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NORTH OLDHAM FIRE DISTRICT

Oldham County, Kentucky

Analysis of Fire Department Operations

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DEFINITIONS

AMAR Automatic Mutual Aid Response: Preprogrammed assistance from neighboring departments dispatched immediately upon the report of a fire or serious emergency, as opposed to Mutual Aid, which must be requested for an incident.

Emergency Medical First Responder: Department members who respond to emergency medical emergencies, usually on a fire apparatus, often arriving prior to an ambulance. They are able to provide immediate stabilizing care and continue to assist until the ambulance departs for a medical facility.

EMS Emergency Medical Services: Pre-hospital medical treatment provided by emergency responders.

Engine: A fire apparatus, also called a pumper that is designed for direct fire extinguishment purposed, usually equipped with pump, water tank, hose, and possibly ground ladders.

ISO Insurance Services Office. 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. This agency evaluates fire Departments on a scale of 1, the very best to 10, the most deficient.

KRS Kentucky Revised Statutes; Governing Laws for the Commonwealth of Kentucky.

Ladder Company: or "Truck": A fire service apparatus that serves in a support role at a fire, providing equipment for forcible entry, access, reach, ventilation and salvage. It is equipped with an aerial device, and ground ladders.

Mutual Aid Assistance given and received "mutually" as requested by adjacent fire departments or fire districts.

NFPA National Fire Protection Agency, a non-profit information collection center and internationally respected authority for the fire protection industry.

QUINT: A **quintuple combination pumper** is a fire service apparatus that serves the dual purpose of an engine and a ladder truck. The name *quint* is derived from the Latin prefix quinque-, meaning five, and refers to the five functions that a quint provides: pump, water tank, hose, aerial device, and ground ladders.

QUAD: A **quadruple combination pumper** is a fire service apparatus that serves the purpose of an engine and has a larger than usual array of ground ladders but no aerial ladder.

FOREWORD

Back in the year 2012, an "Emergency Services Task Force" consisting of fire and EMS officials, business leaders, and other professionals representing key stakeholders in Oldham County met monthly to assess and help improve the state of fire protection throughout Oldham County, Kentucky. This Task Force hired William Kramer to assist in preparing its report and to conduct relevant national research between meetings. Some of the research from the Task Force that is relevant for North Oldham has been updated and brought forward in this report.

The Task Force tended to foster greater cooperation and communications among the various Oldham County Fire Departments and many have achieved various improvements in apparatus, procedures, training or staffing. Consultant William Kramer is pleased to now help one of the participating agencies, the North Oldham Fire District, to achieve a new level of excellence by objectively analyzing on its operations and work with the Fire Chief and Fire Board as they institute improvements. This report outlines the consultant findings and recommendations.

Appreciation is extended to the Board members of the North Oldham Fire District for authorizing this study, conducted from September through December of 2017. The consultant acknowledges the professionalism of the Oldham County Fire District Board:

- Chairman Randall Scherer
- Treasurer Tom Emanuel
- Secretary Scott Thompson
- Trustee Jack Ising
- Trustee Angela Stringer
- Trustee David Morgan
- Trustee Gary Gerdemann

Fire Chief Tim Conway has taken the reins of the North Oldham Fire District and is intent upon providing the best affordable Fire Protection, EMS First Response, and Rescue Service that is currently affordable. As the Fire District grows in population staffing additions and other improvements become possible. This study will provide suggestions for the present and a blueprint for the future.

The Chief is challenging all members to improve their professionalism and dedication, and in the view of this consultant, is succeeding. The consultant made himself available for input from all members and found a dedicated group eager to serve in a professional manner.

The officers who possess leadership roles in providing fire protection displayed a willingness to reach common ground as they worked from different perspectives, displaying a progressive spirit that can only be beneficial to the residents and corporate citizens of the North Oldham Fire District.

The consultant has provided various articles and data points in “Appendices” for those seeking additional information. While William Kramer personally conducting the majority of the study, assistance in the research was provided by an ISO subject matter expert within the Kramer group, Randall W. Hanifen. (Resumes of Kramer and Hanifen are found in **Appendix 1**)

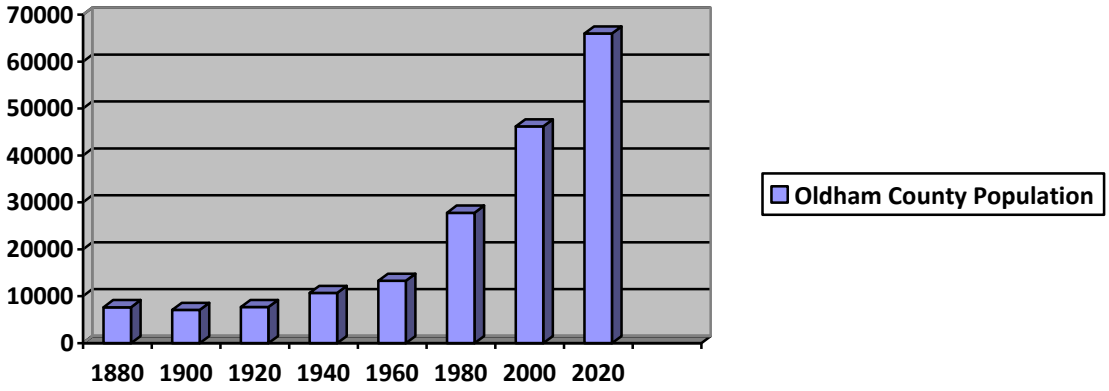
The consultant's analysis was designed to determine the capability of the North Oldham Fire District to deliver necessary fire protection and a first line of emergency medical service, both now and into the future. Staffing, Organizational Structuring, Fire Station conditions and locations and similar factors were studied in detail.

A complete analysis is a complex undertaking where a change in one factor has a ripple effect changing all others. For example, the types of fire apparatus determine the size needs of a given station. The frequency with which service is demanded must be balanced with reasonable response times which vary widely from one portion of a community to another. This is a factor in whether staffing should be split between Skylight and Goshen, or concentrated more in Goshen where most of the population and service demand are located.

Interviews with a cross section of stakeholders indicated that there are differing opinions regarding the state of fire protection in North Oldham. In discussions with governmental leaders, fire officials, dedicated fire department members, and ordinary citizens, however, the consultants found appreciation for the fine fire protection and EMS services and the quality personnel who serve in the department.

The North Oldham Fire Department is arriving at building fires more quickly today with paid crews but also are facing newer buildings which burn faster, are more prone to collapse and in general are more dangerous due to light-weight truss construction, gas lines made of corrugated stainless-steel tubing, and similar factors. The arriving firefighters must have the requisite training and preparation.

Selected demographic data for Oldham County can be found in **Appendix 2.** Some of this information was used as a backdrop in the writing of this report. Note, for example, population growth in the County which was at 65,560 in 2016, and is projected to grow.



It is hoped that this Report will provide information that can be used by the Fire District Board, Chief Conway and other organizational leaders to create a Fire and Rescue service commensurate with increasing demands, and quality service which residents and businesses of the North Oldham Fire District deserve. In its unique position as a growing district with diverse corporate members and residential neighborhoods and a stable taxation base the District has unique challenges in providing services but an opportunity to provide them in quality fashion.

EXECUTIVE SUMMARY

A comprehensive analysis was performed to determine the capabilities of the North Oldham Fire District. The effort was designed to determine how well it can deliver necessary fire protection, EMS and other emergency services. The four-page synopsis below is an "Executive Summary" which gives a brief overview of findings.

The consultants reviewed all aspects of the North Oldham Fire District in detail. During several multiple-day site visits Consultant William Kramer interviewed key personnel from the Fire Board and the Fire Department, other area Fire Departments and other County Officials familiar with the operations of the Fire Department. Numerous items of statistical data were reviewed, collated and reduced to summary tables in this report. The Consultants at all times strove for detailed factual data.

Thanks to Chief Conway, William Kramer had a portable radio with which to monitor operations throughout the North Oldham Fire District. He is pleased to report that Fire suppression and EMS capabilities in the department are both of good quality. Several improvements we suggest are essentially just a matter of making a good thing better.

Mission:

We examined the existing mission of the North Oldham Fire District during the analysis and found it is a quality fire department delivering all forms of expected emergency response excluding medical transport which is handled by the separate Oldham County EMS service. Staffing is currently concentrated in Goshen where 89% of the service demand is located. This report will show costs and benefits of adding 24-hour staffing in Skylight as well. We also think that there is still a role for those who wish to belong as "volunteers." Suggestions are given for volunteer recruitment and retention.

Even though officially, the North Oldham Fire District provides first response to all medical emergencies at the "Basic" level, there are a few trained paramedics on its force, capable of even higher-level advance life support capabilities. We will show why it makes sense for fixed-cost on-duty crews to respond to as many types of emergencies as possible to maximize service to the community. They can always re-prioritize and redeploy when there are simultaneous calls for help.

It is only rarely that multiple calls mean that EMS calls go unanswered by North Oldham personnel and a lengthier response and/or help from a mutual aid unit is necessary. The report addresses the changing nature of the fire department role in the community, including a new emphasis on "Community Paramedicine" or "Community Medicine". Even though this is not of immediate concern in North Oldham, it could provide a real opportunity for community outreach and new revenue.

Staffing:

The Fire Department has met the national standard for a crew size of four in Goshen as well as recommended response time for the Goshen area, but without staffing in Skylight, NOFD does not meet the national standard for response times there. Improvements are possible without expensive salary outlays and the Chief and his crews all seem willing to accept change. We will propose changes that will need some funding, but show ways in which costs can be controlled.

The consulting team found varying degrees of energy and enthusiasm among members of all ranks in the North Oldham Fire District and overall a professional group of which the District can be proud. Most are well-trained and experienced members from Louisville or other area career departments.

The question of staffing adequacy is shown to be subjective and it is evident that there is no magic formula to provide the proper size for a department. Staffing levels and organizational structures vary widely among fire departments even in similar sized communities. Ideally, they represent a balance between community safety and fiscal responsibility.

Fire Apparatus and Equipment:

The rolling stock, or more commonly called fire apparatus units, now serving North Oldham were analyzed and found to be relatively new and serviceable. Pump and hose tests are current and equipment is maintained well by on-duty personnel. An apparatus replacement schedule is in place while the existing fleet can be tweaked going forward to meet the needs of the District. Specifically, the consultants would like the Board and Chief to consider swapping the Quad unit for a more maneuverable small-wheel base unit that could easily traverse the small lanes that are common in North Oldham.

In smaller departments the consultants like the versatility of fire apparatus that combines engine and ladder capabilities into one vehicle. as is the case with the Quint in Goshen. A Pumper with more on-board water should, however, continue to be the first to respond.

Projected space needs for active and reserve equipment of the Fire Department are analyzed from both architectural and deployment perspectives, and the District seems well positioned in both regards. Impetus is given to the adapting of new technology in apparatus such as Class-A foam and cutting tools capable of dealing with high-strength metal alloys.

Fire stations:

The two stations are strategically located so that all parts of the district are within five (5) road miles of a station. The Skylight station will become busier and more strategic in the future as the area develops.

There will be no immediate need to build new fire stations, but a long -term maintenance/renovation plan would serve the District well. Investment in facilities might seem to be an expensive proposition but like most real estate investments, are solid investments.

The District has spent wisely on facilities with its Goshen station as fine as any encountered by the consultants. The Skylight station is in good condition and remains serviceable as well. Neither station seems to be in need of any expensive repair and both are located well for District coverage.The importance of a quality location is shown to be an investment far beyond construction costs.

Supervision and Training:

The report covers the importance of training in the fire department and provides suggestions both for basic firefighting operations, and leadership for officers. We advocate low-cost high-quality programs such as National Fire Academy courses. There is a real value in having a Chief like Tim Conway who constantly gains new knowledge and leads by example**.**

Strategic Master Planning, using participatory input from departmental members at all levels is recommended to facilitate a pro-active approach to the future.

Run Data, Fire Suppression, Fire Prevention and Balance in functions:

The report analyzes run data and response times and provides suggestions for improvement. Where service demand is greatest, response times are within recommended standards, but as with most communities, not all runs can be answered quickly. In the northern part of the District, average response times and distances are stretched to the limits of acceptability due to the lack of staffing in the Skylight facility.

Topography and Demographics

The study provides an overview of North Oldham as a community, including topography, demographics, special hazards, target zones, and other unique characteristics that impact upon fire and emergency response. See **Appendix 2** for the demographics that were used as a backdrop for this study.

Metrics, Standards and Comparisons

In analyzing call volume and response times, the report references national standards for performance and staffing recommendations, such as National Fire Protection Association (NFPA) Standards 1710 and 1720, and analyzes the present and future ability of the North Oldham Fire District to comply with the standards. The study will show that there are a variety of metrics that can be used to evaluate the department but that in the end, there remains subjectivity regardless of the measures chosen.

Among other metrics, the report also provides present and future requirements necessary to improve district ratings by ISO (Insurance Services Office), which impact fire insurance costs, especially for businesses. The ISO Fire Departments on their ability to control fire, and North Oldham is shown to have a favorable rating compared to most of the nation’s fire departments. This report will show how the ratings affect insurance rates for both homeowners and commercial establishments. Suggestions for improvement in the ratings are provided.

Funding, Budgets:

Both the capital and operating budgets in North Oldham are sufficient but finite and the fire department should be prepared to operate with modest annual increases. Because paid personnel usually consume a major share of a fire department budget, new part-time paid positions would have to use surplus funds and/or be off-set with new revenues, budget cuts elsewhere or other creative funding alternatives. The consultants do believe that staffing at Skylight is affordable and advisable.

Communications

The consultants toured the County-wide 911 call taking and Dispatch center and noted efficiency and professionalism. This not only speaks well to swift response for the citizens, but favorably impacts the District's ISO rating, some suggestions for improving dispatching times are provided.

Conclusion:

In conclusion the North Oldham Fire District is functioning at a quality level currently and it is the hope of the consulting team that this objective third-party analysis will allow it to perform at an even more enhanced level.

The Fire District deserves credit for seeking a progressive analysis regarding Fire Department and Rescue Operations since these are among the most vital of services provided to citizens in any community.

The pages of this report will provide more specific and detailed information for each of the targeted categories in the above Executive Summary and the report will provide the logic and rationale behind various findings and suggestions. The report does not follow the same exact order as the executive summary above, since many of the subjects are interrelated, and are often cross-referenced in different contexts

On the following page is a summary of the metrics and evaluation techniques comparing North Oldham Fire District to

HISTORICAL PERSPECTIVE

The North Oldham Fire District has provided fundamental service throughout its history. Although the frequency and severity of structure fires are declining nationally, and all of Oldham County has accordingly seen some reduction over time, new demands such as Carbon Monoxide alarms, increasing hazardous material incidents, and vehicular accidents all require the presence of a well-trained quick responding fire department.

Over time the Department has undergone various transitions, primarily on moving from a department relying on volunteers to one with on-duty staffing and a Fire Department that now enjoys more modern equipment and apparatus.

The current anti-tax climate brings all government services under scrutiny, and, as evidenced by a 10% reduction in the tax rate, it is evident the current Board tries to balance quality service with fair taxation. It is important to make sure there is a proper balance between community needs and affordability. This report will try to provide factual data and detailed information to assist the North Oldham Fire District in gaining new joint efficiencies and in maintaining the right size department. It is fortunate to have experience and enthusiasm among fire department members including both veteran firefighters and younger members. This study should provide guidelines for growth, and a blueprint for the future.

Consultant William Kramer feels that fire protection in general presents an interesting history which is relevant to our study and which can be divided into three eras. The first era ("Era I") dates to the days of Benjamin Franklin, an early leader in the early American Volunteer Fire Service. Early in our history, the US citizenry depended upon fire protection in the form of vehicles such as hand-drawn pumps and hose carts brought to the incident location.

In a sense, this form of fire protection has not changed much and 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 an alarm is sounded.

Left:
Steamer from "Era I"

A second era of fire protection ("Era II") is represented by placement of fire suppression systems (sprinklers and alarms) inside of structures themselves.

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. Sprinklers will help contain or extinguish a fire and often will summon fire suppression forces when the water flow in the piping system triggers an automatic alarm. This type of fire protection is immediately deployed and is capable of operating independently of the external protection provided by a fire Department.

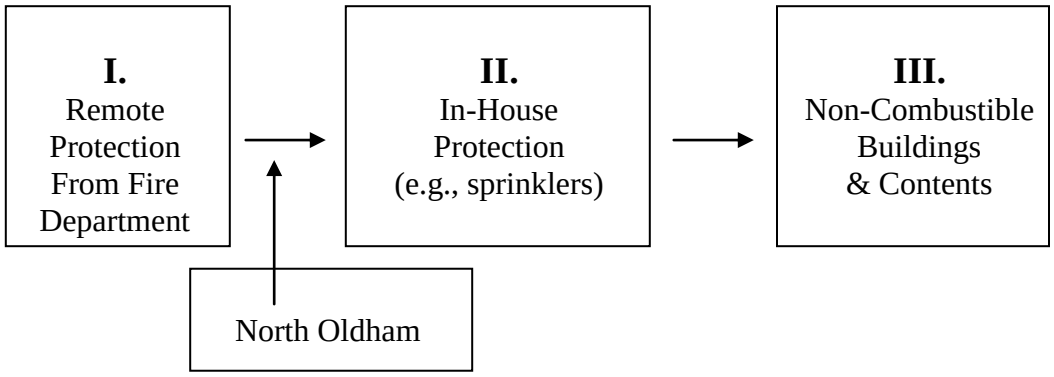
As part of Era II, smoke alarms, mandated in many commercial structures, have become popular in homes, and have resulted in the early detection of many fires while in the incipient stage. This has allowed the occupants to take immediate action and has saved untold numbers of people and many homes from 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 departments ("Era I"). As new commercial development occurs over time in North Oldham, new structures will enjoy Era II internal protection, reducing the demands on firefighting forces. New homes should be mandated to have hard-wired, battery-backup ionization smoke alarms. It is likely that North Oldham either has or will soon have the first residential sprinklers in single-family dwellings.

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 non-combustible society, then not only are fire departments from "Era I" rendered less important, but even sprinkler systems and in-house protection from "Era II" will likewise become far less necessary. The third period, "Era III" will not enter into our study or equation since society is not even close to entering a non-combustible age. Overall, however, the historical result of the move toward Era II and III has been fewer fires, and less intense fires. Fire Departments have taken on EMS, Technical Rescue, and other functions. Below we see the positioning of NOFD, between eras I and II, as is virtually all of the nation's fire service.

Three Historical Eras of Fire Protection:



EVOLVING FIRE DEPT. MISSION

Looking forward, we know that the future always holds new challenges. Solar panels, easy to electrocute the unsuspecting responders, for example, are a new problem in fire control. This report will reference several of the key NFPA (National Fire Protection Agency) Standards and show their relevance to staffing, apparatus, and other key issues in Oldham County. Since the NFPA is a non-profit information collection center and internationally respected authority for the fire protection industry, it can provide useful guidelines for organizations wishing to improve themselves.

One of the most comprehensive standards is NFPA Standard 1201, *Developing Fire Protection Services for the Public.* This Standard, which was introduced in the year 2000, is an excellent checklist for fire agencies that want to make sure they are paying attention to key functions of a modern-day fire agency.

Table A below shows key component sections of NFPA Standard 1201 and demonstrates its comprehensive scope. To the right are the functions of the North Oldham Fire District as shown on the web page. The consultants noted that this side-by-side comparison shows a good match up with key departmental responsibilities. We will see that NOFD also does pre-incident planning and other functions that are not specifically listed in the right column but that approximate to an even greater degree the topics in NFPA 1201.

