are not usually a motivating factor, those who do participate at this level are very dedicated and loyal to their department and community. Pride and internal self-worth are often realized. Challenges with this system include thin staffing during daytime hours, and increased response times.

(*NONE OF THESE SYSTEMS MENTION SUPPLEMENTATION WITH AUTOMATIC MUTUAL AID RESPONSES (AMARS) OR REGULAR MUTUAL AID SERVICE, WHICH IS ALSO AVAILABLE. THESE ARE ONLY AVAILABLE WHEN IN EQUAL RECIPROCITY, AND THIS CRITICAL BACK-UP RESOURCE SHOULD NOT BE TAKEN FOR GRANTED).

SYLVANIA’S BEST OPTION;

The City of Sylvania will likely have to rely on a combination of full-time and part-time personnel. Volunteers or “Paid on Call” personnel would provide a great reserve at little cost. To retain sufficient part-time firefighters the City of Sylvania will have to pay about \$14.00 per hour. Using this figure, the cost of staffing one position with *part-time* personnel is calculated as follows:

PART-TIME: 365 Days x 24 hours x \$14 = \$122,640 per annum

Turning to full time personnel, it requires approximately 4 personnel to staff one position, and the cost of each *full-time* firefighter is calculated as follows:

Wages:	\$52,562
Pension contribution & taxes	16,294
Health care	<u>13,000</u>
TOTAL	\$81,857

FULL TIME: 4 x \$81,857 = \$327,428 per annum

Clearly, full-time personnel are more than twice as expensive as part-time personnel, if only staffing costs are figured without concern for “value”. **Table 5** on the next page shows these comparative costs for a complement of 6 on-duty personnel, 24 hours a day.

**TABLE 5
COSTS TO MAINTAIN SIX (6) ON-DUTY
FIREFIGHTING POSITIONS 24 HOURS A DAY ***

A	B	C
FULL TIME @ \$327,428	PART-TIME @\$122,640	TOTAL FOR 6
6: \$1,964,568	0: \$0	\$1,964,568
5: \$1,637,140	1: \$122,640	\$1,759,780
4: \$1,309,712	2: \$245,280	\$1,554,992
3: \$982,284	3: \$367,920	\$1,350,204
2: \$654,856	4: \$490,560	\$1,145,416
1: \$327,428	5: \$613,200	\$940,628
0: \$0	6: \$735,840	\$735,840

* A plus B equals C

Based on the above calculations, the cost of placing part-time personnel in a fire station is considerably less than full-time. These calculations consider, however, only staffing costs irrespective of quality, additional complexities, efficiency, and redundant expenses due to the need for additional uniforms, turnout gear, training, and other associated items, which are multiplied several times across a part-time personnel slot. As noted above, staffing costs will be the most significant expense in providing fire protection. This is even more significant than facility and apparatus costs, because the cumulative cost over time is much more than the one-time cost of facilities or apparatus. These costs tend to be permanent and increasing, rather than a one-time expense, even if spread over a multi-year term

To the above figures which calculate the cost of on-duty personnel, whether full-time or part-time must be added the cost of others who would almost certainly have to be full-time. This category includes a full-time chief, a full-time shift commander (x4), a full-time inspector, and a full-time clerk/office manager. See **Table 6** below.

**TABLE 6
COSTS TO MAINTAIN REQUIRED FULL-TIME POSITIONS**

Required Full-time positions	Position	Total Compensation
	Chief	\$110,000
	Shift Commander 1	\$95,000
	Inspector	\$90,000
	Clerk/Office manager	\$55,000
	TOTAL:	\$635,000

Hence the personnel costs for the City of Sylvania Fire Department would range between \$635,000 + 735,840 and \$635,000 + 1,964,568, i.e., between \$1,370,840 and \$2,599,568 depending on the number of part-time personnel employed.



Photo #17: Sylvania Township's western station

NATIONAL STAFFING TRENDS

Several years ago, **Fire Engineering**, one of the most respected periodicals in the firefighting profession, assembled valuable statistical data regarding the number of firefighters on duty in the North Central Region. This includes seven states including Ohio. Key excerpts from this publication entitled **Fire Engineering – Directory of Municipal Fire Departments** are included with permission in **Appendix 9**: Among the information provided are the following statistics:

- Trends in Fire Departments
- Employees per 1000 population
- Full-time Paid personnel, on-duty
- Minimum Staffing Requirements
- Minimum Crew per apparatus

Also, additional tables provide salary and benefit information. According to this **Fire Engineering** Report, one statistic, which has remained rather constant, is the average number of fire department employees per 1000 population. There has been a gradual evolution throughout the United States toward Internal Fire Protection (“Era II”), stronger building and fire codes, and more efforts toward fire prevention and code enforcement. As a result, the frequency and severity of fires have declined nationally. Sylvania has mirrored this trend.

Since the number of firefighters on-duty has remained rather constant, despite a reduction in fire protection demands, they have taken on new duties primarily in the field of Emergency Medical Services (EMS), but also in Hazardous Materials Mitigation, Technical Rescue, and other fields. Thus is true nationally and is also true for the Sylvania Township/City area.

The **Fire Engineering** Report shows that the number of firefighters per 1000 has consistently remained at about 1.6 since 1984. Using 19,000 as the base population for The City of Sylvania, the number of full-time firefighters would be $1.6 \times 19 = 30.4$. A close approximation of an on-duty force would be this number divided by 4, or approximately 8. Almost all fire departments today provide both fire protection and emergency medical services, so that this average would include personnel for both of these functions. With the Lucas County paramedic unit, Sylvania would be over the average with eight (8) on duty; without the Lucas County unit, the City would be below average with six (6) on duty.

The Consultant further analyzed fire departments in jurisdictions similar to The City of Sylvania. All reporting fire departments from the **Fire Engineering** Report with populations in the range of 15,500 to 19,500 were selected and listed in **Table 7** on the next three pages for a comparative analysis with The City of Sylvania.



Photo #18: “Staffing levels decided at Information Central”

Table 7

**NORTH CENTRAL REGION
COMMUNITIES, WITH POPULATIONS
15,500 TO 19,500**

COMMUNITIES IN ILLINOIS	POP	Sq. Miles Area	Type Of Dept.	Number of Officers	FF / EMS Personnel	Number of Stations
Brookfield	19,000	3.1	Comb.	4	30	2
Edwardsville	16,000	20	Comb.	4	49	2
Geneva	16,000	13	Comb.	10	57	2
Hinsdale	17,000	5	Comb.	5	25	1
LaGrange Village	15,500	2.4	Comb.	7	21	1
Lake Forest	17,800	18	Comb.	8	28	2
Lincoln	15,800	3	Paid	11	23	1
Love's Park	15,500	==	Vol.	14	68	2
Macomb	19,000	12	Paid	8	13	2
Mt. Vernon	17,000	25	Comb.	12	31	4
Winnetka	15,500	5.5	Paid	8	15	1

COMMUNITIES IN INDIANA	POP	Sq. Miles Area	Type Of Dept.	Number of Officers	FF / EMS Personnel	Number of Stations
Griffith	17,916	7	Vol.	11	43	3
Sellersburg	17,000	77	Comb.	25	70	5
Shelbyville	18,000	409	Paid	15	47	3
Yorktown/ Mt. Pleasant Twp. FD	18,000	35	Vol.	8	40	1

COMMUNITIES IN IOWA	POP	Sq. Miles Area	Type Of Dept.	Number of Officers	FF / EMS Personnel	Number of Stations
Baxter	18,000	97	Vol.	6	20	1
Indianola	19,000	125	Comb.	9	50	1
West Burlington	18,000	75	Vol.	9	27	1

Table 7 (Cont'd)

**NORTH CENTRAL REGION
COMMUNITIES, WITH POPULATIONS
15,500 TO 19,500**

COMMUNITIES IN MICHIGAN	POP	Sq. Miles Area	Type Of Dept.	Number of Officers	FF / EMS Personnel	Number of Stations
Benton Charter Twp.	18,000	40	Comb.	10	30	3
Coldwater	17,000	72	Comb.	7	11	1
Fenton	17,000	48	Vol.	6	28	1
Flushing	19,000	36	Vol.	7	23	1
Hamtramck	18,000	2	Paid	11	27	1
Northville Twp.	17,283	17.8	Comb.	3	29	3
Pentwater	17,000	36	Vol.	7	30	1
Traverse City	15,700	12	Paid	7	15	2
Wheatland Twp.	18,000	60	Vol.	3	23	1