Table A --KEY SECTIONS OF NFPA STANDARD 1201	**NOFD FIRE DEPARTMENT OPERATIONS**
• Purpose of a Fire Department • Governmental Responsibilities • Strategic (Master) Planning • Organizational Structure of the Fire Department • Financial Management and Budgeting • Human Resource Management • Training • Organization for Fire Suppression • Emergency Scene Management • Emergency Medical Systems • Community Relations • Public Fire Safety Education • Code Enforcement • Fire Investigation • Communications • Equipment and Buildings • Management of Water for Fire Protection • Hazardous Materials • Major Emergency Management • Management Reports and Records	• Fire Suppression • Rescue MVA extrication, confined space, rope, swift water • Boat Operations • Medical runs for EMS • Water supply, tanker • Trainings • Hydrant Testing and maintenance • Hose testing • Inspections • Community Involvement • CPR training for the community

When assessing needs, we must look at what services are essential for fire departments to provide to their customers. The fire service should not only provide an emergency response role to its community, but also provide support functions that make the fire departments a valuable asset to their community's safety. The North Oldham Fire District handles fire suppression, fire prevention, first response for emergency medical care and technical rescue. Other program which the consultants deem valuable are the training of kids with a fire safety house and the juvenile fire setters program.

New technology and new tools come along which help the fire departments cope with their broadening mission. There are old hazards such as truss construction and new hazards such as solar panels. (See **Appendix 3** showing dangers posed by trusses and solar panels.)

The National Aeronautical and Space Administration (NASA), a client of Kramer's has invented some sophisticated new technology that could help save the lives of Firefighters. See the article from the ***Los Angeles Times*** in **Appendix 4** which shows how artificial intelligence and other sophistications can be high-tech allies added to fire agencies nationwide. North Oldham is sophisticated enough to look ahead toward using these new devices some day.

FIRE PREVENTION

The fire prevention efforts within the North Oldham Fire District are adequate and exceed those in many communities of comparable size. The consultant has discussed the prevention efforts with Chief Tim Conway and is pleased that Fire Companies as a group review commercial structures twice each year, discovering hazards and updating pre-plan information. For the schools in the District, the North Oldham Fire District works hand-in-hand with Kentucky State Inspectors ensuring safety in all educational centers.

Below are safety messages from the fire prevention page of the North Oldham Fire District Website

General Fire Safety Tips...

IN AN EMERGENCY CALL 911

In case of fire go to your neighbor's home to call.

Teach your children how to get emergency help.

FIREWORKS ARE DANGEROUS

Even sparklers, which burn as hot as 1200 degrees F (649 C), cause thousands of injuries to children each year. Attend professional displays and leave fireworks to the technicians who are trained to use them

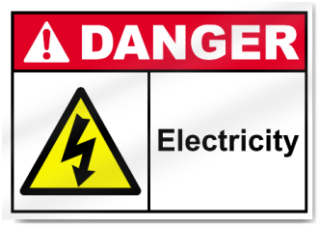
MULCH FIRE DANGER

Mulch presents a common, but often overlooked, source of fuel for fire. A cigarette flicked into decorative mulch can easily result in devastating house fires.

PROTECT YOUR HOME FROM WILDFIRE

Create a safety zone around your home by clearing flammable vegetation. Keep your roof clear of leaves and needles.Discuss community fire safety with your neighbors.

Call the Fire Department to come check your property for risk if you have nay doubts.



USE ELECTRICITY SAFELY

Don't overload extension cords or run them under rugs.Replace any cord that is cracked or frayed. If an appliance smokes or has an unusual smell, unplug it and have it repaired by a professional. Use the proper size fuses in your fuse box.

CRAWL LOW UNDER SMOKE

If you encounter smoke on your way out of a fire, use an alternate way out instead. If you must escape through smoke, crawl low under the smoke to your exit.

STOP, DROP, AND ROLL

If your clothes catch on fire, stop where you are, drop to the ground, cover your face with your hands and roll over and over to smother the flames.

WORKING SMOKE DETECTORS SAVE LIVES

Install them on every level of your home and outside each sleeping area.Test them monthly and install new batteries before they go bad.

With about 350 new homes underway near Skylight and developments on the books elsewhere in North Oldham, the District can take a proactive role in approving plans and conducting construction inspections to ensure fire codes compliance as buildings are constructed or renovated

PRE-INCIDENT PLANNING

As new development occurs in the North Oldham Fire District it will be vital that firefighters know as much information as they possibly can about the neighborhoods into which they respond and the buildings they will enter. Equally important is knowledge of existing structures, especially those with life safety hazards or other concerns.

North Oldham has done well in putting together this information in advance on all the properties as listed in **Table B** below:

Table B -- Facilities within NOFD with Fire Dept. Preplans on file

Axton Lane Farmhouse	Eversmooth	Lions Club	Prospect Office Park
Bed and Biscuit	Goshen Animal	LYC	Prospect Preschool
Beehive home	Goshen elementary Hillcrest	Melrose Office Bldg.	River Valley Church
Cardinal Harbor Club	Goshen Saddlery Goshen store	New Goshen Presb. Church	Skylight Center
Chevron	Harmony Landing CC	**N**orth Oldham Campus	Springdale Automotive
Christ Church in Goshen	Heathers	Oldham County Library	St. Francis School
Creasey Mahan	Hillcrest Club	Paramount Clubhouse	St. Johns UMC
D Tails Pet Salon	Hillcrest Office Park		Stockyards Bank
Dr. Patella, DMD	Linet's Fashions		Tartans Landing

These surveys show firefighters the building layout, water supply locations, and accessibility issues. They also cover, fire suppression design, alarm panel locations, and specific life safety hazards, plus any other items the fire department needs to know ahead of time.

Typical information that is minimally covered in preplans is referenced in the *NFPA 1620 Standard: Recommended Practice for Pre-Incident Planning*. Francis L. Branigan, in his book *Building Construction for the Fire Service*, states "pre-fire planning is the key element for the fire service, and without it, firefighters are just reactionary."

Information in the formulation/design of preplans is available from the Fire Protection Handbook's current edition. This manual has an entire chapter on the development of preplans. It should also be noted though that Microsoft's Visio Program has a preplan package available that is much more firefighter friendly than the standard symbols used in both the NFPA 1620 and Fire Protection Handbook.

OVERVIEW: OLDHAM COUNTY FIRE DEPARTMENTS

One useful comparison will be to contrast North Oldham with other Oldham County Fire Departments many of whom stay busy according to a cursory comparison with similar communities. **Table C-1** below is drawn from information gleaned by the consultant during the Task Force hearings and gives an overall view of roster strength by department. **Table C-2** next page, shows how this converts to **"on-duty"** district coverage. By the metric of who has someone available to respond immediately, North Oldham stacks up against other departments nicely. We note that the following chart shows only the department as a whole and does not account for the multiple stations in some districts. **Table C-2** which follows will provide a more complete breakdown

Table C-1: Oldham County Fire Dept. Staffing

	North Oldham	***Ballardsville***	***LaGrange***	***Pewee Valley***	***South Oldham***	***Westport***
District Population*	**12,500**	**10,000**	**13,000**	**8500**	**15000**	**1000**
ISO Rating	**4/8**	**4**	**4/5**	**4/9**	**3/3X**	**4/9**
No. of full-time	**2**	**1**	**3**	**0**	**15**	**0**
No. Part-time	**26**	**18**	**16**	**0**	**10**	**0**
Volunteers	**10**	**32**	**31**	**32**	**30**	**12**
Fill-in personnel	**15**					
Total Personnel	**53**	**51**	**50**	**32**	**51**	**12**
Average Age of members	*40.4*	*26*	*35*	*34*	*36*	*35*

*Populations are estimated

The fire and rescue services delivered by Oldham County Fire Departments vary in quality. Some departments rely entirely or primarily on volunteer personnel for their staffing strength and depth and herein lies a potential danger. Across the country, volunteers are becoming more difficult to recruit and retain. North Oldham seems to have headed off this dilemma by pro-actively finding an affordable way to staff the District.

Stiffened state standards, competing demands for time, and similar factors mean a dearth of volunteers. Other Departments in Oldham County which are primarily volunteer so far are maintaining, but the future could become more challenging meaning additional part time or full-time personnel will be needed. See **Appendix 5** for an article from March of this year showing how Surry County fire departments had to hire personnel and follow the path already travelled in North Oldham. They had to replace dwindling volunteer forces with on-duty staff.

In the Chart which follows, it is seen that North Oldham and South Oldham are best in the County regarding on-duty personnel.

TABLE C-2 -- OLDHAM COUNTY STAFFING BY STATION

District	Number On duty 24/7/365	Number on duty other times	Command Staff on duty Weekdays daytime
North Oldham Goshen	4	0	2
North Oldham Skylight	0	0	0
Ballardsville 1	0	4 Personnel Mon thru Fri. 8 AM to 5 PM	1
Ballardsville 2	0	0	0
Lagrange 1	0	5 Personnel Mon thru Fri. 6 AM to 6 PM	0
Lagrange 2	0	0	0
Lagrange 3	0	0	0
Pewee Valley 1	0	0	0
Pewee Valley 2	0	0	0
South Oldham 1	4	0	3
South Oldham 2	0	0	0
Westport	0	0	0

RESPONSE DATA

As in most communities the activity level of the fire department in North Oldham is showing a gradual increase but the activity level is still modest enough so that the probability of multiple simultaneous calls remains low. Chief Conway provided the data to the consultants which appears on the next two pages. From the data provided, the projections were made and **Table D**, summarizing the data, was prepared.

The fire and EMS services delivered by the North Oldham Fire District are of high quality compared to similar sized communities analyzed by the consulting firm. As the figures and chart show, the majority of calls for service are EMS assists

NOTE: IN THE FIGURES AND TABLES WHICH FOLLOW THE 2017 TOTALS WERE MATHEMATICALLY PROJECTED FROM YEAR-TO DATE FIGURES PROVIDED AT THE TIME THE REPORT WAS PUBLISHED. SINCE THE DATA PROVIDED WAS FOR EIGHT (8) MONTHS, A FACTOR OF 50% WAS USED TO ESTIMATE THE PROJECTIONS.

2017 January until Sept 1st (not a full year yet)
Total runs 374 [Projected to 561 for year]
Goshen area 318 runs [Projected to 477 for year]
with 170 runs of them medical runs [Projected to 255 for year]
Skylight area 51 runs [Projected to 77 for year]
with 23 of them medical runs [Projected to 36 for year]
Border area could be either company 5 runs [Projected to 7 for year]
with 3 of them medical runs [Projected to 5 for year]

2016 January 1st – December 31st
Total runs 486
Goshen Area 409 runs with 251 of them medical runs
Skylight Area 71 runs with 29 of them medical runs
Border area could be either company 6 runs with 3 of them medical runs

2015 January 1st – December 31st
Total runs 529
Goshen Area 455 runs with 290 of them medical runs
Skylight Area 64 runs with 27 of them medical runs
Border area could be either company 10 runs with 3 of them medical runs

2014 January 1st – December 31st
Total runs 479
Goshen area 391 runs with 234 of them medical runs
Skylight area 75 runs with 38 of them medical runs
Border area could be either company 13 runs with 3 of them medical runs

2013 January 1st – December 31st
Total runs 474
Goshen Area 380 runs with 199 of them medical runs
Skylight Area 90 runs with 55 of them medical runs
Border area could be either company 4 runs with 3 of them medical runs

2012 January 1st – December 31st
Total runs 522
Goshen Area 404 runs with 213 of them medical runs
Skylight Area 99 runs with 44 of them medical runs
Border area could be either company 19 runs with 9 of them medical runs

Table D -- North Oldham Fire District Emergency Calls 2012 to 2017

Year	Total	Goshen		Skylight		Border	
		Fire	EMS	Fire	EMS	Fire	EMS
2012	522	191	213	55	44	10	9
2013	474	181	199	35	55	1	3
2014	479	157	234	37	38	10	3
2015	529	165	290	37	27	7	3
2016	486	158	251	42	29	3	3
2017	561	222	255	42	35	4	3

RIGHTSIZING THE NORTH OLDHAM FIRE DISTRICT

We have established that the North Oldham Fire Department is well respected and performs a quality service, but is it the right size? Does it have sufficient personnel on duty and/or the proper number of fire stations? Does any have too many of either? While the answers to these questions are subjective, this report will provide objective analytical approaches that will provide guidance to the District.

Gradual increases in the budgets over time seem to have been orderly and methodical, while funded with tax-generated dollars from residents and businesses. The fact that the Board reduced the taxation by 10% shows a genuine effort to balance taxation with quality service. Adequate funding will likely be available even at the nine-cent rate to provide stable funding for the District, including staffing for the Skylight station. Caution, however, is in order.

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.

In North Oldham, the fire station in Goshen originated to serve the population center there. In Skylight, a community once also known as Tippecanoe, the Fire Department was built first on Axton Lane, about a block from the current location. Both fire stations ended up well placed and have gradually become more strategic as the community has grown around them, and as the North Oldham Fire District has developed.

The level of fire and rescue protection must include "affordability." An extreme example can be found on some Native-American Indian Reservations here in the U.S.A. Fire protection consists of several lengths of old hose connected to water mains, 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 a Chevrolet Camaro Plant closed in the City of Norwood, it suddenly had one fire station, instead of 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. In North Oldham, if revenues grow, expenditures for fire protection can grow. If they decline, the fire departments may have to downsize.

With fire and rescue protection, it is very 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 <u>not</u> be worth it if neglected streets (poor signaling, rough pavement, etc.) cause 2 or more traffic fatalities, or if an underfunded police agency leads to more deaths from violent crime. All governmental services must be kept in a balance by District and County officials.

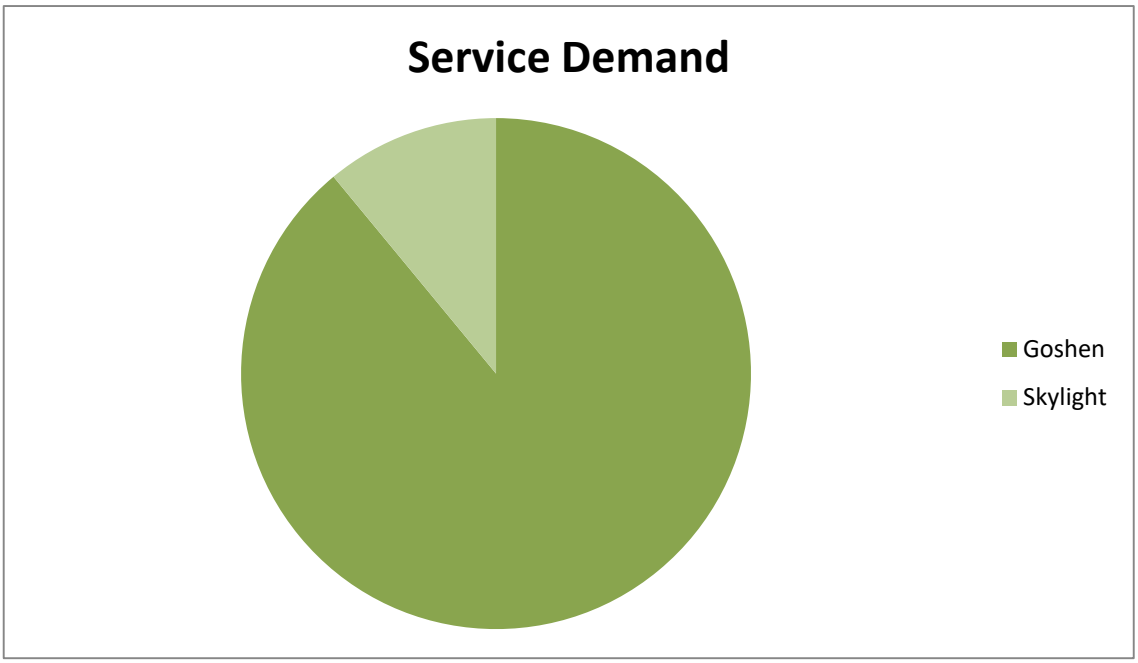
Even if one could guarantee that one *could* save a life by adding a fire or rescue unit, most members of society would still want to weight this option against a "quality of life" factor. People *want* aesthetic beauty (parks, for example), and conveniences such as transportation. People are as a society, willing to incur some risks to have this quality of life.

Limited tax dollars need to be balanced especially in light of the fact that some public funds might be expended better elsewhere.

If the Oldham County Fiscal Court were to introduce a plan that would eliminate 100% of all highway fatalities in Oldham County, 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 County. Oldham County residents would likely find this unacceptable. Society members are generally willing to incur some safety risks in exchange for mobility in life and aesthetic beauty in our surroundings. Likewise, citizens are usually willing to spend only limited dollars for fire and rescue protection, despite whatever emotional hype might be used to argue to the contrary.

If we were to put a fire station and a medic unit on every major street in the County 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 magic equation that will dictate the proper number of staff and how they should be divided among the two stations unless Board members are also willing to factor in the monetary cost of providing these. We know that 89% of the service demand is closer to Goshen than Skylight, so whatever size is deemed appropriate, this high demand zone needs to be favored for staffing. See the Graphic below.



GOSHEN -- 89% **SKYLIGHT -- 11%**

A fire department can only afford to staff and equip itself for the ordinary and probable, not the unusual times when resources become totally depleted and calls are "stacked."

One of the most respected periodicals in the firefighting profession, ***Fire Engineering*** occasionally assembles valuable statistical data regarding the number of firefighters on duty, number of stations and similar statistical data that can be used for comparative analysis across similar jurisdictions.

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This publication entitled ***Fire Engineering – Directory of Municipal Fire Departments*** provides the following types of statistical data:

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

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. Most Fire Departments have begun providing Emergency Medical Service (EMS), Technical Rescue, Hazardous Material Mitigation and similar services and have maintained their personnel strength. The North Oldham fire District has mirrored this trend.

As we seek to compare North Oldham to other Departments in similar-sized jurisdictions we must remember that NOFD provides first response to EMS while other departments provide fire suppression services only.

The ***Fire Engineering*** Report shows that the number of firefighters per 1000 has consistently remained at about 1.6 since 1984. Using 12,500 as the base population for The North Oldham fire District the number of full-time firefighters would be 1.6 x 12.5 = 20.

A rule of thumb would be to divide this number by four to get on-duty strength. (Three shifts plus vacancies for vacation and other leaves. That means that the average on-duty strength nation-wide would be 20/4 or five (5) on duty. This would bolster the argument to move to a fifth on-duty person to align the North Oldham staffing metric with the national average. With that despite the four-per apparatus standard a two-piece five person response to all parts of the district would , in the opinion of this consultant, be superior to the existing 4-person staffing concentrated in Goshen. .

Another dimension of staffing is training and preparation of those who on duty, and this will be addressed later in the report. Three well-trained firefighters on the first arriving vehicle can outperform four who are less trained and less experienced despite the letter of the standards.
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State-mandated training for volunteer firefighters is always increasing. The article in **Appendix 5** shows how this training burden contributed to the demise of one volunteer fire department. A national trend toward higher training standards will continue to make the lot of the volunteer more difficult and challenging. While it will be a positive factor toward performance capabilities of volunteers, it may well be counterproductive on the recruiting side.

TAXATION REVENUES THROUGH TIME

Chief Tim Conway was able to provide taxation information for the previous six periods and these are shown below and summarized in **Table E** both as they exist and as they would be projected through time at both the nine cent rate and the ten-cent rate.

It is projected that property taxes will have an increase of 4.5% this fiscal year. This doesn't include projected and current growth. Also, None of these numbers include an annual $80,000 received from the cell tower.

2016/2017 is .09 per $100 assessed property value This was the first year @ 9 cents per $100

Real Estate	$1,251,169.25
Motor Vehicle	$124,618.05
Delinquent	$9,726.24
Total	$1,385,513.54

2015/2016 is .095 per $100 assessed property value This was the first year @ 9.5 cents per $100

Real Estate	$1,295,325.77
Motor Vehicle	$127,099.07
Delinquent	$4,872.22
Total	$1,427,297.06

(For the periods 2015/2016 & 2016/2017 North Oldham took over the fire protection district of the corporate cities of Countryside & Riverbluff increasing our taxing a little over $60,000. Prior to NOFD taking over the fire protection they contracted for service by paying $30,000.)

2014/2015 is .10 per $100 assessed property value This was the last year @ 10 cents per $100

Real Estate	$1,286,083.67
Motor Vehicle	$125,788.06
Delinquent	$11,243.47
Total	$1,423,115.20

2013/2014 is .10 per $100 assessed property value This was @ 10 cents per $100

Real Estate	$1,273,865.95
Motor Vehicle	$128,933.07
Delinquent	$3,482.87
Total	$1,406,281.89

2012/2013 is .10 per $100 assessed property value This was @ 10 cents per $100

Real Estate	$1,321,119.10
Motor Vehicle	$109,583.94
Delinquent	$10,830.47
Total	$1,441,533.51

While there has been positive growth, we cannot be certain this will continue. At the request of Chairman Randy Scherer the Chief researched recent years and provided the following history, corroborated by the consultant. It is noted that includes a recessionary period which had a serious negative effect on housing values and construction starts.