COMMUNITIES IN MINNESOTA	POP	Sq. Miles Area	Type Of Dept.	Number of Officers	FF / EMS Personnel	Number of Stations
Albert Lea	18,329	11	Comb.	6	30	1
Fergus Falls	15,600	144	Comb.	8	38	1
Grand Rapids	18,400	310	Paid	5	25	2

COMMUNITIES IN OHIO	POP	Sq. Miles Area	Type Of Dept.	Number of Officers	FF / EMS Personnel	Number of Stations
Dover	16,500	36.3	Paid	4	11	1
Franklin Twp.	18,000	32	Comb.	5	33	2
Freemont	18,500	7.5	Vol.	8	18	2
Greenville	18,000	55	Paid	4	20	1
Miamisburg	18,000	9.3	Paid	7	26	2
Porter Twp.	17,000	22	Vol.	8	32	1
Vermilion	17,000	86	Paid	13	52	3
Wadsworth	18,926	25	Comb.	7	30	1
Warrensville Hts.	18,000	4	Paid	8	32	2
Worthington	17,493	4.1	Comb.	9	48	1

Table 7 (Cont'd)

**NORTH CENTRAL REGION
COMMUNITIES, WITH POPULATIONS
15,500 TO 19,500**

COMMUNITIES IN WISCONSIN	POP	Sq. Miles Area	Type Of Dept.	Number of Officers	FF / EMS Personnel	Number of Stations
Antigo	16,000	604	Comb.	7	43	1
Ashwaubenon Public Safety	17,000	10.5	Comb.	4	58	2
Cedarburg	17,000	30	Vol.	18	50	1
DePere	17,000	9	Comb.	9	36	2
Germantown	16,000	36	Comb.	12	50	1
Plover	17,000	130	Comb.	11	30	1
Wisconsin Rapids	18,900	15	Paid	8	24	2

<u>OVERALL</u>	POP	Sq. Miles Area	Type Of Dept.	Number of Officers	FF / EMS Personnel	Number of Stations
AVERAGE OF ALL ABOVE	17,354	27.86*	13 Paid 22 Comb. 12 Vol.	8.4	33.17	1.68

City of Sylvania	18,000	5.8	Comb	6	29**	1 -2
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*NOTE: Areas larger than 100 Square miles eliminated from this calculated average to eliminate skewed results which would have been generated by large unpopulated areas.

**NOTE: The figure of 29 represents a complement of all full-time personnel. If part-time personnel are used, this number increases even as costs decline.

These statistics provide an interesting basis for comparison between other existing fire departments serving similar-sized communities and a projected Sylvania City department.

STAFFING ALTERNATIVES

If Sylvania were to consider starting their own department, maintaining the current staffing level at the same level as the Sylvania Township department would not be necessary, since the call volume will be significantly less for both new entities and they are expected to bolster each other for serious or multiple emergency conditions. . Healthy cooperation with surrounding jurisdictions via mutual aid agreements, including Automatic Mutual Aid Responses (AMAR), will assure the City backup protection and supplemental manpower during “unusual disasters” that may occur on rare occasions.

Among the most routine of fires in the City of Sylvania would be a single-family dwelling. Staffing needs including mutual aid requirements are shown in **Figure 5**.

FIGURE 5
SINGLE FAMILY RESIDENTIAL HOUSE FIRE
 3,000 sq. ft. in kitchen/dining room, 25% involved = 250 gpm water flow

POSITION	ASSIGNMENT	STAFFING
Incident Commander	Coordinates all on scene operations (Company Officers run command until ranking officer arrives)	1
Pump Operator	Maintains water flow to attack crews and radio communications (For safety requirements can not be counted for backup)	1
Ventilation	Removes heat, toxic gases and smoke improving victim survivability and safer environment for fire crews.	2
Primary Search	Rapid discovery and removal from toxic environment insures highest possible chance for victim survivability without brain damage.	2
Fire Attack	Two 1 ¾” Lines @ 125 gpm each for adequate water flow	4
EMS	Renders immediate medical care to rescued victims or injured firefighters	2
SUB TOTAL		12
Rapid Intervention Team	(Rescues trapped/injured/lost firefighters)	2*
TOTAL		14

***2 Person Minimum**

The above is again, an “IDEAL” staffing configuration. When personnel are scarce, and/or when working fires are contained rapidly, some of these positions can be combined. Also, mutual aid companies often provide many of these positions. In Sylvania the volunteers can fill many of these slots but they need incentives to participate. The next section provides one option.

POINTS SYSTEM FOR SYLVANIA’S VOLUNTEERS

It is often difficult to match the fluctuating call volumes in smaller departments that pay per call with the available financial resources. Some months are very slow, while others such as springtime months are quite busy due to frequent storm-related calls.

A system is available for addressing this dilemma. The points system creates stability in financial expectations by utilizing a consistent funding level on a monthly basis. The budgeted amount paid to employees is divided based on participation points earned and tracked throughout the month. A pro-rated share of the budgeted amount is distributed to each employee, based on how many fire calls they made, the number of EMS calls they responded on, the frequency of training participation, etc. The monthly amount budgeted remains the same, but the amount paid per call will vary based on the number of runs. So if \$3,000 per month is allotted, only \$3,000 per month will be spent no matter how busy or slow the department activity. Employees recognize the need for financial consistency and will realize the fairness of the system.

Caution must be used not to reduce the monthly allotment, or the system will become self-defeating. A healthy amount of competition may also develop that instills more participation among employees. Once the employees confirm management consistency in paying lower pay-per-call during busy months and paying a higher amount per run during slow months, the system will be acceptable. This has been found to be extremely effective, as well as helpful in maintaining a budget in a smaller department.

COMPARATIVE STAFFING

Careful thought must be placed into determining the community’s minimum and normal staffing of fire and EMS personnel. This determination of staffing numbers will be based on the quality of service desired by community, the call volume, the type of staffing system selected, and the financial resources allocated to the staffing system. Typically in start-up departments, adjustments will need to be made by “tweaking” staffing levels to meet the needs of the community. Varying recommendations have been provided in the personnel sections of the budget appendices.

MUTUAL AID AND AUTOMATIC RESPONSE

We have noted that the City of Sylvania and Sylvania Township will be mutually dependent on each other for not only these types of serious emergencies, but also for routine coverage where either the city station is closer to township areas or where a township facility is closer to city properties.

In **Appendix 10** is a summary of an inter-jurisdictional agreement between the City of Toledo and the Village of Ottawa Hills. Here in a pre-designated zone the City of Toledo automatically responds with Ottawa Hills at the report of a structure fire in the Village, and in return Ottawa Hills provides immediate response at the report of a structure fire in the City of Toledo. This serves both communities well in that immediate depth and resources is dispatched without the need for either jurisdiction to summon resources through a “mutual aid” process incurring delay. Such zones could easily be created and should be encouraged leaving the fire officials in each jurisdiction to determine the best locations for such automatic response and the type of emergencies for which this should be pre-programmed.



Photo #19: Sylvania Township's station 2 to the south

RELEVANT NATIONAL STANDARDS:

NFPA 1500;1710

OSHA 2+2

The National Fire Protection Agency is a non-profit information collection center and internationally respected authority for the fire protection industry. This organization publishes standards which are excellent guidelines for municipal fire protection, and which are often adopted into law by reference. This report references several of the key NFPA Standards and shows their relevance to Sylvania.

The hiring of both full-time and part-time personnel is designed to assure that adequate staffing exists to provide fire and emergency medical protection to the community.

Objectively it can be shown that that The City of Sylvania Fire Department would provide adequate minimum fire protection for the community, in that it can usually comply with two standards which, although not mandatory are often used to determine the number of firefighters required immediately at emergency scenes:

- The National Fire Protection Association (NFPA) Standard 1500 recommends that a minimum of four persons be available on the fire scene before structural firefighting commences.
- The Federal Occupational Safety and Health Administration (OSHA) has determined that fire structures meet the definition of an IDLH (Immediately Dangerous To Life and Health) environment and therefore are subject to the “two in-two out – rule” meaning there must be a minimum two-person rescue team besides the crews committed to structural firefighting. Even though Ohio is not a public sector “OSHA State”, the Ohio Fire Chiefs have endorsed this standard.