NOFD Tax revenue history
2009 : 2.69% growth 2010: negative -1.11% decrease 2011: negative -.04% decrease 2013: 3.58% growth 2014 : 1.76% growth 2015 : 1.4% growth 2016 : 1.4% growth 2017 : 4.5% growth

This average of the above is positive and equates to 1.3975 average growth. The national board of realtors as well as government economists have written extensively to state that the real estate downturn was a once-in -a -lifetime aberration. Hence for planning purposes the consultants feel that a more realistic and yet still conservative measure of expected growth would be to average only the positive growth years (2009 and 2013 thru 2017) . This average is 2.555 and will be used for future projections in **Table E** below.

Table E -- Tax revenues
Actual above Dark separation line; projected figures below line.

Year	Rate	Revenue	Rate	Revenue	
2012/13	.10	$1,441,533.51	.10	$1,441,533.51	Actual
2013/14	.10	$1,406,281.89	.10	$1,406,281.89	
2014/15	.10	$1,423,115.20	.10	$1,423,115.20	
2015/16	.095	$1,427,297.06	.10	$1,502,417.80	Projected at Actual growth
2016/17	.09	$1,385,513.54	.10	$1,539,460.00	
2017/18	.09	$1,423,845.00	.10	$1,578,716.00	Projected At 2.55% growth
2018/19	.09	$1,460,224.00	.10	$1,618,973.00	
2019/20	.09	$1,497,479.00	.10	$1,660,257.00	
2020/21	.09	$1,525,665.00	.10	$1,702,593.00	

PRESERVING VOLUNTEERS

The depth provided by "Call-back" volunteers is thin during the day when they are largely at their primary occupations and unavailable. Volunteers provide more reliable coverage in the evenings and weekends. Volunteers do, nonetheless, provide a cost-effective method of providing depth to sparsely staffed departments such as North Oldham but at times are not totally reliable in terms of timely response and adequate numbers. If volunteers responding from home or work to the station can assemble within five minutes, then total response time to most of the properties in the District are within a 14-minute "Volunteer " Standard.

Fortunately, it is seldom when North Oldham is toned out for a emergency response and no one is available to respond. All County departments support and back up one another. This consultant feels that every call, even routine residential CO alarms should be answered immediately by someone from one of the fire departments, even if it is a volunteer with a car and radio.

Improvement is possible. As volunteer firefighters become scarcer, there are options, as follows:

- Increase incentives for volunteer recruitment and retention
- Rotate the volunteers through a schedule where they voluntarily pull duty-time. (In Glendale near Cincinnati, every volunteer that wants to remain on the department must give 36 hours of in-station duty a month. This can be divided for member convenience. e.g., 4-hour, 6-hour, 12-hour or 24-hour. (This is already the case in North Oldham, as qualified volunteers can back-fill when regularly scheduled personnel cannot make a shift.)

The evolution of most of the fire departments follows a model that begins with a volunteer fire department and adds it first part-time paid personnel to cover times when volunteers are scarce. According to the NFPA's *U.S. Fire Department Profile,* "Small communities (those under 10,000) across the united states are typically protected by all volunteer departments.

Mid-Sized communities (those with a population over 10,000) are typically served by a combination (volunteer and paid personnel working side by side). Large communities (those with populations over 100,000) are protected by departments that consist primarily of "paid staff".

The NFPA breaks down the population protected in standard increments and illustrates the number of paid and volunteer departments that cover the respective populations. **Table F** on the next page shows population breakdowns and the types of fire departments likely to be serving communities of various sizes. North Oldham falls in the zone of population between 10,000 and 24,999, near the lower end, but nonetheless is able to provide on-duty staffing. It compares well since nearly two thirds of departments in its category are still classified as "Volunteer."

Table F -- Coverage per population categories by Career and Volunteer Fire Departments

Population Category	Number of Career Departments	Number of Volunteer Departments
1,000,000	36,100	100
500,000 to 999,000	35,900	4,150
250,000 to 499,999	24,750	2,800
100,000 to 249,999	47,100	3,000
50,000 to 99,999	47,050	5,650
25,000 to 49,999	46,650	23,950
10,000 to 24,999 **(North Oldham 12,500)**	45,200	79,200
5,000 to 9,999	17,000	109,000
2,500 to 4,999	5,500	165,950
under 2,500	8,050	429,550

(Courtesy of National Fire Protection Association *U.S. Fire Department Profile0*

Survey of Current Volunteer Recruitment & Retention Programs

The modest stipends which are paid to volunteers in North Oldham will help to ensure that they can remain as valuable resources in helping to provide Fire Protection and EMS Service, Additional attention may be necessary for recruitment and retention.

A publication entitled *Retention and Recruitment for Volunteer Emergency Serves: Challenges and Solutions* written by the National Volunteer Fire Council and the United States Fire Administration was written in May 2007. Included is a section entitled "Retention and Recruitment Root Causes." This excerpt explains some of the challenges to recruiting and retaining volunteers. Some of the challenges are:

- **Time Demands**
- **Training Requirements**
- **Increasing Call Volume**
- **Changes in the "Nature of the Business" - Less social aspects**
- **Changes in Sociological Conditions (in urban and suburban areas)**
- **Leadership Problems**
- **Federal Legislation and Regulations**
- **Increasing Use of Combination Departments**
- **Higher Cost of Housing (in affluent communities)**
- **Aging Communities**
- **Internal Conflict**

Recommendation for Recruiting and Retention

Some volunteers shun cash incentives feeling that it detracts from their volunteer spirit and desire to serve the community, but the majority gratefully accept the small stipends that offset gasoline and out-of-pocket expenses. In the future a standardization of incentives, monetary and non-monetary or both might be needed.

North Oldham may wish to consider a supplemental benefit package for part-time personnel, which in contrast to the full-time costs of health insurance and pension contribution, is not very costly. A large Insurance Company already being used by the existing departments in Kentucky is VFIS. When we consider the costs of on-duty personnel, even at a lower part time rate, there should be room for monetary incentives for the back-up personnel.

This company offers group packages with coverage for professional liability, errors and omissions, vehicle fleet insurance, life insurance, and disability supplements.

Appendix 6 has information on volunteer recruiting.

If volunteer participation is deemed important by any of the current fire board the consultant suggests that a formal recruiting and retention program be developed in order to address the challenges noted by the National Volunteer Fire Council. Some of the latest recruitment tools offered by the National Volunteer Fire Council are Podcasts, Public Service Announcements for a department's website, and the 1-800-FIRE-LINE.

BUDGETING, FINANCE AND GRANT FUNDING

While the cost of fielding a fire department is expensive in the community, the cost of no fire department is considerably higher and would in theory make it unaffordable for commercial enterprises to operate due to exorbitant fire insurance rates that would ensue.

The next page shows the current budget for the North Oldham Fire District and in the eyes of the consultants is appears balanced among the necessary component parts. Going forward the consultants would like to see emphasis gradually shift from expensive apparatus to personnel to make sure that firefighting equipment can respond immediately from either station.

There are costs involved for a community that wants to have first-rate fire and rescue protection..One way to fund equipment and personnel is grant funding. There are numerous sources of grant funding available to fire departments throughout the United States.

North Oldham deserves credit for being frugal and spending taxpayer funds efficiently. Ongoing efforts to secure current grants through the currently available programs are underway, and if successful will assist in funding some of the recommendations in this study.

FY-2017/2018

Income	
1 Taxes	
1 A Real Estate - current	1,300,000
1 C Motor Vehicles	90,000
1 D Delinquent	10,000
Total 1 taxes	**1,400,000**
4 Intergovernmental Revenues	
4 B State Government	
4 B-1 Incentive Pay	8,000
4 B-2 State Aid	11,000
Total 4 Intergovenment Revenues	**19,000**
5 Charges for Service	
5 C Rent Income - OCEMS	1,800
6 A Cell Tower Income	
6 A-1 AT&T	23,220
6 A-2 Sprint	24,840
6 A-3 TelecomTax	1,457
6 A-4 Verizon	24,840
Total 6 A Cell Tower Income	**76,157**
7 Interest Earned	**1,000**
Total Income	**1,496,157**
Expense	
9 Personnel	
9 A Salaries & Wages	755,000
9 B Aflac	
9 D-1 FICA-Employer	57,757
9 E Workers Comp	26,047
9 F Unemployment Insurance	9,060
9 G Retirement	26,000
Total 9 A-9G	**873,864**
9 H-1 Awards & Recognition	
9 H-1A Length of Service	1,500
9 H-1B Awards Banquet	2,500
9 H-1C Awards	2,000
Total 9 H-1	**6,000**
9 H-2 Medical Exams	7,000
9 H-3 Member Assistance	1,000
9 H-5 Recruiting & Retention	2,000
9 H-6D Trustee Allowance	2,100
9 H-7 Incentive Pay	8,000
9 H 2-7 Total	**20,100**
Total 9 Personnel	**899,964**
10 Operating Expense	
10 A-1 Advertising & Printing	1,300
10 A-2 Open House	2,000
10 B Professional Services	
10 B-1 Audit	5,288
10 B-2 Legal Services	3,000
10 B-3 Payroll Processing	4,800
10 B-4 Consultant Services	1,000
10 B-5 Computer Support Services	12,500
10 B-6 Harrods Creek Fire	0
Total 10 B Professional Services	**29,888**
10 C Maint & Repairs	
10 C-1 Apparatus Maint & Repair	50,000
10 C-2 Equip Maint & Repair	10,000
10 C-3 Fire Hydrant & Repair	200
10 C-4 Hose & Nozzle Repairs	1000
10 C-5 Radio & Pager Repairs	0
10 C-6 Skylight Station Maint	8,000
10 C-7 Goshen Station Maint	12,000
10 C-8 Training Center Maint	0
10 C-9 Tower Maintenance	2,000
Total 10 C Maint & Repairs	**83,200**
10 D Utilities	
10 D-1 Gas/Electric/Water	38,000
10 D-2 Telephone/Internet	11,200
10 D-3 Cellphone	1,200
Total 10 D Utilities	**50,400**
10 F Insurance Coverage	
10 F-1 Insurance Policy	36,000
10 F-2 AD&D	4,500
10 G Oldham County Dispatch	12,000
10 H Sanitation	1,800
10 J Materials	
10 J-1 Fire Rescue Equipment	6,000
10 J-2 Personal Protective Gear (Capital)	
Total 10 F-10 J	**60,300**
10 K Supplies	
10 K-1 Cleaning Supplies	1,800
10 K-2 Fire Prevention	100
10 K-3 Fire Support Supplies	1,800
10 K-4 Office Supplies	3,000
10 K-5 Uniforms	8,000
10 K-6 Postage	2,000
10 K-7 EMS Supplies	1,500
Total 10 K Supplies	**18,200**
10 I Office Equipment	
10 I-1 Office Printers	2,500
10 I-2 Furniture	
Total 10 I Office	**2,500**
10 M Fuels & Oils	
10 M-1 Fuel (Apparatus)	20,000
Total 10 M Fuel	**20,000**

SAFER Grants:

The Staffing for Adequate Fire and Emergency Response (SAFER) ACT is comparable to the COPS grant for police departments in the 1980's. Originally it was designed to add full-time firefighters and this remains its primary focus.

In recent years, however, funding eligibility has been broadened to cover incentives and pay for volunteer and part-time personnel. Hence, although North Oldham has not previously applied for a SAFER grant it might consider this as a means to add staffing in the future. The grants are renewable and in worst-case scenarios, at the end of the grant, if the District might have to reduce on-duty strength to cover positions which have not become self-funding through the retirement or resignation of other members.

The next page captures a portion of the FEMA website regarding SAFER, with additional information in **Appendix 7**. Also on the next page is **Table G,** a listing of the Kentucky SAFER recipients so far this year.

Other Grants:

The North Oldham Fire Departments can likely qualify for various grants described below, most of which are awarded based upon competitive application. See, for example, the recently published articles in **Appendix 8** regarding Homeland Security Grants in Kentucky and a story of Gant Funding awarded to the Madison Township Fire Department, a department similar to North Oldham. This Department received $ 189,791 for operations and safety upgrades through a Federal AFG (Assistance to Firefighters Grant.)

Several years ago, a tragic story broke about seven children dying in a Brooklyn, New York residential fire. Similar sad scenarios are sadly repeated too often and leads many fire departments to reconsider the balance between fire prevention and fire suppression. See **Appendix 9** regarding a new NFPA grant for residential sprinklers, along with an exhortation for Chiefs to support Residential Sprinkler legislation, a topic touched upon in the next section of this report.

The Assistance to Firefighters Act, commonly called the Fire Act Grant, has been available since 2001, and provides about $650 Million in funding for specific equipment, apparatus, and public education funds.

Fire Departments are often unaware of various grants available from foundations looking for ways to better society. Often there are newer topics which spur a on new grant opportunities, such as "weapons of mass destruction." (WMD) grants. These funds are available through the Kentucky State Emergency Management Agency for providing equipment and resources for homeland security issues, which often overlap the needs of firefighting personnel, particularly in the area of training, and safety gear such as SCBA's.

One note of caution is in order: any Fire Agency, which wishes to be the recipient of Federal Grant Funding, must be able to demonstrate that they utilize the National Incident Management System (NIMS)).

(From FEMA Website)

SAFER is composed of two activities:

- **Hiring of Firefighters**

–Career, combination, and volunteer fire departments are eligible to apply (interest orgs cannot apply)

- **Recruitment and Retention (R&R) of Volunteer Firefighters**

–Combination fire departments, volunteer fire departments, and national, state, local, or tribal organizations that represent the interests of volunteer firefighters are eligible to apply (career fire departments cannot apply)

- **If you want to apply for both activities, you will need to submit two separate applications**

Table G

2017 SAFER Recipients in Commonwealth of Kentucky

Fire Department	Location	Activity	Amount	Award Date
Montgomery County Fire Protection District	Mt. Sterling	Hiring	$526,924.00	7/14/2017
Kirksville Volunteer Fire Department	Richmond	Recruitment	$1,800.00	8/11/2017
Alexandria Fire District*	Alexandria	Recruitment	$687,818.00	9/1/2017
Central Campbell County Fire District*	Cold Spring	Hiring	$371,850.00	9/1/2017
West Marshall Fire Department	Benton	Recruitment	$48,000.00	9/1/2017

RELEVANCE OF SPRINKLER SYSTEMS

The silent protectors in North Oldham, the sprinkler systems, can be overlooked and underappreciated. There is a genuine reduction in fire loss potential, however, and those entrusted with fire protection should consider their role in a community.

The North Oldham Fire District could even some day consider the adoption of an ordinance requiring residential sprinkler systems in new construction and significant remodel projects, but it would probably have to be part of a county-wide imitative and would be an uphill battle.

There are some big obstacles that make adoption of an ordinance unlikely:

- Mini/Maxi provisions in state law, (affirmed in Franklin Circuit Court action 08-CI-01439) do not permit local governments from imposing codes more restrictive than state codes and Kentucky does not presently require residential sprinklers in new construction as part of its residential code.
- Builder groups like the National Association of Home Builders actively campaign against these type ordinances wherever they are attempted. News articles are abundantly available on this activity and their position against mandatory installation is plainly stated on their web site although they do not express any opposition to voluntary installation.
- Local politicians would need to become more aware of the potential savings in lives and insurance premiums and be willing to legislate to make changes.
- The entertainment industry does sprinkler systems no favors, frequently misrepresenting how they actually work for comic effect. Ironically this state is best known in the Fire Service history books for having "hosted" an entertainment event that killed 164 people at the "Beverly Hills Supper Club" in 1977. This was a venue that had no sprinklers

Modern construction materials are lightweight and affordable but create a safety problem for firefighters because these newer materials have poor performance under fire conditions. The type of fire faced now is very different from a generation ago. Materials inside structures today are much more likely to be a variety of plastics and composites that burn faster and hotter than in years past (when most contents in a structure were natural products like wood, cotton and wool).

This problem has been well-documented in fire service publications for some time and a look at educational courses available nationally for firefighters to attend address the challenges and sometimes needed changes in tactics to deal with these problems. Automatic sprinklers can mitigate the dangers imposed by both modern building materials and the hotter burning contents by stopping the fire early in its tracks.

While the adoption of a mandatory sprinkler requirement may not be likely any time soon, The Consultants feel that Fire Service leaders and the Board can remain aware of changes in laws and attitudes that could someday make this more viable.

See **Appendix 10** for an excellent article from the *Chicago Tribune* on Residential Sprinklers, and note the latest statisics on Firefighter and Civilian Fire Fatalities in the Inset below:

Per National Fire Academy Website: Recent fatalities reported to USFA:

This Year: Home fire fatalities (As of 9/23/17): 1,525

Down 2 percent compared to fatalities reported from Jan. 1 – Sept. 23, 2016.

21 home fire fatalities were reported by the U.S. news media for Sept. 17-23.

Older adults (65 and over) represent 28 percent of all fatalities.

New York **leads the nation in reported fatalities with 84.**

This year: On-duty Firefighter Fatalities (As of 9/23/17): 69

MANDATED SMOKE ALARMS

Dick Filippini of Pewee Valley, as a Task Force Member five years ago, noted that while getting a sprinkler ordinance passed is probably a long shot there is another alternative that should be relatively easy to gain approval from the Oldham County government. His suggestion is from the nearby Louisville Metro.

In Louisville Metro every time a residential property is bought/sold, 10 year lithium battery smoke detectors must be installed by the Seller. A copy of the affidavit that must be signed at closing and copy of the pertinent sections of the ordinance follow.

94.03 INSTALLATION AND MAINTENANCE.

(A) The owner of a dwelling shall be responsible for supplying and installing in an operable condition, the required detectors and for providing the manufacturer's maintenance and testing instructions to the tenant.

(B) The owner of a dwelling shall be responsible for maintenance and testing of detectors, in accordance with manufacturer's instructions, which are located in common areas and/or detectors in rooming units where the tenant usually has periods of occupancy, (less than 30 continuous days, such as, hotels, motels, tourist homes).

(C) The tenant shall be responsible for maintaining and testing the detectors, in accordance with the manufacturer' instructions, which are within his or her exclusive control during the life of the tenancy. The tenant shall be responsible for notifying the owner in writing when detectors become inoperable, and the owner shall have ten days after receipt of such written notice in which to replace or repair the detectors in an operable condition. In the existing single station, battery-operated types of detectors, battery replacement will not be allowed. In the event existing detectors with standard batteries are found inoperable, the units shall be replaced with at least smoke detectors powered by a hardwire AC primary power source or a self-monitored, non-removal ten-year lithium battery.

(D) At every change of tenancy in all multi-family residential units and dormitories, it shall be the duty of the owner to test and ascertain that those detectors contained in the unit are in operable condition, and if not, the owner shall be responsible for placing them in operable condition. Further, in the event existing detectors with standard batteries are found inoperable, the owner shall be responsible for replacing such detectors with at least smoke detectors powered by a hardwire AC primary power source or a self-monitored, non-removal ten-year lithium battery.

(E) In all hotels, motels, rooming houses or tourist homes it shall be the duty of the owner to test such detectors on a regular basis in accordance with manufacturer's instructions, and the owner shall be responsible for maintaining such units in an operable condition. A log of smoke detector inspections and findings shall be maintained by the owner, and shall be made available to fire inspectors upon request.

(F) It shall be the responsibility of the property owner to install at least smoke detectors powered by a hardwire AC primary power source or a self-monitored, non-removal ten year lithium battery before transfer of the property to a new party. A signed affidavit of the property owner, given to purchaser, seller, and real estate agent before transfer will suffice in meeting this requirement.

(G) Where AC powered detectors have been installed and maintained in accordance with previous ordinances, they shall continue to be used in accordance with the manufacturers installation and maintenance guidelines. Such smoke detectors that are found to be non-operational, damaged, or missing shall be replaced with a hard wire AC powered smoke detector of similar or like-type.

A listing of Louisville Metro Ordinances are available at: http://www.amlegal.com/loukymetro_ky

Affidavit of _____
Property Owner

****

The Affiant after being duly sworn, states as follows:

My name is _____. I am the owner of the property located at _____ in Jefferson County, Kentucky.

I hereby attest that the property located at _____ in Jefferson County, Kentucky has been transferred to a new party. I further hereby attest that in accordance with Section IV(F) of Ordinance 69, Series 2003, I have installed approved type smoke detector(s) in accordance with Section III(A) of Ordinance 69, Series 2003 prior to the transfer of said property.

I hereby attest that I understand that in order to comply with Section III(A) of Ordinance 69, Series 2003 only ionization or photoelectric type detectors approved by a nationally recognized testing laboratory shall be installed. Approved type smoke detectors are defined as smoke detectors with a hard wire AC primary power source operated from an outlet not controlled by any switch other than the main power supply and fitted with a plug restraining device or by self-monitored, non-removal 10 year lithium batteries.

_____
Property Owner

_____
Date

STATE OF KENTUCKY

COUNTY OF JEFFERSON

Subscribed and sworn to before me by _____
this _____ day of _____, 20_____.
My Commission expires: _____

_____
Notary Public

(A) In all dwelling units, smoke detectors powered by a hard wire AC primary power source or a self-monitored, non-removal ten-year lithium battery shall be installed and maintained after the effective date of this subchapter. Single station detectors presently installed utilizing standard batteries may continue to be used as long as the units remain operational. Should an inspection of the concerned properties reveal these units out of service due to a low or no battery, it will be cause to replace the units with at least smoke detectors powered by a hard wire AC primary power source or a self-monitored, non-removal ten-year lithium battery.

(B) In order to comply with this subchapter, only ionization or photoelectric type detectors listed by a nationally recognized testing laboratory shall be installed.

(C) Smoke detectors shall be installed in accordance with applicable NFPA standards and the manufacturers recommendations. Detectors may be ceiling or wall mounted, provided that they shall be mounted at a minimum of four inches and a maximum of 12 inches from the ceiling, and not closer than four inches from the point at which the ceiling and wall meet.

(D) In a dwelling unit, which contains a well-defined sleeping room separated from the other activity areas of the same unit, the detector shall be located in the corridor within the unit or interior area giving access to the rooms used for sleeping purposes. Where sleeping areas are separated and/or where a single smoke detector will not adequately service all sleeping areas, there shall be a smoke detector installed adjacent to each sleeping area. In a rooming unit the detector shall be centrally located.

(E) In a dwelling containing two or more dwelling units or any rooming unit, in addition to the requirements for individual smoke detectors in each dwelling unit or rooming unit, detectors shall be placed in centrally located common areas so that smoke detectors will adequately service all sleeping areas.

(Lou. Metro Ord. No. 69-2003, approved 4-16-2003)

While awaiting staffing at Skylight, one consideration might be to install lithium battery smoke detectors in all residences in the district. This will give early alert and could easily prevent fatalities. The consultants would argue that this is more important in terms of life safety than a nearby staffed fire engine if only one of the two were possible. Below is a recent article showing how Lexington gained a grant to achieve this.

abc 36

LFD receives $15,000 grant to buy & install smoke detectors

0 Comments for this article

By: Tom Kenny

Submitted: 10/10/2017 - 8:03pm

LEXINGTON, Ky. (WTVQ) – The Lexington Fire Department received a $15,000 grant Tuesday to purchase and install smoke detectors in Lexington homes that currently don't have the potentially life-saving device.

Columbia Gas of Kentucky presented the grant from the NiSource Charitable Foundation.

The grant will pay for an estimated 1,150 smoke detectors. The units will run off lithium batteries, which only need to be replaced every 10-years.

The installation program is scheduled to begin in November of this year, according to the fire department.

The fire chief says the department will begin installing the detectors in the Cardinal Valley area.

As fires have become less frequent, fire departments have taken on other responsibilities, including EMS assists, but also hazardous materials, technical rescues and other new specialties. The history of fire occurrences in North Oldham shows that fires have almost always been controlled in the building of origin by fire protection delivered by the Fire Department. The number of actual fires was shown earlier to be about the same each year, despite growth in population. Meanwhile the fire department is providing ever more service in technical rescue, EMS assists, Carbon Monoxide (CO) alarms and Hazardous Materials (Haz-Mat) operations

FIRE DEPARTMENT/EMS INTERFACE

Oldham County runs a totally separate emergency medical service system, but because of the close alliance between Fire and EMS, the operations of the Fire Departments are affected directly by EMS operations. (See Overlap next page)

Left: Oldham County EMS Station Constructed alongside the LaGrange Fire Station in Buckner

We recommend that North Oldham continue to respond on all "EMS assist" calls, usually arriving at the scene of an EMS emergency before the Oldham County EMS unit. Fire units and EMS units must operate seamlessly at auto accidents where extrication is needed. In Oldham County, as in most areas of the country, medical calls outnumber fire calls by ratio of 5 to 1. County EMS automatically responds to all structure fires. See below the location of the staffed County ambulances, and on the following page See **Figure 1**, a graphic depicting the overlap between Fire and EMS.

Oldham County EMS hours and locations

1. 6244 Old LaGrange Road suite 10, Crestwood KY 40014

   One ambulance 24/7

2. 1101 New Moody Lane, LaGrange KY 40031

   One ambulance 24/7; One ambulance 10am-10pm

3. 3639 W Hwy 146, LaGrange KY 40031 - One ambulance 6am-6pm

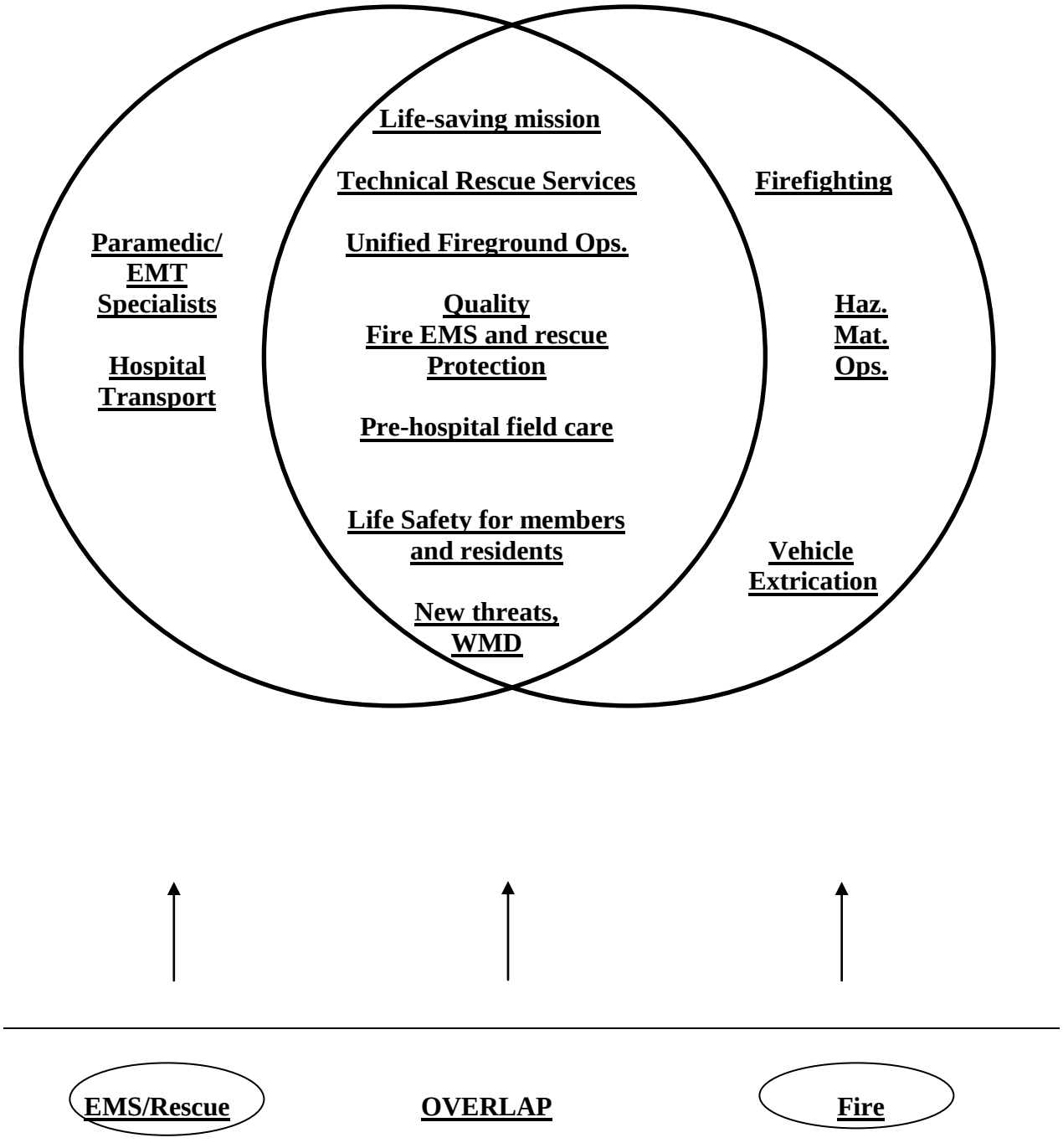
4. 1660 Hwy 1793, Goshen KY 40026

   One ambulance 6am-6pm

5. 8615 Hwy 42, Goshen (Skylight) KY 40026 -- One ambulance 6pm-6am

Figure 1

The Rescue/EMS and Fire Operations Overlap



PROVIDING FIRE DEPARTMENT ASSISTANCE FOR EMERGENCY MEDICAL RESPONSE

It is not unusual for Oldham County to experience simultaneous emergency medical runs. When this occurs first response by the fire departments becomes more important. Fire protection then is depleted in direct proportion to the escalating number of emergencies. Likewise, a serious fire would utilize any on-duty personnel and EMS runs would have to be handled by Oldham County EMS alone, or if help is needed, from more distant fire units.

This happens in communities of all sizes all the time. A fire department can only afford to staff and equip itself for the ordinary and probable, not the unusual times when resources become totally depleted and calls are "stacked." Oldham County has assistance available from other communities and can backfill its stations with mutual aid units during such times. The increasing demands for service placed on the Fire Department over time were analyzed in an earlier section. Consistent with national trends, the frequency of actual fires is declining in Oldham County and the number of fire calls (alarms, smoke scares, etc.) has shown only moderate growth. Emergency medical services, however, continue to grow in number and importance.

At times both fire and EMS units respond to medical emergencies, causing well-intentioned citizens to question whether this is a waste of resources. It is actually a worthwhile investment for the taxpayer and provides a safer working environment at EMS scenes. The fixed costs for the fire department do not rise and the fire crew remains intact and available for any higher priority fire call. (See Hopkinsville Inset below, where similar logic would apply to North Oldham on a lesser scale, since EMS calls are about 60% in North Oldham and 80% in Hopkinsville) We believe that there are great benefits to North Oldham making all EMS calls in the District, even though they arrive on a larger fire fighting vehicle. See **Figure 2** on the next page for Oldham County protocol.

In Hopkinsville Kentucky the total annual fire budget is $5.4 million most of which is for wages, fringe benefits and pension contributions. The total fuel budget for the entire fire department fleet including fire apparatus vehicles and ambulances is $40,000. Hence if fire vehicles make four times as many emergency medical runs as fire runs a 400% increase in the return on the huge salary investment is given to the community. Sending an accompanying engine to EMS calls causes the fuel to increase by $15,000 to $20,000 and we factor in the wear and tear and depreciation on apparatus perhaps we would have as much as a $100,000 per year total investment in the fire companies making EMS runs, exclusive of the salaries. Hence by sending these engines, the fuel and maintenance budget increases by about 30% but the total fire department budget increases only by 2%. In exchange for this 2% we have this tremendous return on the major investment of salaries. Another positive financial consideration is that costs are offset by reduction in workers comp claims, formerly a problem when understaffed emergency medical crews tried to lift heavy patients.

FIGURE 2 -- Oldham County Fire Department Protocols for First Response to EMS Scenes

EMS runs on Hwy 329 from Constantine Dr .t o J. C. line send M 141. Any EMS runs in Riverbluff or Countryside with a Harrods Creek box# send M141 in both instances above. Send NOFD first responders if it qualifies.

NOTE: First responders are not automatically required for calls originating from skilled nursing facilities or other staffed medical establishments. This includes nursing homes and doctors' offices during business hours.

NOTE: North Oldham and Westport Fire Departments have requested first response dispatch on all emergency calls for service originating in their respective districts. lst responder departments will be dispatched with EMS on the following run types:

. Abdominal pain with known pregnancy
. Active labor/imminent delivery/delivery
. Allergic reaction
. Any uncontrollable bleeding
. Burns to head or torso
. Cardiac arrest
. Chest pain/cardiac
. Choking/Obstructed airway
. Confusion/Altered mental status
. Diabetic emergency
. Drowning/near drowning
. Electrocution
. Fall greater than 6 '
. Hazardous Materials/Chemical exposure
. Penetrating trauma (gunshot, stabbing, impalement etc.)
. Possible stroke
. Respiratory distress/Short of air
. Seizure
. Terrorist event
. Unconscious/unresponsive
. *Any other call as requested by responding paramedic*

1st Responder Departments

13 – Ballardsville
14 -- North Oldham
18 – Worthington
19 -- Westport
45 -- LaGrange
54 -- South Oldham

The North Oldham Fire District has adopted a reasonable response policy putting citizen welfare as a priority and sending adequate size crews to handle medical emergencies, even when some of those crew members arrive on a fire fighting vehicle.

While at first blush it may seem extravagant to have a full-size pumper truck on an emergency medical call this must be taken in context. The crews on the fire vehicle remain mobile, versatile, and available for fire calls.

The assistance of the engine crew at EMS calls makes for a more efficient provision of emergency medical care. There are numerous functions to be performed so that adequate personnel make care more efficient, timely, safer, and to a higher standard than seen in other communities that do not provide comparable responses. Lifting of heavy patients, for example, is greatly facilitated, reducing back injuries for ambulance personnel.

The additional responses keep personnel interested in serving, allow them to remain familiar with their running areas and the clientele that they serve and the fixed cost of the apparatus is spread across much more service delivery to the community. Just is with the Hopkinsville example a few pages previously, he additional fuel and maintenance are well worth the cost in the opinion of this consulting team.

The district does not receive EMS revenue, as EMS transports by ambulance are the purview of the Oldham County EMS system and they receive these funds provided to the town through insurance providers. The attractive income dollars from EMS transports, however, may not always be there. See **Appendix 11**, for example, where a recent article depicts new Medicare reimbursement restrictions, an indicator that ambulance service income is not guaranteed to remain at current levels.

In the first two entries in **Appendix 12** we include information recently published regarding “Community Paramedicine," and in the third entry in **Appendix 12** we provide an article on the related concept of "Integrated Mobile Health Care." Both are designed to substitute "wellness checks” or house calls to reduce needless uses of the 911 transports. There may be new funding for these services since hospitals want to avoid the costly fines for "readmitted patients." It could someday be a new role for North Oldham personnel.

KENTUCKY REVISED STATUTE (KRS) 75

It is reasonable to ask where the Fire Department gets its authority to operate, charging into the homes and properties of complete strangers without search warrants, and at a moment's notice.

On the nest page is some relevant information relative to the formation of Fire Districts. Then, in **Table H**, two pages hence, additional information is provided relative to the Oldham County Fire Departments.

Kentucky Legislature

KENTUCKY REVISED STATUTE (KRS) 75

It is important to view KRS 75 (Article 75 of the Kentucky Revised Statutes).
The Kentucky Legislature uses this statute, last updated in July, 2011, to govern such issues as:

- .010 Establishment of fire protection or volunteer fire department district.
- .015 Formation of fire protection sub district -- Tax levy -- Expenditure of tax revenues -- Separation of sub district amounts in tax billing and in accounting.
- .020 Annexation or reduction of territory -- Expansion into territory served by fire department -- Assumption by city of debt -- Merger of districts.

An outline of the contents of this statute can be found in **Appendix 13.** The Consultant learned during the Task Force deliberations that all the existing districts in Oldham County were formed at the State Level, Changes in Districts or District Boundaries would have to be done by the Circuit Court, not through the County Fiscal Court. See **Table H,** next page**,** for a breakdown on the dates when Districts were incorporated.

At some time in the future it might be in the interest of the greater community to attempt various mergers of departments within Oldham County. North Oldham may, for example, consider merging with Westport.

Mergers do occur among districts and can lead to efficiencies but are difficult to achieve. See a somewhat dated but still relevant article from the *Louisville Courier-Journal* in **Appendix 14** regarding fire district merger efforts in this area. This article, published August 5, 2012, portrays merger challenges and other problems faced by the suburban fire districts in nearby Jefferson County.

Many county and local officials have worked through available channels to facilitate mergers when they are in the best interest of their citizens.

Table H Incorporation; Growth Information

	North Oldham	*Ballardsville*	*LaGrange*	*Pewee Valley*	*South Oldham*	*Westport*
Date Founded	**1951**	**1952**	**N.R.***	**N.R.**	**1950**	**N.R.**
Date Taxing District Formed	**1976**	**1975**	**1974**	**N.R.**	**1974**	**N.R.**
Original Number of Stations	**1**	**1**	**1**	**1**	**1**	**1**
Stations Now	**2**	**2**	**3**	**2**	**2**	**1**

*N.R. = "Not Reported"

FIRE DEPARTMENT ROLLING STOCK

The consultants believe that North Oldham Fire District (NOFD) is currently fielding a quality apparatus fleet to meet District and County needs. Chief Conway has maintained a reasonable replacement schedules to plan for these large capital investments.

In the future, fire departments might want to coordinate joint apparatus purchases across district borders so as to minimize redundancies and encourage standardization of equipment.

Depending upon mileage and actual usage the typical replacement schedule for engines is 15-20 years, and the typical replacement schedule for ladders or "quints" is 20-25 years. This may vary in the future in direct proportion to the rate of technological innovation in apparatus and their applicable industry standards. Although not relevant directly for North Oldham, the typical replacement schedule for ambulances is 5-7 years.

The consultant has reviewed the fleets and found them all compliant with these recommended replacement suggestions. The next several pages show current vehicles in the North Oldham fleet. Key pieces of equipment are shown on the following pages.

You will note that one suggestion by the consultants is that the Quad currently located in Goshen, could be exchanged for a more maneuverable smaller piece, as shown four pages hence.

APPARATUS

Engines 1431 & 1432

First-out pumpers

Above: Fire Boat; Below Seagrave "Quint" with 75' aerial ladder

Tankers 1461 & 1462

Each tanker holds 2000 gallons of water

Consultants feel that this Quad (Four functions of water, hose, pump and ground ladders) could be exchanged for a more maneuverable smaller piece, For example, see the unit below from KME website: This would be more powerful but almost as maneuverable as the Forestry Truck currently in the NOFD Fleet (Next Page)

KME Presents: MINI PUMPER | WILDLAND

"Mini-Pumpers Are Similar to Quick Attack Units, But Feature High-Volume Midship Pumps with Capacities Up to 1250 gpm or More"

"These trucks are designed as more mobile counterparts to the full size pumper. Many departments use this type of unit to go where larger units can't – up a driveway, down a mountain path, on the shoulder of a freeway, or even to the backside of a garden apartment complex. The large pumps may be used for both attack and supply. These units are usually built to comply with NFPA 1901, but can also be equipped with most of the specialty off-road options from our Wildland quick attack line."

The Consultant reviewed the fleet of the North Oldham Fire District and found a serviceable inventory of fire apparatus, matched well to community needs, with no vehicles needing immediate replacement. Like all fleets, however, the component vehicles are continually aging. The consultants use as a guide the National Fire Protection (NFPA) 1901 Standard of Fire Apparatus. According to NFPA 1901 Annex D, "Guidelines for First Line and Reserve Apparatus," essentially takes into consideration all of the operational and safety changes that have evolved over the past years of updates in the apparatus standard. It states the following:

"It is recommended that apparatus greater than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status and upgraded in accordance with NFPA 1912, *Standard for Fire Apparatus Refurbishing*, to incorporate as many features as possible of the current fire apparatus standard." This will ensure that, while the apparatus might not totally comply with the current edition of the automotive fire apparatus standards, many improvements and upgrades required by the recent versions of the standards are available to the firefighters who use the apparatus. **Appendix 15** contains an article on NFPA Standard updates.