See **Appendix 11** for relevant passages from NFPA 1500, and relevant information on the OSHA standard, from the Ohio Fire Chief’s Journal, both reprinted with permission. These standards show the number of firefighters necessary just to begin an operation. In a serious fire, the need for personnel escalates quickly.

With all fire units available, the City of Sylvania Fire Department would be able to meet the initial standards as outlined above, but must rely on mutual aid, like all departments its size, to provide additional depth to care for escalating needs at the scene of a major fire or emergency. When personnel are out of service due to their dual duty as EMS providers, this ability to adequately provide initial fire protection is compromised. The key is to maintain a cordial working relationship with nearby neighboring fire departments and these can be summoned quickly to bolster The City of Sylvania’s forces when they are stretched thin. The City of Sylvania, in turn, can reciprocate when needed.

Additional perspectives on ideal staffing can be found in the Fire Protection handbook published by the National Fire Protection Association (NFPA):

- The NFPA Fire Protection Handbook states that a single family residential structure fire requires not less than twelve (**12**) firefighters and one chief officer with two engines and one ladder, and a high-rise hotel/office building requires not less than twenty-four (**24**) firefighters and two chief officers with four engines and two ladders on the first alarm.
- In May 2002, the NFPA adopted two new related standards, #1710 and #1720. The former relates to primarily full-time fire departments, such as Sylvania and the latter refers to primarily volunteer departments. Among other requirements, these standard list “four” (4) persons as the minimum crew size on apparatus. At times if only six persons are on duty the City fire department will be unable to comply totally with this standard unless it waited for volunteers to fill an apparatus before responding. This in turn would compromise response times for the first units.

A fire/rescue department should strive for quick initial assistance to all residential and commercial areas of the Township. A less-touted provision of the expected 1710 and 1720 standards is the requirement for rapid response times. See **Appendix 12** for a copy of NFPA 1710

This consulting team feels that favorable response times insure more stability than larger crew sizes. Smaller communities such as Sylvania City can augment responses with AMAR (Automatic Mutual Aid Response) agreements, which summon mutual aid assistance immediately at the report of a fire. A new Sylvania Chief will find creative ways to cope with these standards, and similar requirements recommended at a national level, but a combined fire rescue force is needed to ensure optimal compliance in the future.



FINANCING THE FUTURE

The expected budget in the next few years should average \$6.5 million for the combined Sylvania Township/Sylvania City Fire Department is. This includes a 600,000 supplement from Lucas County to house and staff a paramedic ambulance company. The population is included in the **Table 8** below.

**Table 8
Population Distribution**

	POPULATION	PERCENTAGE
City of Sylvania	18,000	41%
Unincorporated Sylvania Township	26,000	59%
TOTAL:	44,000	100%

Based on the population figures above the City should be able to afford an operating budget of approximately 41% of \$6.5 million annually or \$2.665 million. With 90% of the funding going to staffing \$2,398,500 would be available to staff the Sylvania Township Department. This is consistent with our projected budget.

Future Staffing

Although there may be substantial costs involved in starting a new fire department, including the facility costs, the most significant investment by the City will be made in the area of staffing. The building cost may seem comparatively high, particularly because it is a “big ticket” item, but the staffing cost over time will certainly dwarf the one-time facility cost.

We strongly encourage the City not to short-change their residents by trying to shortcut adequate staffing. The best of intentions from healthy investment in apparatus and equipment can quickly evaporate during one significant incident with inadequate manpower. Several staffing options have been provided. Although staffing is the foundational element of the department, organizational structures vary and provide for several options in staffing structures. The hiring of both full-time and part-time personnel is designed to assure that adequate staffing exists to provide fire and emergency medical protection to the community. Increasing tax revenues and growing territory should afford the following numbers of line personnel on duty:

<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
6	6	6	8	8	10	10

These on-station numbers are adequate for the call volume of the company, since they do not include the 2 persons staffing the Lucas County paramedic unit. These numbers are particularly robust considering the staffing is likely from one station.