"Apparatus that were not manufactured to the applicable apparatus standards or that are over 25 years old should be replaced." This should be of no immediate concern to the North Oldham Fire District

Left: Forestry Truck 1477, 1996 Ford F-250 4X4 250 Gallon Tank 500 GPM Pump

According to NFPA 1901 Standard "Heavy fleet" is defined as vehicles weighing greater than 30,000 pounds, e.g. fire trucks of various assortments. Medium fleet is defined as vehicles weighing greater than 10,001 pounds, e.g. brush rig. Light fleet is defined as vehicles weighing less than 6,000 pounds, e.g. sport utility vehicle (SUV). We reviewed the listing of vehicles in North Oldham Fire District fleet and found that all vehicles score well in terms of three key criteria:

1. Reliability
2. Liability
3. Serviceability

The consultants reviewed in detail the equipment carried and determined that the North Oldham Fire District has a fleet adequate and serviceable and within the guidelines established by NFPA standards found in the appendices to this report.

While improvements are possible as new apparatus is introduced into the department, the existing equipment remains functional for the fire personnel, allowing them to fulfill their mission and address the job-related hazards found within the community. The one suggestion would be to consider swapping the quad for a four-wheel drive mini pumper.

The North Oldham Fire District Ladder is not only an aerial ladder but is a "quint" and has the ability to carry and pump and deliver water, adding to its versatility. For departments the size of North Oldham, the consultants feel the quint concept should continue. (See description below) The fire department does have enough pumping capacity without this feature, but definitely needs to have aerial ladder capabilities readily available in the District. The ladder can be used for a solid rescue bridge to roofs and windows of buildings of all sizes.
See **Appendix 16** regarding the pros and cons of a Ladder vs. a Platform.

Quint by definition

Before this discussion goes any further, let's make sure that we're talking about the same animal. Today's quint is designed to provide five tools for firefighters to carry out these tactical firefighting functions:

- Supply fires streams (pump and hoses);
- Provide initial and continuing water supply (pump, water tank, and hoses)
- Provide personnel with access to elevated areas (ground ladders)
- Provide personnel with access to elevated areas (aerial ladder)
- Provide elevated master fire stream (pump, hose, and aerial device)

The National Fire Protection Association outlines the requirements for a piece of apparatus necessary to function as a quint in NPFA Standard 1901, The Standard for Automotive Fire Apparatus. Here is a summary of the quint requirements as detailed in Chapter 9 of the standard:

- Fire pump with a minimum capacity of 1,000 gallons per minute
- Water tank with a minimum capacity of 300 gallons
- Aerial ladder or elevating platform with a permanently installed waterway
- Hose storage area with a minimum of 30 cubic feet of storage area capable of accommodating 2.5 inch or larger fire hose; two hose storage areas, each with a minimum of 3.5 cubic feet or 1.5 inch pre-connected hose lines.
- Compartments with minimum of 40 cubic feet for equipment storage
- Complement of ground ladders containing a minimum of 85 feet of ground ladders, including at least: two extension ladders, roof land attic ladders
- A minimum of 15 feet of soft suction hose or 20 feet of hard suction hose for drafting.

Tracking of the hours and mileage on all North Oldham Fire District Vehicles is important. The North Oldham Fire District maintenance costs appear to be similar to those departments with comparable fleets

In the future the North Oldham Fire District could expand its role in specialty functions such as advanced technical rescue and haz-mat mitigation. If so, apparatus specifications should allow for adequate compartment space and other design configurations that will facilitate this broader role.

Consultants reviewed all records as shown below and were pleased to see that that all were up to date, or being addressed as follows:

- Aerial Ladder Test current and satisfactory
- Ground Ladder Tests current and satisfactory
- Pump tests current and satisfactory
- Hose tests current and satisfactory

When maintenance costs for any one vehicle exceed what would be a lease payment for a new replacement, it is time to remove it from the fleet**.**. There is always a balancing act between the ever-increasing maintenance costs of an aging vehicle and the large capital cost of a new one. The North Oldham Fire District balances these fairly well. One thing to remember is that a vehicle without a certified pump and or ladder is worth only a "yard sale" or scrap value.

The equipment carried on the vehicles is as important as the transporting apparatus pieces and attention should be given to often used tools to ensure their reliability. The consultant recommends the following for the North Oldham Fire District regarding fleet management.

1. North Oldham should continue the Preventative Maintenance (PM) program of its fire fleet, and should continue utilizing an EVOC (Emergency Vehicle Certified). The County Chiefs need to be in the loop when vehicles are out of service, so as to fill voids in response.

2. North Oldham should consider the use of an alternative powering source when fire apparatus are at idle at the scenes of emergencies when the pumps or aerial devices are not in use. There are several brands on the market; some utilize a 12-volt battery system, while others utilize a small diesel generator.

3. North Oldham should certainly continue its use of class A structural fire foam in hose line operations which reduces the amount of water needed to suppress most room and contents fire; the use of class “A” foam could also reduce the probability of a fire rekindling, not to mention the pump time at fire scenes. Class A foam virtually triples the extinguishment capability of water carried on vehicles.

APPARATUS USAGE VS. MAINTENANCE COSTS

At the request of the NOFD Board, Chief Conway obtained calculations showing maintenance costs vs. usage. These are captured in Table H-2 on the following two pages.

Table H-2 -- North Oldham Fire Dept.

Vehicle Maintenance record and usage schedule

Year	Brand	Description	Mileage	Average annual repair and maintenance costs	Average annual number of times vehicle is used
1401	2012 Ford Expedition	Command Vehicle			
2015			19,453	$764.50	Daily
2016			19,380	$725.76	
2017			19,664	$1941.76	
1402	2010 Ford Expedition	Command Vehicle			
2015			12,469	$984.78	Daily
2016			11,178	$424.48	
2017			12,991	$154.94	
1431	2010 CustomsFire	Pumper			
2015			3191	$10615.02	250 times a
2016			2754	$3736.80	Year
2017			3124	$1498.94	
1432	2010 CustomsFire	Pumper			
2015			3939	$15,195.09	250 times a
2016			3262	$14,530.46	Year
2017			3327	$7547.46	
1441	2010 CustomsFire	Quad			
2015			1011	$6689.80	24 times a year
2016			970	$3914.58	
2017			580	$3648.20	

↓

Table H-2 continued (Page 2 of 2)

1455	2002 Seagrave				
2015			578	$4525.09	12 Times
2016			294	$4991.04	A year
2017			266	$11,551.28	
1461	1997 Freightliner	Tanker			
2015			196	$5294.61	4 times a year
2016			78	$814.60	
2017			266	$725.90	
1462	1997 Freightliner	Tanker			
2015			138	$5334.54	12 times a year
2016			229	$1980.60	
2017			91	$4500.10	
1477	1996 Ford F-250	Forestry Unit			
2015			296	$188.88	18 times a year
2016			554	$424.18	
2017			353	$790.54	
1491	2009 Munson Packat	Fire Boat			
2015			10 hours	$6064.66	12 times a year
2016			8 hours	$861.30	
2017			12 hours	$1232.05	
1497	2006 Ford F-150	Utility vehicle			
2015			7727	$335.17	Daily
2016			11,221	$2612.25	
2017			7162	$78.10	
1499	2007 Ford Expedition	Utility vehicle			
2015			266	$72.14	3 times a year
2016			198	$78.10	
2017			363	$309.74	

THE FIRE BOAT

A recurring topic of interest during this study is the Fire Boat, shown below, which has recurring maintenance costs with little apparent return on its value. Nonetheless the consultants believe that any community adjacent to a major waterway should maintain a boat.

Occasionally there may be a boat fire or need for water rescue although this is admittedly rare. During times of flooding, a fire department boat can be the only lifeline. In Houston during the unexpected flooding during the recent Hurricane, a lack of boats was identified as a severe deficiency in the Houston Fire Department. While this is admittedly a much larger scale example, the principle remains. One boat in North Oldham provides a dimension of service that cannot be delivered by other equipment in the fleet.

We would recommend a decommissioning of the boat only if it were to supplement land staffing, (For example to pay for staffing in Skylight until growth could provide sustainable revenue for such purpose.) If North Oldham were to disband its marine capabilities, it would only obtain a "Yard sale" rate of return on this already made investment.

Also, with no boat in North Oldham, the department should arrange for Westport to provide this service immediately and even go so far as to train North Oldham personnel on the Westport boat, and have an agreement that North Oldham can staff it if Westport personnel are scarce or unavailable. (Elsewhere in this report we mention a possible merger of Westport and North Oldham)

. On the following page we show the Westport boat, along with one from Covington, Kentucky.

Westport Fire Boat in Operation

Covington Fire Department "Fireboat 1"

The City of Covington, Kentucky is located on the Ohio River across from Cincinnati, Ohio. The Covington Fireboat 1 is a 2011 MetalCraft Marine FireStorm 30. Equipped with twin Evinrude 300 HP outboards it is capable of 34 knots.
34' LOA - 10' 6" beam

The boat is docked across the river from the Cincinnati Reds' ballpark.

ORGANIZATIONAL LEADERSHIP

Most organizations can benefit from a change in leadership from time to time, and the North Oldham Fire District seems to have been give a "shot in the arm" when Tim Conway was appointed as Fire Chief. Others follow his example, show dedication and strengthen the chain of command. Personnel who pull duty time for relatively meager wages. although stretched thin, bring commitment to the job and usually deliver quality service.

The continuation of a competency based selection process is recommended for all officers. Selection in this fashion presents a proactive approach to the increased activity that the North Oldham Fire District will see and will feel many years into the future.

Officer Development

Strong leadership is a hallmark principle of an effective fire organization. NOFD may want to plan ahead and prepare future leaders through various programs that are available, often at little cost. Knowledgeable instructors from the region can put on seminars and workshops with the latest topics in fire control and rescue operations.

Specific recommendations for the organizations include targeted training at every level of the department, including operational, managerial, and leadership preparation. Prior to the transition to a new chief, candidates can be more prepared by assuring that lieutenant-level officers have been trained in operational courses like Managing Company Tactical Operations (MCTO) at the National Fire Academy or in an outreach program. The latter would be more practical for North Oldham. See **Appendix 17** for recent information on National Fire Academy Offerings.

Attention to available developmental courses and training will help build the Department's foundation of knowledge, as well as create a healthy, competitive environment for the organization.

Below are some of the latest programs available for officer development:

1. *IAFC Company officer leadership symposium*
http://www.iafc.org/micrositeFRIconf/Education/Content.cfm?ItemNumber=6593&navItemNumber=6465

2. IAFC Company Officer Mentoring Program
http://www.iafc.org/CompanyOfficers/CompanyOfficerMentoring.cfm

3. National Fire Academy Managing Fire Officer Program
http://www.usfa.fema.gov/training/nfa/programs/mo_program.html

4. Center for Public Safety Fire Officer Designation
http://publicsafetyexcellence.org/professional-credentialing/fire-officer.aspx

Chief Conway has instituted a culture of job knowledge, ensuring that members don't just say they are training and write it down, but become proficient in all the key job requirements so

that the training records now reflect reality and genuine accomplishment. These internal quality improvements are one of the best Officer Development tools since such culture is contagious and should be especially so among the Officers.

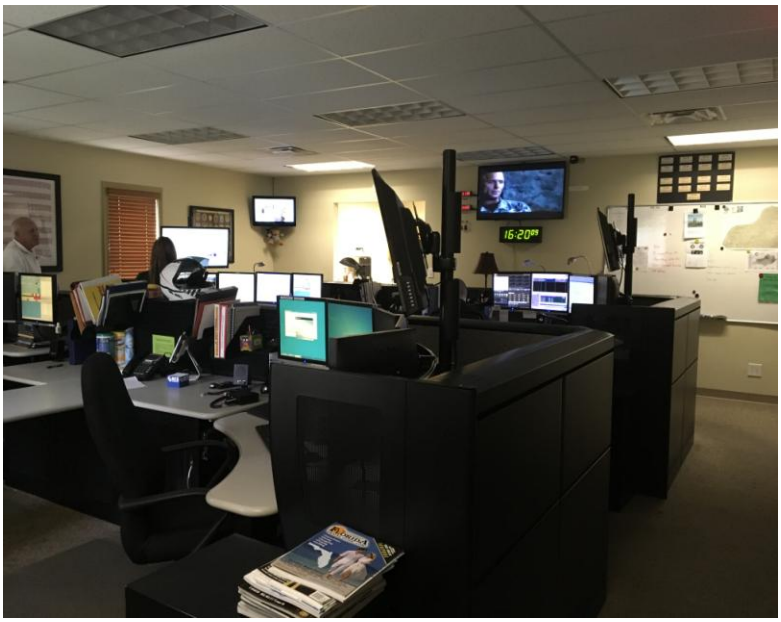
If budgets allow advanced training is available at remote locations. Chief Officers can continue to expand their skills in a leadership development course at the National Fire Academy and through courses at a community college such as Business Management or Fire Science. Ideally, the fire chief candidates of the future should be familiar with the materials covered in these courses.

Attention to available developmental courses and training will help build the Departments' foundation of knowledge, as well as create a healthy, competitive environment for the organizations.

COMMUNICATIONS AND DISPATCH.

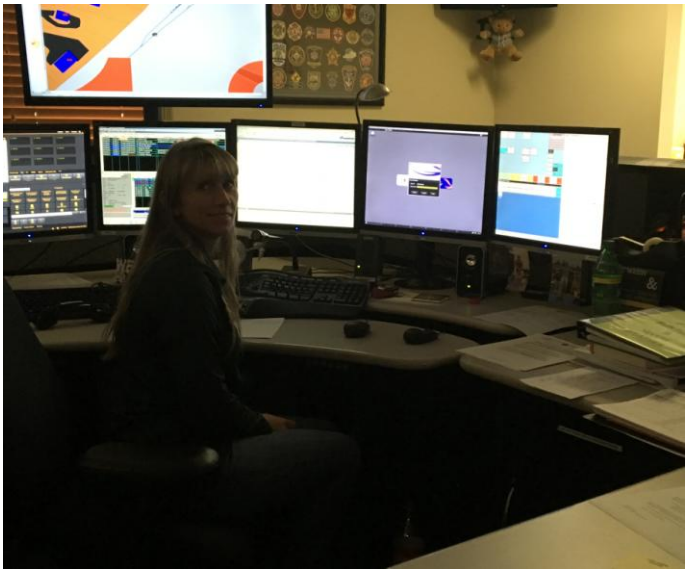
All of the 911 calls for Police, Fire and Medical come into the Central 911 Center in Oldham County, located near the Oldham County Police facility on Route 393.The latest technology is embedded in this center ensuring accurate call taking and information gathering.

Then the caller's emergency information is transferred to proper responding agencies. he consultants feel that the system is professionally operated and especially like the fact that the call-taker is also the dispatcher, so that information is not lost as can happen when these functions are handed off between different personnel.



Left: State-of-the-art Technology in the Central 911 Center for Oldham County

We will show in the ISO section of this report that there are opportunities for improvement that not only improve dispatching capabilities and capacity but also assist all Oldham County Fire Departments improve their individual ISO ratings are definite opportunities to improve operations



Left: Dispatcher alert and vigilant at Oldham County Central 911 Center

One addition that should be made a priority is the downloading of CAD information to call tracking software used by North Oldham and other County fire departments (Emergency Reporting software or its equivalent). This would go a long way to increasing the accuracy of call statistics and ensuring a consistent method of entering information into this program.

When anyone in Oldham County dials 911 for fire or medical assistance, the clock begins for the fire department. Many elements result in the final response time of the fire department to the call for help. These begin in the call-taking center and continue in the dispatch center. Time can be saved with efficient dispatch just as with efficient vehicle response. See **Figure 3** which illustrates these elements:

Figure 3 -- Response Time Equation

Call Processing Time	**+**	**Alerting Time**	**+**	**Turnout Time**	**+**	**Travel Time**	**+**	**Setup Time**	**=**	**OVERALL RESPONSE TIME**

- **Call Processing Time:** The time interval that starts when the call is created in CAD by in the County 911 center and continues until the initial Fire or EMS unit is dispatched.
- **Alerting Time:** Dispatch of the emergency call.
- **Turnout Time:** The time interval between the activation of station alerting devices to when first responders put on their PPE and are aboard apparatus and en-route (wheels rolling).
- **Travel Time:** The time interval that begins when the first unit is en route to the incident and ends upon arrival of any of the units first on scene.
- **Setup Time:** The time needed at the scene (E.g. stretching hose lines) before mitigation actually begins

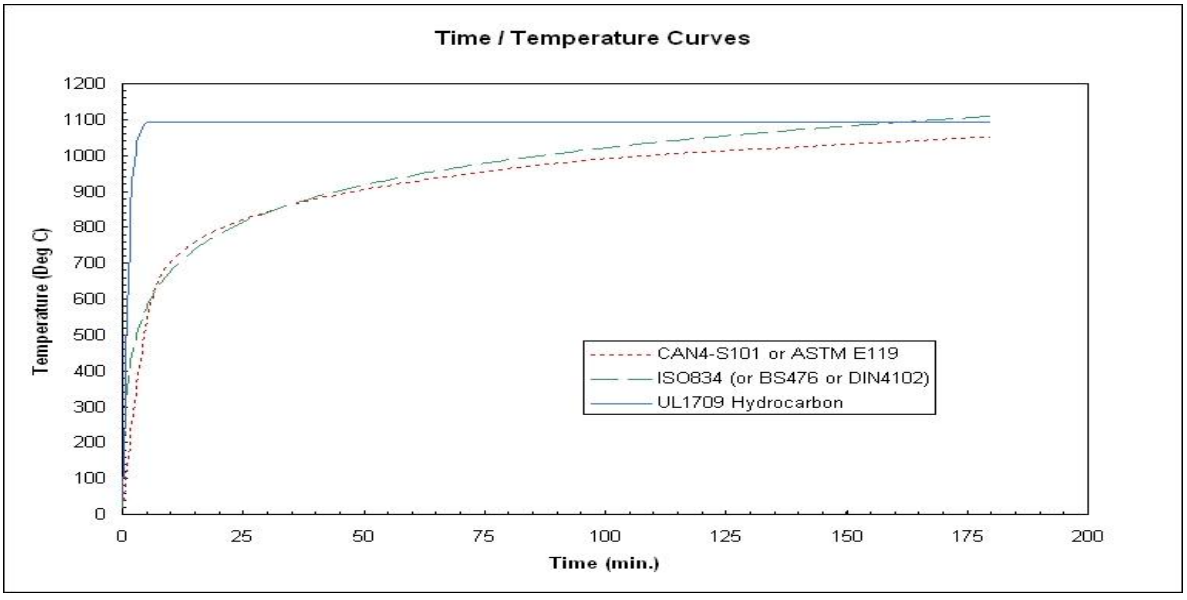
The first two factors in the equation above can be improved with call-taking and dispatch while the final three are up to the fire department. The consultant realizes that there is little that can be done to influence operations at the County 911 Center, but would like the District to review its own turnout, travel and set-up times to identify any improvements.

. **Appendix 18** contains an excellent article on reducing all response time phases.

We will see later in our report that dispatching is a key grading factor for the ISO (Insurance Services Office). The center can dispatch for North Oldham but Dispatchers also have the capability to quickly summon mutual aid or back-up units from surrounding jurisdictions.

Ideally call processing time and alerting time combined are about a minute or less, within the recommendations of NFPA standards. As seen in **Figure 4** below, the temperature of a fire escalates quickly during the first minutes. If lives can be saved, rescues must be performed prior to an event known as flashover, which normally occurs at 500 degrees Celsius for normal residential combustibles.

Figure 4 -- Time/Temperature Curve



RESPONSE TIMES IN NORTH OLDHAM

The Consultants were able to get a measure of response times by working with Oldham County Dispatch. As noted below, better metrics will soon be possible.

Response time Information from Oldham County Dispatch:

The Consultants were in touch with Oldham County Dispatch to get response time information, and received the following communiqué from Ms Tina Schindler:

"Good morning Mr. Kramer,
Mr. Nauert has forwarded me your Open Records Request for dispatch times for North Oldham Fire Department. In order to provide you with the breakdown of times you are looking for, it would be necessary to pull each run separately, which is time prohibitive for a three year period. We are, however, currently installing a new report system which would facilitate gathering the information you are requesting. We are told this should be installed sometime next week at which time we hope to provide you with the information you need for your assessment. If you would, however, prefer to expedite receiving this information, please let me know if there are specific types of runs you are looking for and I can provide those times for the current year."

If there is any other information I can assist you with, please do not hesitate to let me know.
Thank you-

TINA SCHINDLER
Oldham County Central Dispatch/
Emergency Management
502-225-5115

The consultants were pleased to see that there will be additional data available for a more accurate review of response times but for the immediate needs of this report requested a representative sample which appears in Table I, next page. this Table shows all fire runs for 2017 into October this year.

Morning sir-
Attached you will find a basic report outlining runs times for fire related dispatches to NOFD. Please note the times are subjective and not exact; i.e., Dispatch times are when a unit is assigned to a run; tones are dropped and dispatch initiated typically 40-60 seconds earlier.

I hope this is the information you are looking for. If you are looking for something different, please let me know.

TINA SCHINDLER
Oldham County Central Dispatch/
Emergency Management
502-225-5115The Ta

Below are the data items relative to all fire runs for the year 2017, an acceptable sample To the right of the chart are times calculated by the consultants as measured from "Enroute" to "On-scene " This times average 5.06 minutes (5 minutes 4 seconds). If, however, we eliminate the five longest highlighted (Typically to Skylight area), then the average response time drops to 3.97 minutes. (Three minutes 58 seconds).

NOTE; THE TIMES IN THE RIGHT MARGIN ARE MINUTES AND SECONDS AND THE CONSULTANTS WERE CAREFUL TO CALCULATE AS SUCH, ONLY CONVERTING SECONDS TO DECIMALS OF MINUTES FOR AVERAGING.

TABLE I

NORTH OLDHAM FIRE DEPARTMENT FIRE RUNS - 2017

DATE	INCIDENT	TIME CALL	DISPATCH	ENROUTE	ON SCENE	CLEARED	
1-06	structure fire-house	21:48:47	21:50:45	21:58:09	22:03:33	22:58:12	5.27
1-28	field/brush fire	20:38:51	20:41:12	20:42:38	20:51:39	21:01:20	9:01
2-10	stove fire-out upon arrival	11:25:51	11:27:05	11:27:55	11:31:22	11:46:26	3:27
2-12	brush fire - compost fire	16:13:51	16:16:14	16:18:48	16:18:48	19:08:22	0.00
2-14	brush fire-electrical box	15:37:05	15:39:53	15:40:44	15:44:39	16:27:57	3:55
2-16	field/brush fire	8:35:29	8:37:44	8:39:39	8:41:19	8:45:05	1:40
3-01	electrical box fire	6:27:18	6:30:10	6:31:53	6:37:16	6:44:10	5:23
3-18	field/brush fire	20:08:29	20:11:44	20:12:57	20:16:54	20:21:56	3:57
3-19	structure fire	8:47:56	8:49:33	8:51:47	8:53:18	9:38:33	1:31
3-23	structure fire	5:46:05	5:48:17	5:50:55	5:56:51	6:22:29	4:04
3-28	structure fire	22:12:12	22:14:18	22:17:13	22:21:21	22:53:08	4:08
4-8	field/brush fire	12:19:22	12:21:31	12:25:32	12:37:28	12:52:03	11:56
4-10	structure fire	18:58:17	18:59:54	19:01:15	19:04:34	22:21:45	3:19
4-11	field/brush fire	21:49:14	21:49:58	21:53:05	21:55:35	21:58:19	2:30
4-14	structure fire	20:32:10	20:34:13	20:37:15		20:48:18	--
4-14	non-structure/non-field	22:31:39	22:33:32	22:35:43	22:43:43	23:01:54	8:00
4-28	vehicle fire	15:15:16	15:16:54	15:17:56	15:18:36	15:45:31	0:40
4-29	non-structure/non-field	0:11:39	0:13:47	0:17:14	0:24:07	0:40:25	6:53
4-29	structure fire	2:06:09	2:08:47	2:11:15	2:24:53	2:34:34	13:38
5-3	vehicle fire	15:13:48	15:16:24	15:16:24	15:26:10	15:37:51	9:46
5-9	vehicle fire	10:46:44	10:47:22	10:49:09	10:58:00	11:47:40	8:51
5-16	field/brush fire	17:42:35	17:47:25	17:49:17		17:59:07	--
6-20	structure fire	18:19:47	18:21:56	18:24:51	18:24:51	18:41:53	0.00
6-26	structure fire-commercial	11:31:28	11:32:51	11:34:09	11:39:49	13:32:41	5:40
6-26	structure fire	22:11:53	22:13:19	22:16:25	22:22:17	23:22:15	5:52
6-28	structure fire	21:33:55	21:35:44	21:36:49	21:41:26	22:12:33	4:37
7-2	non-structure/non-field	22:12:13	22:14:57	22:17:06	22:22:43	22:54:03	5:37
7-11	structure fire	1:55:23	1:57:01	2:00:40	2:05:26	2:52:20	4:46
7-12	structure fire	21:00:41	21:02:04	21:03:32	21:06:36	21:15:52	3:04
8-17	vehicle fire	22:19:47	22:21:28	22:23:23	22:33:12	22:54:27	10:11
8-21	vehicle fire	13:01:04	13:03:59	13:05:04	13:07:36	13:14:17	2:32
8-25	field/brush fire	17:26:03	17:29:55	17:30:52	17:35:33	18:03:06	4:41
8-28	structure fire	9:14:34	9:16:55	9:18:09	9:18:09	15:30:17	0.00
10-6	structure fire	18:10:16	18:11:45	18:14:02	18:20:28	18:22:44	6:26

RESPONSE-TIME CONSIDERATIONS FROM ISO

In evaluating a community's public fire protection, ISO considers the distribution of fire companies. Generally, ISO's criteria say that a built-upon area of a community should have a first-due engine company within 1.5 road miles of the protected properties and a ladder-service company within 2.5 road miles.

Those benchmark criteria produce an expected response time of 3.2 minutes for an engine company and 4.9 minutes for a ladder-service company, based on a formula developed by the RAND Corporation.

RAND conducted extensive studies of fire department response times. They concluded that the average speed for a fire apparatus responding with emergency lights and siren is 35 mph. That speed considers average terrain, average traffic, weather, and slowing down for intersections.

Taking into account the average speed and the time required for an apparatus to accelerate from a stop to the travel speed, RAND developed the following equation for calculating the travel time:

$$T = 0.65+1.7D$$

where

T = time in minutes to the nearest 1/10 of a minute
0.65 = a vehicle-acceleration constant for the first 0.5 mile traveled
1.7 = a vehicle-speed constant validated for response distances ranging from 0.5 miles to 8.0 miles.
D = distance

ISO, working with several fire departments, recently conducted its own review of the formula and found the earlier RAND work still valid as a predictive tool.

In our analysis of company distribution, ISO does not measure or use actual historical response times of individual communities. Many fire departments lack accurate and reliable response-time information, and there is no standardized national recordkeeping system that would allow us to determine accurate departmental response times.

Also, it would be inappropriate to incite fire service personnel to push fire apparatus beyond a safe driving speed for the sake of faster response times, especially since U.S. Fire Administration statistics for 2005 indicate that 17 percent of firefighter on-duty fatalities resulted from responding to alarms.

For more information...
...on any topic related to the PPC™program or the Fire Suppression Rating Schedule, click Talk to ISO Mitigation or call the ISO mitigation specialists at 1-800-444-4554.

Structure Fire Response Times per FEMA

- Regardless of region, season, or time of day, structure fire response times are generally less than 5 minutes half the time.
- The nationwide 90th percentile response time to structure fires is less than 11 minutes.
- Structure fires in the Northeast have the lowest response times while those in the West have the highest.
- Average structure fire response times show a relationship between flame spread and longer response times, but only after flames have spread beyond the room of origin.

METHODOLOGY

National Fire Incident Reporting System (NFIRS) 5.0 data for 2001 and 2002 were used. If no arrival time was included or if response time appeared to exceed 24 hours, the incident was excluded. Only 0.14% of incidents recorded a response time of more than 24 hours; as such, these were considered as outliers and omitted from the analysis. Incidents classified as automatic or mutual aid were also excluded to avoid double counting. With the exception of flame spread, trends included all structure fires (incident type codes 110 through 123). Only fi res with flame spread (incident type codes 110 through 112 and 120 through 123) were included in the analysis of response times related to fl ame spread.

Data for this study were queried in whole minutes.This means that response times of exactly 4 minutes and those up to 4 minutes and 59 seconds are all included in the 4-minute category. As such, slight differences between 3 minutes, 4 minutes, or 5 minutes are not as substantial as when data are examined more closely (i.e., including the seconds). References to the x-minute range mean everything from x minutes to x minutes and 59 seconds while “less than x minutes” means everything from zero to 1 second below x minutes.

Because the vast majority of response times are 20 minutes or less (98.7%), the charts and graphs in this paper do not reflect response times more than 20 minutes.

Several caveats need to be kept in mind with respect to response times. First, they are subject to a variety of measurement errors when units report their arrival on scene prematurely or belatedly. Second, response times are frequently not comparable across fire-rescue systems because of the differing manners in which they are calculated. Also, it is difficult, if not impossible, to measure some components of response time.

Response times here are measured from alarm time to arrival on scene, but there is uncertainty in the data. NFIRS 5.0 defines alarm time as “when the alarm was received by the fire department.”This definition is vague and subjective. Some departments may read this definition to mean when the notification comes into the 911 communications center (911 activation) while others may read it as when the notification comes into the station (dispatch time).Thus, depending on the interpretation by the department, response times reported to NFIRS may or may not include call processing and dispatch time, which could typically take between 30 and 120 seconds

.

GENERAL TRENDS

The highest percentage (16%) of structure fires had a response time in the 4-minute range.The percent of structure fires with response times of 3 and 5 minutes were not far behind at 15% and 14%, respectively. Overall, 61% of structure fires had a response time of less than 6 minutes.

REGIONAL TRENDS

Regional variation in response time was observed (Figure 3). As the regions move from the Northeast to the West, the percent of structure fires with a response time of less than 5 minutes decreases. The regional differences may be due to population densities. Usually as population densities increase, fire stations are situated so that they cover less and less geographic area, which may contribute to reduced response times. However, more investigation is needed as there is also variability within the regions.

TIME OF DAY TRENDS

Regardless of time of day, response times to structure fires peaked at the 4-minute range (Figure 4); however, more fires have a 4-minute range response time between 6 p.m. and midnight (17%) than any other time of day. Between midnight and 6 a.m., only 14% of fires had a response time in the 4-minute range. These results were expected because firefighters—both career and volunteer—tend to be asleep between midnight and 6 a.m. In addition, it is more difficult to see at night and just after awakening, which results in driving more slowly

ACCREDITATION

If North Oldham wants to strive for the pinnacle of excellence, and it appears to be well situated to do so, then it could consider the national accreditation process. This is awarded to departments based on the quality of their service, regardless of size and budget and as of now has been successfully attained by only 239 out of 30,000 fire departments. See the following insert for more detail.

ACCREDITATION

One measure of success is the ability of a fire department, regardless of its size, to achieve accreditation according to the article which follows, " enables organizations to examine past, current and future service levels; internal performance; and compare them to current research and industry best practices" See the following insert: North Oldham would become only one of 239 fire departments out of 30,000 to achieve this level of excellence.

Rocky Mount TELEGRAM

Fire department's accreditation renewed

Staff Writer

Tuesday, November 7, 2017

Firefighting is usually thought of as a reactive service, but what's not reactive is the preparation efforts made by fire departments.

The advanced planning, practice and preparation for any situation by the Rocky Mount Fire Department is one of the main reasons the department recently received a positive recommendation and maintained its internationally accredited status for another year.

Ultimately, accreditation, which has been maintained by the department since 2003, is fundamental to its success and to the safety of Rocky Mount residents, said Fire Chief Mike Varnell.

“Accreditation provides a model of continuous improvement and helps a department remain relevant in an ever-changing industry,” Varnell said. “Today, there is a need for fire service leaders to provide transparency in their actions, make decisions based on hard data and promote a culture that can quickly adapt and innovate with creativity. That is where accreditation comes in.”

Accreditation is based on a model developed by the International City-County Managers Association along with the Fire Chiefs Association. The model enables organizations to examine past, current and future service levels; internal performance; and compare them to current research and industry best practices. This process leads to a more efficient and effective emergency service organization, Varnell said.

Departments are accredited on five-year cycles, but each year within the cycle, a department must submit an Annual Compliance Report with a focus on how the department is continuously improving.

Currently, there are more than 30,000 fire departments in the United States, but accreditation of these departments is few and far between. The Rocky Mount Fire Department is only one of 21 accredited fire departments in North Carolina, and there are only 239 accredited fire departments in the world. Rocky Mount is up for re-accreditation next year.

RELEVANT NATIONAL STANDARDS

For fire operations sufficient personnel must be available in order to provide adequate fire protection to the community. The North Oldham Fire Department can provide adequate minimum fire protection for the community, and can usually comply with two standards which, although not mandatory are meaningful metrics used to determine the number of firefighters required 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. The Nation's Fire Chiefs have endorsed this standard.

Utilizing its own resources bolstered by mutual aid units from Jefferson County (Harrod's Creek) and other Oldham County Fire Departments North Oldham can not only meet the initial standards as outlined above, but can have sufficient depth for effective fire control. This was evident at the recent stubborn fire at the Lion's Club. The building is now under repair rather than having to be rebuilt.

When personnel are thin, this ability to adequately provide adequate initial fire protection is compromised. North Oldham should strengthen automatic aid agreements with surrounding departments than maintain on-duty staffing and are immediately available.

Oldham County chiefs have maintained a cordial working relationship with one another and with nearby neighboring fire departments and these can be summoned quickly to bolster North Oldham Fire Department forces when they are stretched thin. The North Oldham Fire Department, in turn, reciprocates whenever needed. North Oldham is a leading force among the various departments.

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 commercial complex such as the Lion's Club, 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 larger full-time fire departments such as Louisville, and the latter refers to primarily volunteer departments Among other requirements, these standard list "four" (4) persons as the minimum crew size on apparatus.

Measuring North Oldham's compliance with the standards is unique in that it falls between the two, being neither a completely career or volunteer department. The consultants note that it complies readily with 1720, the volunteer standard, and nearly complies with the 1710 standard.

Both the AMA (American Medical Association) and the NFPA (National Fire Protection Association) recommend a response for the first arriving unit, medical or fire, within 4 minutes 90% of the time. Additional assistance, such as full first alarm complement should arrive within the eight-minute window.

A fire/rescue department should strive for quick initial assistance to all residential and commercial areas of the County. A less touted provision of the expected 1710 standards is the requirement for rapid response times. Chief Tim Conway and fellow Oldham County Chiefs are seeking creative ways to cope with these standards, and similar requirements recommended at a national level.

The International Association of Firefighters (IAFF) and the International Association of Fire Chiefs (IAFC) have collaborated to produce a *NFPA 1710 Implementation Guide.*
In this *Guide* the presidents of the two sponsoring organizations signed an introductory letter which describes the likely course ahead: *"For many departments, the road to compliance will be a long one"*. NFPA 1720 concerns volunteer fire departments, such as Westport. Its staffing and response time requirements are more general and flexible, but it does impose a variety of deployment standards on volunteer departments.

See **Figure 5A and 5B** below for a summary of *NFPA 1710* and *1720* highlights.

Figure 5A — NFPA Standard 1710 Highlights
Primarily Full-Time Career Departments

- ✓ **Four (4) personnel per fire apparatus**
- ✓ **First fire unit arrives within 4 minutes 90% of time**
- ✓ **Fifteen to seventeen personnel on first alarm within eight minutes**
- ✓ **Quality and safety parameters**

Figure 5B — NFPA Standard 1720 Highlights
Primarily Volunteer Departments

- ✓ **Minimum 6 personnel on Fire Scene**
- ✓ **First unit arrives within 14 minutes 80% of time**
- ✓ **Fire Department should determine the required number of personnel on scene to operate safely and efficiently**
- ✓ **The Fire department should have a formal training program that trains personnel to delivery services provided by the fire department**
- ✓ **Minimum 2-person Rapid Intervention Team (RIT)**

House Fire Example

Among the most routine of fires in the North Oldham Fire District would be a single-family dwelling. Staffing needs are shown in **Figure 6,** below.

Figure 6

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 (when volunteers are out of the county weekdays), and/or when working fires are contained rapidly) some of these positions can be combined. In Oldham County's existing structure the on-duty personnel can fill these positions. For involved commercial buildings the North Oldham Fire Department is stretched thin.

When the 1710 and 1720 standards were released, much fanfare arose around the requirement for minimum staffing for apparatus. A less-touted provision of the expected standards is the requirement for rapid response times. This Consultant feels that favorable response times are crucial. Hence, we would like to see immediate response from a 2-person crew at Skylight which would be bolstered by a larger back-up crew from Goshen. We noted already that NOFD can consider augmenting responses with AMAR (Automatic Mutual Aid Response) agreements, which summon mutual aid assistance immediately at the report of a fire. The Chief is seeking creative ways to cope with these standards, and similar requirements recommended at a national level.

The NFPA Fire Protection Handbook 20th Ed. Table 12.1.1 states that a single-family residential structure fire requires not less than fourteen (14) firefighters, one chief officer, a safety officer, and a rapid intervention team with two engines and one ladder, and other specialized apparatus.

A commercial complex such as the Lion's Club, (See inset below) requires not less than twenty-four (24) firefighters, two chief officers, one or more safety officers, and rapid intervention team(s) with four engines and two ladders on the first alarm. These requirements were met at the recent fire.

The solution rests with additional on-duty personnel and/or deeper use of mutual aid. Response data for Oldham County shows that it mirrors national trends with a static demand for actual fire protection, and an increasing need for emergency medical services. Future plans for apparatus, staffing, equipment and training should include attention toward this evolving trend. Below is an inset depicting the Lion's Club fire, illustrating that the primary reason "Fire" departments were created remains a primary threat;

Fire damages N. Oldham Lions Club

By Amanda Manning
Wednesday, August 30, 2017 at 5:46 pm

Firefighters were on the scene for seven hours putting out the fire at the North Oldham Lions Club on Aug. 28. The North Oldham Lions Club suffered fire damage Aug. 28.

The North Oldham Fire Department, The South Oldham Fire Department, Harrods Creek Fire Department and Oldham County Arson responded to the scene around 9:30 a.m. on Aug. 28.

North Oldham Fire Chief Tim Conway said the cause of the fire is believed to be electrical. “I don’t know if they are sure of what triggered the electric problem,” Conway said.

Highway 42 between Locke Lane and Highway 1793 was closed for hours as the firefighters worked to put out the fire at 12414 West Highway 42.

OBJECTIVE STAFFING METRIC

Earlier in the report we noted that all across the state of Kentucky and the U.S.A, volunteer fire fighters are decreasing in number, and many communities have had to find ways to fund part-time or full-time personnel to staff equipment, at least during week-day daytime hours. As North Oldham adds or replaces firefighters, the actual costs of these additional personnel need to be calculated, both for the present, and projected into the future.

Allowances must be made for inevitable pay raises and employment costs. Since full-time personnel require salaries, employer pension contributions and benefits and health care, their cost to the community is high. North Oldham is fortunate to have quality personnel whose main income and benefit package is paid for elsewhere.

The existing system of part-time employees should be maintained since full-time personnel costs continue to escalate over time. One key component of the compensation package is health care, the cost of which has risen considerably in recent years and is expected to rise even more quickly in the future. Also, CERS (County Employment Retirement System) has risen drastically and has changed the organizational leadership of the Oldham County EMS system.