Many other departments provide three personnel on an engine company, and two personnel on an EMS transport vehicle per station (supervision may or may not be included). The fire company will experience multiple calls on occasion..

Based on the information presented so far in this report, a sample operating budget would be approximately as shown in **Table 9** below:

Table 9 City of Sylvania Fire-Rescue 2008 Operating Budget	
Category	Annual Budget
Wages and Compensation	\$1,739,211.12
Pension and Health insurance	\$353,952.74
Liability Insurance	\$40,000.00
Professional Services	\$22,700.00
Fire/EMS Training	\$20,000.00
Professional Affiliations	\$650.00
Operating Supplies	\$41,655.00
Apparatus and Equipment	
Maintenance	\$25,400.00
Tools and Equipment	\$33,158.82
Fire Prevention/Life Safety	\$3,876.00
Utilities and Other Expenses	\$40,400.00
Subtotal	\$2,321,003.68
Escrow/Carryover	\$573,667.90
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Total Annual Budget	\$2,894,671.58

PROPOSED FIRE INCOME TAX LEVIES

Currently a campaign is underway by a group of private citizens to put a 1.5 mill operating levy on the ballot for fire and emergency medical services throughout the Sylvania community. While this is unlikely to pass without the endorsement of City Council or the Board of Township Trustees, it does show that there is some support in the community for additional fire and EMS funding and a corresponding sentiment that the existing services are under-funded and inadequate.

These operating funds from the 1.5 mill levy would re-instate the personnel eliminated in January and re-instate the BLS (Basic Life Support) vehicle that was abandoned during the cutbacks.

DETERMINING RESOURCE NEEDS

At times, community leaders will say, “Tell us what we should have for fire and rescue protection, and we will find a way to pay for it.” Unfortunately, there is no easy answer, since it is virtually impossible to separate what a community *should have* and what is affordable. It is not feasible to separate a decision regarding the level of fire and rescue protection from economic and financial concerns, since the two are very much interrelated. Once a fundamental level of fire and emergency medical protection is in place in the City of Sylvania, each additional fire company or medical unit is of marginally less value than the previously added resource.

Simply stated, the level of fire and rescue protection must include “affordability.” An extreme example is found on some Native-American Indian Reservations here in the U.S.A. Fire protection consists of several lengths of rotting hose connected to a water main, in the hope that someone will put the hose to use in the event of a fire. They simply cannot afford anything more.

Another example of the interrelationship between budgeting and fire protection can be found in Norwood, Ohio. When the Chevrolet plant closed in the City of Norwood, it suddenly had one fire station, whereas prior to the closing of the plant, it had three. The citizens of Norwood saw an across-the-board reduction in all governmental services. At some point, fiscal responsibility imposes a level of fire and emergency medical protection that should not be exceeded.

With fire and rescue protection, it is easy to make decisions based on emotional arguments such as, “if the fire station saves one life, it will be worth it.” It may very well *not* be worth it if neglected streets (poor signaling, rough pavement, etc.) cause 2 or more traffic fatalities, or if an under-funded police agency leads to more deaths from violent crime. Even if one could guarantee that one *could* save a life by adding a fire or rescue unit, most members of society would still want to weigh this option against a “quality of life” factor. People want aesthetic beauty (parks, for example), and conveniences such as transportation. People are, as a society, willing to incur some risks to have this quality of life. Limited tax dollars need to be balanced among safety services and other City needs, especially in light of the fact that some public funds might be expended better elsewhere. Elected officials must keep all governmental services in a balance, and Sylvania City appears to have an excellent mix and balance of governmental services which would remain even with a funded City Fire Department.

If the City Council were to introduce a plan that would eliminate 100% of all highway fatalities in Sylvania, it would certainly be more than “saving one life”. Therefore, should it be adopted? The solution would be to have no vehicle travel more than 10 miles per hour on any road in the City. City of Sylvania residents would likely find this unacceptable. Society members are generally daring and are willing to incur safety risks including occasional accidental fatalities in exchange for mobility in life and aesthetic beauty in the surroundings.

If we were to put a fire station and a medic unit on every street in Sylvania, would it save one life? No doubt it would, but the price would be unpaved roads, a complete lack of any other basic services, and a populace taxed into poverty. Ultimately there comes a decision point where “*the right level of fire and rescue protection*” must logically include the cost, and the effect on other government services. There is no equation that will dictate the proper number of fire and rescue units and fire stations, unless leaders are also willing to factor in the monetary cost of providing these resources.

The quantity and quality of fire protection and emergency medical protection remain a subjective rather than an objective study with elected officials making their best judgment calls balancing safety and affordability.

INSURANCE SERVICES OFFICE (ISO)

Nationally the frequency and severity of fires are declining. Although fire suppression services are, in terms of total responses, becoming less frequent, they remain the most important services delivered by the fire department in terms of potential loss of lives and property.

The Sylvania Township has an above average ability to control fire as indicated by its favorable rating from the Insurance Services Office (ISO). This agency, which is administered under a coalition of the large insurance carriers throughout North America, performs audits of fire service delivery capabilities in communities on a regular basis.

Although *State Farm* and some other large insurance companies have discontinued using ISO ratings in favor of a “zip code based” rating system, the ISO rating scale remains the most widely accepted objective measure of fire protection.

The ISO conducts a thorough site visit to the community and analyzes fire stations, staffing levels, fire apparatus, equipment carried on apparatus, training records, water supply, and all the other component parts that affect the quality of fire service delivery. A ratings schedule has been prepared evaluating fire departments on a scale of 1, the very best to 10, the most deficient. The Sylvania Township is rated a #4 in its urbanized areas and #9 in a few areas without water mains.

Harry Hickey, Ph.D., a fire protection engineer from the University of Maryland, has published a 244-page manual listing a complex array of formulas and equations, which are used when ISO evaluates a jurisdiction for fire protection. An analysis of this manual was conducted to determine if more frequent use of fire company personnel to man squads (taking the first of either emergency, depending upon which comes first), would change the favorable ISO rating Sylvania now enjoys. Based on an analysis by this Consultant, it appears that there would be no reduction in the rating, and possibly an improvement with a city department.

COMPROMISE

If the City of Sylvania decides ultimately that its better option is to retain the shared fire service with the Township, there are at least some intermediate steps that should be taken regardless. A gradual phase out of the word township on all fire stations, fire apparatus, personnel uniforms, and public signage should begin.

Regardless of whether the fire department is city controlled or township controlled, the current organization does serve both the city and the township. Hence, regardless of the organizational structuring, the elimination of the word township would put a neutral public face that allows both the city and the township to equitably share in the publicity and good will that comes from the name. Corporations spend millions of dollars in naming rights to stadiums and other public facilities, knowing that the value of having their name associated with a public venue is important and valuable. Similarly, Sylvania City and Sylvania Township should share equitably in all the good will that comes from the fire and EMS services delivered in the field. Since it is this consultant's opinion that the township needs the partnership with the city to a greater extent than the city needs the partnership with the township, it makes sense that the township should not object to a gradual phasing in of the generic "Sylvania Fire Department" as the public identifying label.



Photo #20: An engine labeled "Sylvania Township" at Station No. 1 in the heart of the City of Sylvania

CONCLUSION

The City of Sylvania can be pleased with the fire rescue service which it shares with the Township. City officials have demonstrated their desire to guarantee quality protection for city residents into the future. All deserve credit for seeking neutral outside input that will strengthen an already fine organization.

The firm of **Kramer and Associates** has been asked to review fire protection in communities of many different sizes and in many diverse geographical locations. It can be said unequivocally that the fire and rescue protection provided by Sylvania Township ranks well when compared with that provided in similar-sized jurisdictions. The Fire Department serving the City of Sylvania has, over the years, embraced emergency medical service delivery, technical rescue, hazardous material mitigation capability, and all the other component parts of a full-scale emergency delivery system. The City, however, has no real voice and no method to guarantee quality into the future.

The City of Sylvania with its own Fire Department could exercise quality assurance and look confidently toward the future, and the citizens and businesses within the community can be assured that quality fire protection and quality pre-hospital emergency medical care will be there for them.

It is hoped that the suggestions and recommendations contained in this study will contribute to the ability of the City of Sylvania to plan reasonably for the future of its fire and EMS services.