As Fire Department Officials and Board members deliberate on proper fire and EMS protection levels for North Oldham, they may want to find some *measurable* quantitative standard that can be applied in their communities. An example which could be applied in Oldham County would be:

> *"We want 100% of all residences within 4 minutes of a fire station with a four-person crew at least 89% of the time and at least a two-person crew the remainder of the time, with a total complement of six North Oldham personnel arriving within 10 minutes "*

Utilizing time distance analysis and geographic projections the consultants have determined that the Fire Stations are well placed and could likely meet the above metric once staffing is in place in Skylight. Even in this case, however, the standard breaks down as soon as one of the stations is already busy on one emergency when a second emergency occurs in the same area necessitating a more lengthy response from another unit, possibly a mutual aid unit. Hence, the decision regarding quantity of fire Department staffing levels and locations remains fairly subjective despite the best efforts at finding a quantifiable metric.

FIRE DEPARTMENT ASSETS

When the Task Force met the Fire Departments provided a breakdown of the assets held and cash reserves of each and presented the information in **Tables J-1 and J-2** below. These are accounting values not depreciating values as of the year 2012. Note also that the LaGrange building assets includes training facilities used county-wide.

OLDHAM COUNTY EMERGENCY SERVICES TASK FORCE
TABLE J-1 FIRE DEPARTMENT ASSETS

DEPARTMENT	ASSET TYPE			
	Buildings	Land	Vehicles and Equipment	TOTAL
North Oldham	$2,253,898	$348,100	$2,194,882	$4,796,880
LaGrange	$1,610,307 *	$543,137	$3,025,731	$5,179,175
Ballardsville	$798,539	$160,000	$816,000	$1,774,539
Pewee Valley	$925,000	$220,000	$1,586,777	$2,731,777
South Oldham	$1,876,266	$518,846	$1,537,591	$3,932,703
Westport	$297,000	N/A	$96,200	$393,200

TABLE J-2 FIRE DEPARTMENT CASH RESERVES

FIRE DEPT.	*North Oldham*	*LaGrange*	*Ballardsville*	*Pewee Valley*	*South Oldham*	*Westport*
Dollar Amount	$322,375	$480,688	$96,963	$924,681	$75,000	N.R.**
As of: Date:	10/11/12	6/30/12	9/21/12	9/15/12	6/30/12	N.R.

** Not Reported

INSURANCE SERVICES OFFICE (ISO)

Nationally the frequency of fires is 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 when fires do occur. The Insurance Services Office provides a Public Fire Protection Rating Scale that provides a fire department a numerical score and a classification to indicate their ability to deliver fire protection services.

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.

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 a widely accepted objective measure of fire protection.

In 2012, ISO released a new version of their rating schedule and updated what some had complained were outdated rating elements. Below are the factors in the current rating schedule:

1. Alarm and Communication
- Emergency Reporting
- Telecomunicators
- Dispatch Circuits

2. Fire Department:
- Engine, Ladder, and Service Companies
- Reserve Pumpers
- Deployment Analysis/Station Location
- Staffing
- Training
- Pumper Capacity

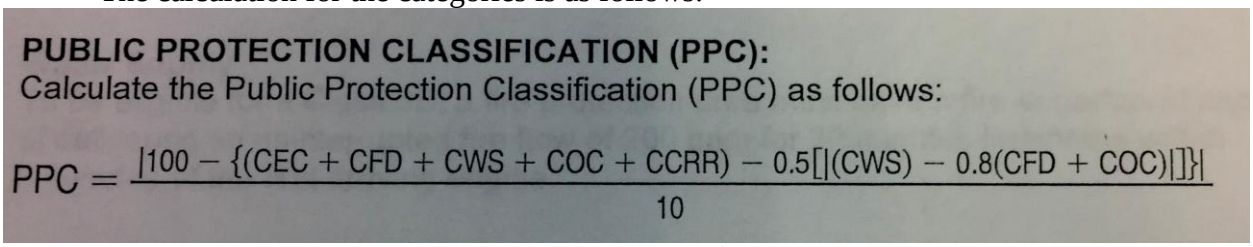
3. Water Supply:
- Water Quantity
- Hydrant Size, Maintenance, etc.

4. Operational Considerations
- Standard Operating Procedures
- Incident Management System

5. Community Risk Reduction
- Fire Prevention & Code Enforcement
- Fire Safety Education
- Fire Investigation

The new rating schedule continues to use some of the same previous sections and has added new sections for Operational Considerations and Community Risk Reduction. This more balanced approach takes into consideration the best fire fought is the one that never occurs.

The calculation for the categories is as follows:



PUBLIC PROTECTION CLASSIFICATION (PPC):
Calculate the Public Protection Classification (PPC) as follows:

$$PPC = \frac{|100 - \{(CEC + CFD + CWS + COC + CCRR) - 0.5[|(CWS) - 0.8(CFD + COC)|]\}|}{10}$$

Source: ISO Public Protection Classification Manual

Mr. Mike Rundell former Field Representative for ISO visited Oldham County several years ago while the Consultant was working with the Emergency Services Task Force. Mr. Rundell provided helpful insight into the grading schedule and its effect on insurance rates, both commercial and residential.

Mr. Rundell pointed out that split classifications, as we have in North Oldham are due to variations in water supply. The lower (better) classifications apply to properties within 1000' of a water supply, and this does cover most of the population and virtually all commercial properties in the District. Others areas are rated 8B.

Throughout all of Oldham County, almost all properties are within 5 miles of a fire station, avoiding the worst 10 rating. All of North Oldham does fall within the five-mile zone. More information on this is found in the Fire Station location section, next in this report.

The Task Force inquired about the effect on homeowners' fire insurance rates and were informed by Mr. Rundell that some carriers "band" the higher categories for residential rates. Consultant William Kramer pointed out that usually differences in rates are minimal once a fire district has reached a level of 6 or better. See **Appendix 19** regarding the effect of improved ISO ratings on homeowner insurance premiums

Last ISO rating

North Oldham Fire District already has an above average ability to control fire as indicated by its favorable rating of a class 4/8B from the Insurance Services Office (ISO). The distribution of fire departments in the United States shows that excluding the class 9 (no water supply within 1000 feet), class 6 is the most predominant

On the following page is **Figure7** Which shows the 2013 Evaluation and the numerical values assigned to each category. The consultants note that the new system of evaluation by ISO was not in effect when the 2013 evaluation was completed and recommendations for improvement are based mostly on the results of the 2013 evaluation scores. The consultants recommend full evaluation of current operations as compared to the new rating system shown above.

As noted, the highest deviation from full credit categories are highlighted and the highest deviation category is marked with an asterisk. In the "Improving ISO" section to follow, the consultants will cover these areas in detail and outline possible solutions to these areas

Figure 7 -- Summary Page for Last ISO Rating for North Oldham:

FSRS Feature	Earned Credit	Credit Available
Receiving and Handling Fire Alarms		
414. Credit for Telephone Service	1.72	2
422. Credit for Operators	1.74	3
432. Credit for Dispatch Circuits	3.25	5
440. Credit for Receiving and Handling Fire Alarms	6.71	10
Fire Department		
513. Credit for Engine Companies	10.00	10
523. Credit for Reserve Pumpers	1.00	1
532. Credit for Pumper Capacity	5.00	5
549. Credit for Ladder Service	4.87	5
553. Credit for Reserve Ladder and Service Trucks	0.44	1
561. Credit for Distribution	1.54	4
571. Credit for Company Personnel	4.53	15
580. Credit for Training	6.10	9
590. Credit for Fire Department	33.48	50
Water Supply		
616. Credit for Supply System	24.74	35
621. Credit for Hydrants	1.98	2
631. Credit for Inspection and Condition	3.00	3
640. Credit for Water Supply	29.72	40
Divergence	-1.47	--
Total Credit	68.44	100

Source: North Oldham 2013 ISO Evaluation

As noted the report shows many areas that are rated at full credit, especially areas related to the fire department. As one can note, ISO rating is a collaboration of the dispatch center, water department, and the fire department.

In the dispatch section, it is noted that each category allows for improvement. Two of the three areas are capital improvements within the dispatching system and would permit a one-time purchase that could be spread over numerous jurisdictions, thus providing an opportunity for increased credit for all fire departments serviced by the dispatch center. The one area that is an on-going cost is the number of telecommunicators. The current rating schedule utilizes the NFPA 1221 Installation, Maintenance, and Use of Emergency Services Communication Systems Standards, which depicts certain criteria for call answering and call processing times.

These are referred to as Alarm Receipt and Alarm Processing in the ISO Rating Schedule. NFPA 1221 assigns a time of 15 seconds for 95% and 40 seconds for 99% of calls to the Alarm Receipt category. NFPA 1221 assigns 64 seconds for 90% and 106 seconds for 95% for Alarm Processing. Additionally, credit is awarded for Emergency Dispatch Protocols, Telecommunicator Training and Certification, and Telecommunicator Continuing Education and Quality Assurance.

The fire department section noted that full to nearly full credit was awarded to apparatus and the equipment on the apparatus. The one area that is an exception is a reserve ladder apparatus, but this is a very small credit for the overall rating and would not be cost effective to buy a new ladder to solve. The areas in which the most deviation from full credit are the categories of Distribution and Company Personnel.

The distribution category examines the station location and how far the stations are from areas of the community. One of the largest changes to the 2012 Rating Schedule is the distribution section. The current system allows two methods to determine compliance with distribution. The first is to have an engine company within 1.5 road miles of each area of fire protection and for a ladder company within 2.5 road miles. The second is for a Computer-aided Dispatch (CAD) analysis of compliance with NFPA 1710 time constraints and full alarm analysis. This is typically 4 minute arrival of the first arriving engine company. In other sections of the report, the consultants show how this aligns with current stations through the use of time/distance polygons.

The other section that found the greatest variance in the fire department section is that of personnel. ISO recognizes three categories of personnel for which credit is awarded. The categories are On-Duty Firefighters at Fire Stations (ODF), Public Safety Officers (PSO), and On-call Off-duty Firefighters (OCF). Full credit is given to on-duty firefighters and one-third credit is given for on call firefighters, as they need to respond to either the station for apparatus or assemble at the scene. The use of automatic aid does factor into the equation of personnel provided they are within 5 miles of the district boarder and automatically respond to every reported structure fire.

While training did not show one of the greatest deviations from full credit, one area was the key factor to the deduction from full credit, which was company level training. The 2013 rating showed 12 out of the 16 hours monthly for full credit. With the amount of on-line training that complies with NFPA 1001 Standard for Firefighter Professional Qualification, the cost and effort to improve this area would be very minimal.

The Water Supply section of the rating showed a significant deviation in the category of the supply system. This is related to the findings of the ISO inspector and through test records of the fire flow tests of hydrants throughout the community. Because the fire flow is so critical to success of extinguishing a fire, this area receives much emphasis. This fire flow is in relation to the needed fire flow, as determined by the fifth largest fire flow in the community, as calculated through the size, construction type, and fire protection features of the buildings within the fire district. North Oldham had a calculated fire flow of 3000 gallons per minute. In the 2013, Hydrant Data Flow Summary 4 of the 11 testing locations failed to produce the needed fire flow.

Improving the NOFD ISO Rating

The Consultants are confident that some personnel, training and water supply enhancements will allow North Oldham Fire District to move to better classifications, making the District more attractive to commercial properties due to potential insurance savings from some carriers. The most recent evaluation for North Oldham was in July 2013. At that time, the District achieved a total of 68.44 points out of a possible 100. It needs only 1.56 more points to reach 70 and move from a Class 4 to a Class 3.

The consultants have noted in **Figure 7** the categories that had the greatest deviation from full credit and have explained in the prior section the criteria by which ISO rates the category. In this section, particular recommendations will occur that can provide a roadmap for improvement. As noted by the need for only 1.56 points to achieve the next higher rating, making improvements in any category noted with noted deficiency, may allow the higher rating. The consultants also recognize that some of the improvements are capital improvements, which may require only a 1-time purchase and others are operating expense increases, mostly through increased personnel costs. As is the case in most paid fire departments, 85-90% of the costs in the organization are personnel salaries and benefits.

Dispatch Section of ISO

Within the Dispatch section, an increase in dispatchers by 2.10 dispatchers per shift is the recommended improvement by ISO, noting that there should be 5 dispatch operators on duty at all times and credit was given for 2.90 operators on duty. This improvement will be the largest long-term cost to implement, as the payroll budget will need to increase by 40%. Due to partial numbers credited during the 2013 evaluation, the dispatch center must either overstaff or pay overtime to compensate for the 0.10 dispatchers. It is recommended that the dispatch center record and provide the fire department the monthly statistics related to alarm receipt and alarm processing times and compare these metrics to the standards of NFPA 1221 to determine how close the current staffing is to meeting the standard. The new ISO evaluation system uses the NFPA 1221 criteria rather than stipulating a number of dispatchers.

The second area for improvement in the dispatch center involves the need to monitor for the integrity of circuits in the dispatch center. As is the case with any electronics, failure can occur and a monitoring system will alert the dispatch personnel to its failure and the need to implement secondary systems. This is a one-time purchase of a monitoring system will increase the credit in the category Dispatch Circuits to full credit, as this is the only needed improvement in this category.

Fire Department Section of ISO

Within the Fire Department section, there are a few areas of improvement that will increase the overall score. Some of the improvements are very expensive annually, such as increased personnel and the construction of fire stations. Other areas only require revision of programs, such as company-level training. The first area that must be examined is the current needed fire flow. While it is very likely that the 3000 GPM fire flow is still valid, the increase in the number of large structures can increase the fire flow and could decrease the current full credit areas.

The Credit for Distribution is a measure of the needed fire stations (locations of Engine Companies and Ladder Companies). For full credit, an Engine company is needed within 1.5 miles of all structures within the fire district and a ladder company within 2.5 miles of all structures.

The consultants show in the Station Location section of the report the current areas covered under deployment analysis. The analysis is based on the alternative method, which states the need for a first arriving engine company within 4 minutes and is based on the NFPA 1710 Standard. This will be a very expensive area to improve, as the construction and subsequent staffing of fire stations are a very large expenditure. While an increase in tax base will allow this growth over time, it is not advised as a category that current resources and funding should seek to reduce the divergence from full credit

The Credit for Company Personnel is calculated by adding all of the personnel to include on duty staffing, public safety officers, and on call personnel and dividing by the total by the sum of the existing engine, ladder, and service companies. The number on duty was credited at 4.56 on duty personnel and 8.07 volunteers in 2013. The volunteer personnel are only credited at 1/3 the actual number that responded on average to all structure fires due to assembly time.

As noted prior that personnel account for 85-90% of total expenditures per year. North Oldham should consider how many personnel the organization can reasonably afford and attempt to place the maximum number on duty, as this is the largest category in the Fire Department Section of ISO and is currently the largest deviation from full credit of any category in the 2013 evaluation.

Because volunteers are not paid per hour and receive benefits that can often cost as much as 50% of the hourly cost for part-time personnel, their recruitment and retention of part-time on-duty staff should be a higher priority. While volunteer credit is only 1/3, their cost is only 5-10% of the cost of paid personnel. Additionally, ISO will permit the organization to count them as on-duty staffing if they are assigned a duty schedule and stay at the station during this time. This could serve as a good pathway to a part-time position.

The next area that found divergence from maximum credit under the Fire Department section is the Company Training Program. Records from the 2013 evaluation indicate that 12 hours were averaged each month. The needed hours for full credit are 16. This equates to approximately 30 minutes per day.

Creating a training program that stipulates at least 1 hour of training of each of the 6-day rotation will ensure that the needed hours are achieved and allow some room for cancelled training due to calls or other unscheduled details that occur.

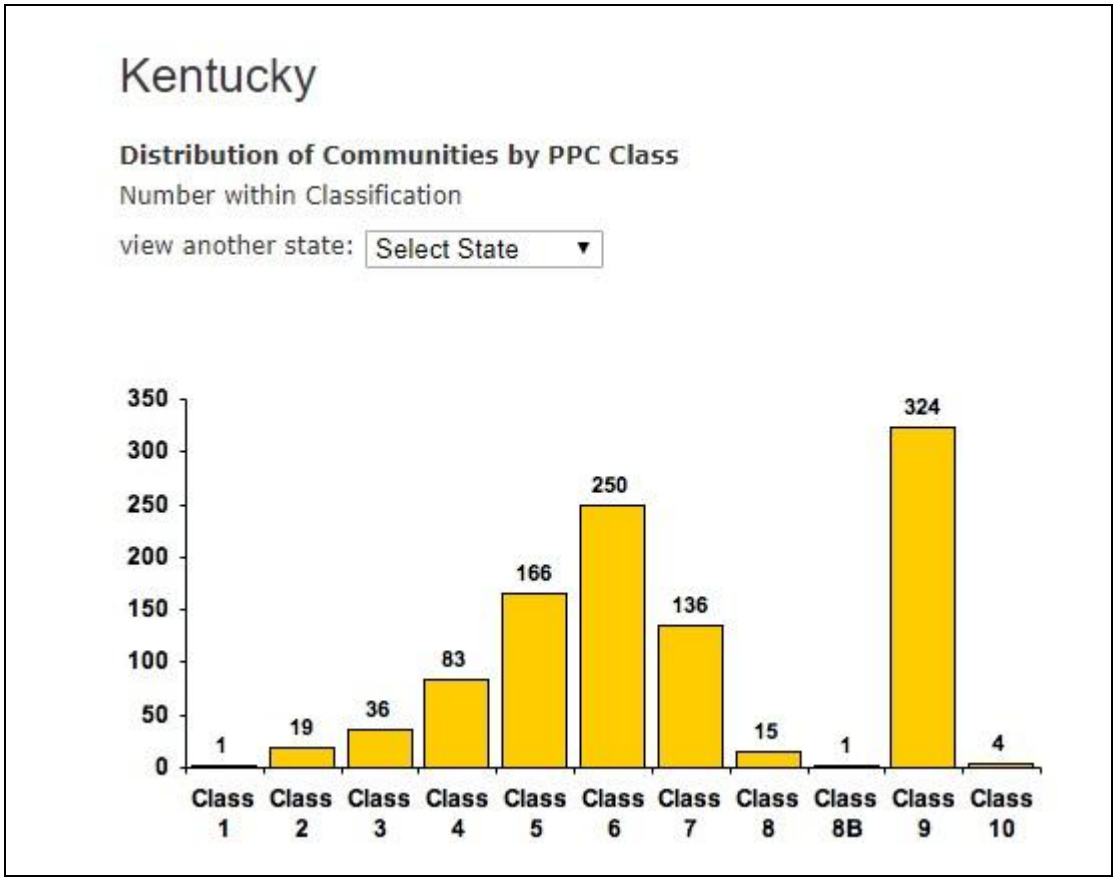
Within the training area, a second area that recommended improvement is recruit training. The requirement is to complete 240 hours of recruit training per recruit for full credit. The 2013 analysis showed only 228 hours. A slight change to the recruit program can close the gap indicated with little to no expenditure of funds, as it is advisable to have existing personnel

help complete the program to ensure the recruit is not only acclimated with the technical knowledge, but will also build relationships with the current company personnel.

Preparing for the next ISO Evaluation

ISO went through a very significant change in 2013 (After the last rating for North Oldham was completed) that placed an emphasis on personnel and the distribution of fire companies (15% and 4% respectively). This realignment placed the rating scale more in line with NFPA 1710's requirements, which focus on staffing of 4 per company and a travel time to an incident in less than 4 minutes 90% of the time.

The weighting of the various segments and a brief synopsis of what each segment examines is found at https://firechief.iso.com/FCWWeb/mitigation/ppc/2000/ppc2007.jsp While this may seem frustrating, Below is a graphic that shows the distribution of PPC classification in Kentucky, and as you will note, North Oldham is in the top percentage of departments even if the rating does not increase.



We currently do not see an increase in rating, especially to a Class 2, without attention to several items which we will enumerate. In 2013 the number of paid personnel was counted at 4.53 and the Volunteers staffing was awarded at 8.07 for the last rating. The paid personnel count has not increased, but the volunteer personnel have significantly decreased, as Chief Conway indicates that he only has a few active volunteers.

Volunteers count 1/3. I have calculated their loss of all volunteer credit and it reduces their score from 4.53 to 2.85 or a net loss of 1.68. If North Oldham need only make up for this and the 1.66 delta from the Class 3 cut off to effectively improve to a Class 3.

The only areas they could have changed from the past evaluation without a major operating investment is Training and dispatch circuits. It they scored perfect this round it could add 4.65. Mathematically, this would be a net gain of 1.31 above the Class 3 cut off. However, now they need to account for the policy and prevention sections added in 2013.

Our suggestion would be to focus on the 5 items below:

1. Ensure automatic aid (Mutual Aid does not count) delivers 3 personnel on all reported structure fires and that they have common communication, dispatch, SOP's, and interdepartmental training each year. This will make up for the volunteers, which added 2.69 to the personnel equation.
2. Page 26, Item 580 B: Company Training. This category rated at 6 out of 25. The reason for this was only 12 of the eligible 16 hours of training and only 40% of those eligible participated.
3. Page 27, Item 580 G: Recruit training is needed at 240 hours for each new member within their first year of appointment. The award was 0.75 out of 5.
4. Page 15, Item 431B: This item gives credit for a monitoring system that checks the integrity of the circuits in the dispatch center and provides a visual and audible warning system for any fault in the circuits.
5. Ensure full compliance with the SOP and Prevention/Public Education sections introduced in 2013

These are internal items for the most part that would not require large operating cost increases. Prior to another evaluation we will return on a gratis basis or work internally with ISO to help North Oldham achieve the lowest and best feasible rating.

Right: North Oldham crews honing their skills

HYDRANTS AND WATER SUPPLY

The Consultants learned that there are good water mains and hydrants in only the more populated parts of Oldham County. There are two separate water systems serving North Oldham, Louisville and Oldham, both with varying main sizes, and relatively better supply through the Louisville system.

Currently there is a minimum diameter of 6" before hydrants can be installed on the water main. In many places mains with adequate diameter have been extended without hydrants. Up to three lots can be construed as a "minor plat" without hydrants. There are a few transmission mains with diameters up to 36" and others with diameters up to 24" in Oldham County.

The consultants echo earlier suggestions from the Task Force and recommend:

That the Water Authorities continue to replace outdated mains, create loops and in other ways upgrade water supply to meet fire protection needs.

That the Fiscal Court should fund installation of additional hydrants (Cost per hydrant installed on existing main is approximately $5000)

That the fire departments and water authorities compare flow and test data to update records and reconcile differences. (The Oldham County and Louisville Water Districts have both agreed in advance to this proposal.)

The Consultants reviewed the task force report and determined that the following two developed areas within the North Oldham Fire District remain insufficiently protected with existing hydrants and mains.

1.Old Taylor Place

2. Shiloh Farms

FIRE STATION LOCATIONS

The existing locations of Oldham County's fire stations are strategic enough so that response times for a first arriving fire unit will usually be acceptable. Because Fire Stations tend to be built in populated areas they are usually well located when objectively analyzed. This is the case in Oldham County.

A dispersed fire Department which allows at least one unit to be on the scene quickly to effect some life saving or fire control action is deemed appropriate. Often, even if a fire cannot be extinguished with a small crew, it can be held at bay and its spread prevented with a small team pending the arrival of other staffed Oldham County or mutual aid fire units.

Mr. Albert Harrison, Task Force member, expended a considerable amount of time in electronically plotting the locations of the stations and showing the actual 5-mile travel routes from each station along county roads. Mr. Harrison shared this information with the task force at one of the meetings. He was able to clearly show how virtually all of Oldham County is within the five-road-mile requirement of the ISO. This information remains proprietary with Mr. Harrison, a professional surveyor, but can be acquired by the County or the Fire Departments as they examine borders and plan for new stations.

OLDHAM COUNTY MAPS FROM KIPDA

(ORIGINALLY USED BY OLDHAM COUNTY EMERGENCY SERVICES TASK FORCE)

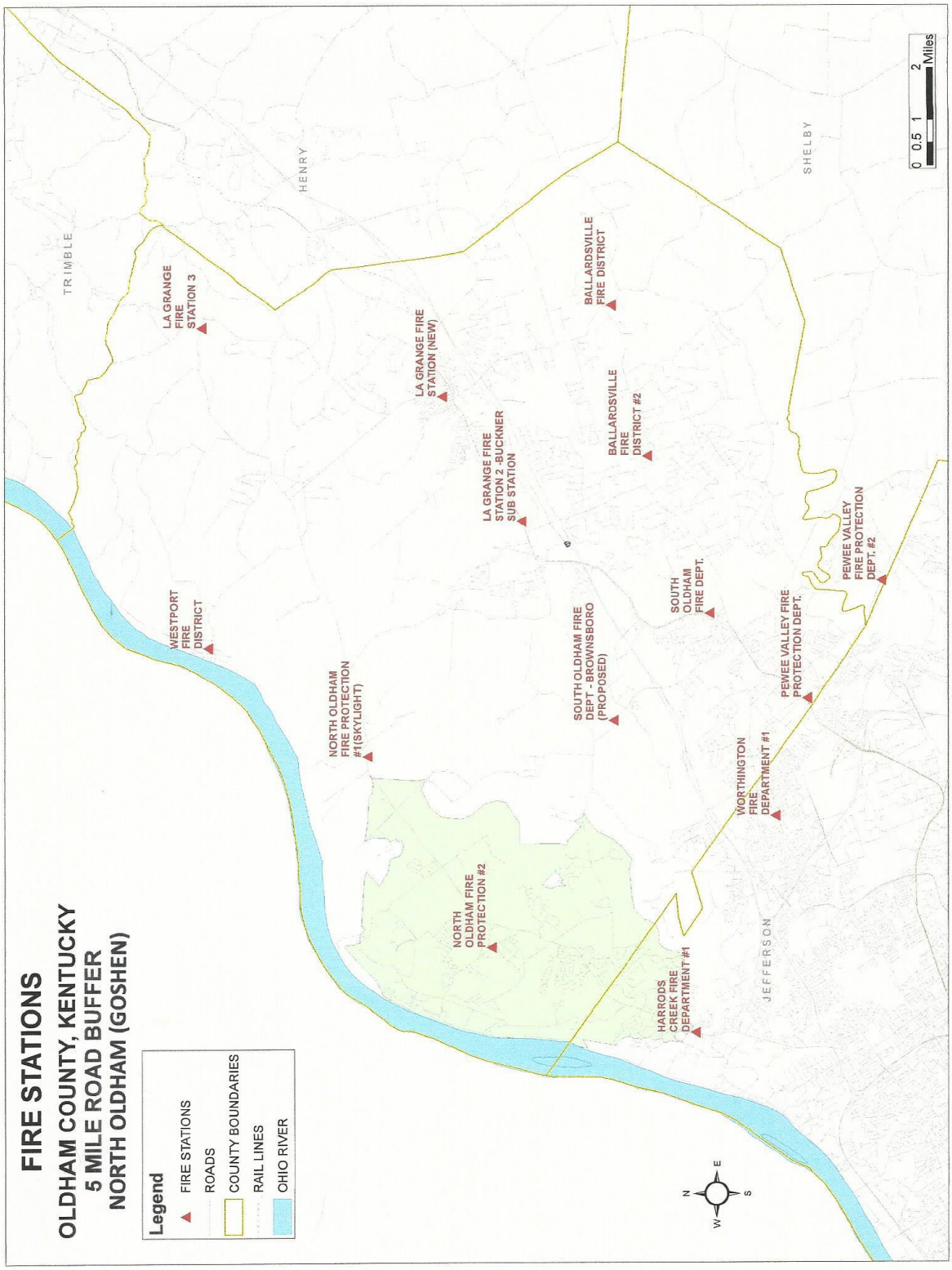
Mr. Rob Houchens, Oldham County Emergency Services Task Force member, was able to obtain mapping data from KIPDA (Kentucky-Indiana Planning & Development Authority) which we present now in our report. The Consultants thank the GIS Department at KIPDA.

Three maps follow showing all of the Oldham County Fire Stations and a few outside the County which are used for mutual aid. The red triangles on the maps show the location of the stations. Among the triangles is Harrod's Creek which is used by NOFD. The shaded zones in each of the three maps which follow show the 5-road mile zones used for ISO Calculations.

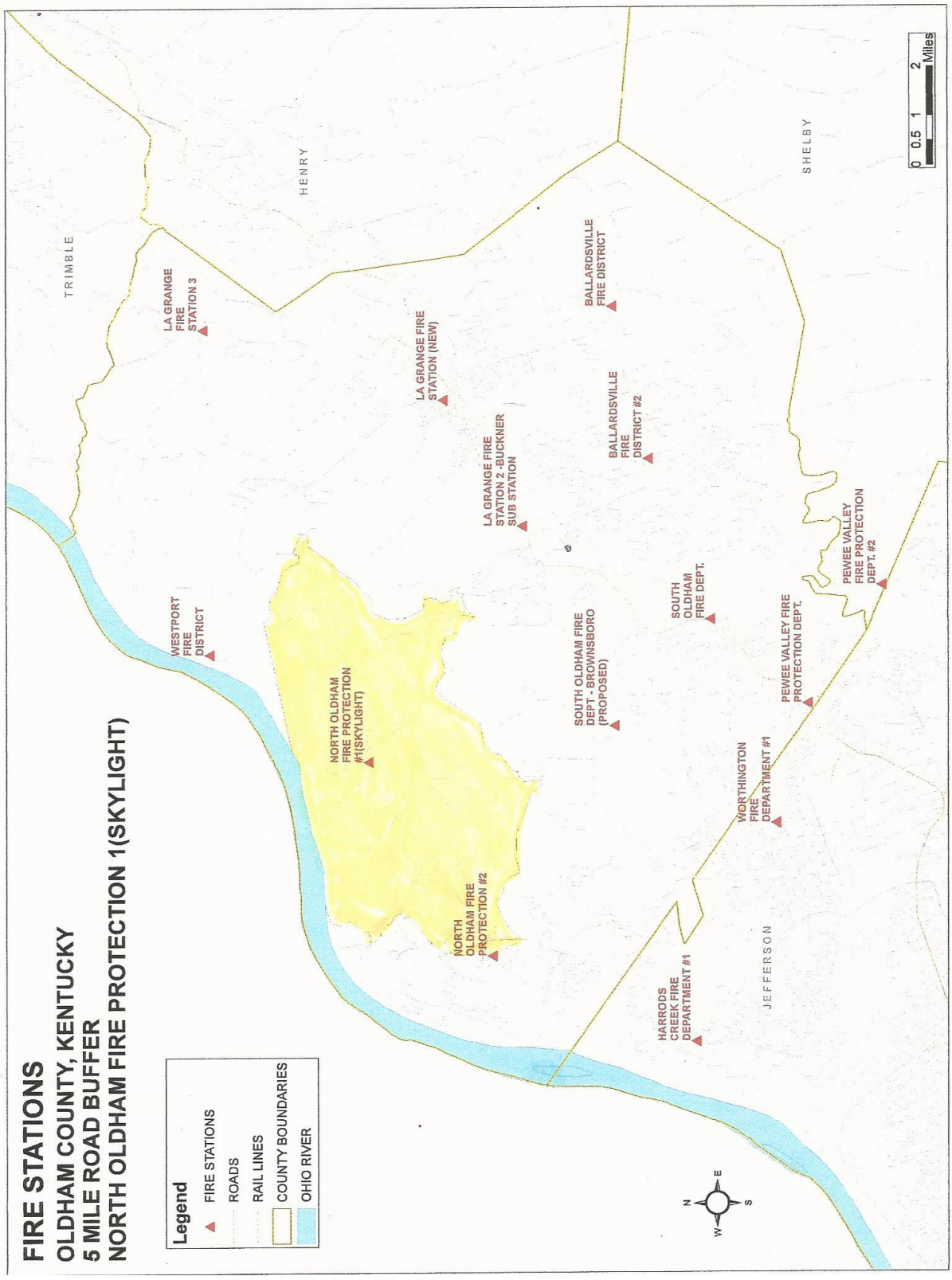
1. NOFD Goshen Station
2. NOFD Skylight Station
3. Harrod's Creek Fire Department No. 1

Considerable overlap occurs in the five-mile zones for the North Oldham Fire District as shown by the shaded zones. Goshen and skylight virtually reach to each other and Harrod's Creek reaches to Goshen. All of the District is well within the 5-road-mile requirement of ISO.

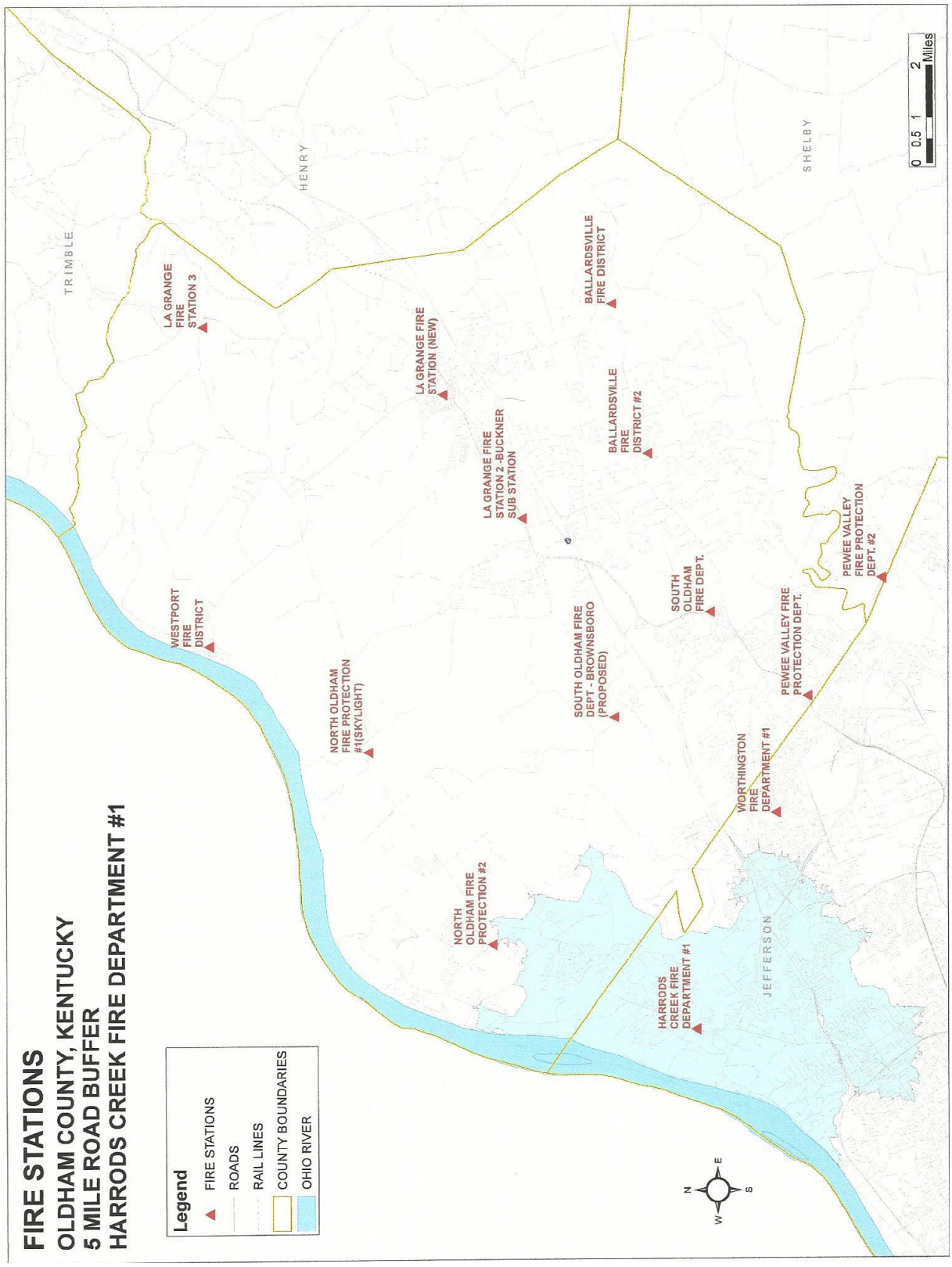
The consultant conducted a field study of Oldham County including street and traffic patterns and found that main roads are readily navigable but some of the side lanes are narrow and winding and do not lend themselves readily to navigation by full-sized fire apparatus.



Five (5) Road mile zone around Goshen Station



Five (5) Road mile zone around Goshen Station



Five (5) Road mile zone around Harrod's Creek Fire Station No. 1

FIRE STATION PHOTOS

The North Oldham Fire District has two newer facilities from which to deliver fire protection and both are well placed geographically. The former Goshen station has been sold recently and should provide funding for staffing the Skylight facility.

North Oldham Fire Department – Goshen Station

North Oldham Skylight Fire Station

Former Goshen Station recently sold

The North Oldham Fire District will continue to grow in population and properties needing protection. These new housing developments within the five-mile zone of Skylight might be able to gain a more favorable insurance rating, but it is a false metric if the station is unstaffed. In reality the staffed station in Goshen can respond to Skylight and provide a response time approximately as quick as volunteers can assemble from home to the Skylight station and then get out the door.

There are two opposing arguments regarding fire protection and emergency medical response:

> **Argument No. 1:** Each and every citizen and business occupant within the North Oldham Fire District deserves response times from its fire department that are within national standard guidelines and therefore, regardless of how expensive and regardless of the infrequency of runs, both stations should be staffed.
>
> **Argument No. 2:** An opposing argument is that the location of fire units must logically include the frequency or the demand for the services from that facility, and we have seen that 89% of the calls are closer to the Goshen station.

The Consultants believe that all occupants of residential and commercial occupancies who are paying the same nine-cent tax deserve the same swift response. The Consultants also feel that a good compromise between these two arguments would be to keep a four-person crew in Goshen and add a two-person crew in Skylight.

STAFFING STATIONS IN NOFD

The North Oldham Fire District is already minimally staffed according to the NFPA standards but in the event that economic conditions in Oldham County worsen, and there is a concurrent need for continued governmental belt-tightening, several options would present themselves for the Fire Departments:

1) Cancel staffing in one station, probably Skylight
2) Reduce the on-duty strength among both stations.

There is usually an angry outcry from the citizenry in any neighborhood if there is an attempt to close or eliminate staffing for a fire station. (And ironically there is often an outcry if a governmental entity wants to open a new station in a neighborhood.)

In Oldham County the permanent closing of any one station would be troublesome since the Task Force discovered that it takes all of the existing stations to keep the populace within the "Five-road-Mile" zone. Even this is false security. Many of these are unstaffed all or part of the time. They serve the purpose for insurance rates but surrounding residents must still wait for volunteers to respond to the stations and then go from the station to the emergency scene. This can push response times out to 15 minutes or more.

When citizens complain about their fire or EMS service it is usually a complaint about slow response. Timely response is a characteristic of good emergency service. Considering all factors, the Consultant would recommend that in North Oldham both stations be staffed.

PERSONNEL COSTS

Personnel costs continue to escalate over time, especially for full-time personnel. One key component of the compensation package is health care, the cost of which has risen considerably in recent years and is expected to rise even more quickly in the future. Oldham County should appreciate the value provided by part-time personnel and volunteers and can afford occasional pay raises or other incentives to keep them.

The Oldham County Emergency Services Task Force noted in its report that on-duty paid or on-duty volunteers can greatly improve response time. Oldham county fire departments need to evaluate their expenditures for facilities and apparatus fleets, and ask if some of these funds might better be used to incentivize volunteers to be on-station or pay more part-time or full-time personnel. We believe that North Oldham has a good balance between personnel and equipment and since new apparatus won't be needed soon, skylight staffing should be the current priority.

There is a need for all communities, including Oldham County, to make sure they do not buy expensive fleets only to have them sit idle or sit painfully waiting for volunteers to staff them. Currently in Oldham County all three types of personnel are utilized, listed below in the order of expense per person:

- Full-time
- Part-time
- Volunteer.

Full-time personnel are primarily Chiefs and Fire Prevention Officers, while part-timers are the rank-and-file firefighters. In the future, the part time option is a way to put more personnel on duty, and North Oldham is using this system quite expeditiously.

It is more likely that for the near future there will be no increase in tax revenue and part time personnel will continue to be used. Hence Oldham County is more likely to incur part time costs similar to those shown below in **Table K-1.** The current wages being paid in North Oldhamfor the staff, along with a proposed $1 per hour increase is shown in **Table 7** Below

Table K-1 Hourly rates for personnel

Position	Current	Proposed
Captain	$15	$16
Lieutenant	$14	$15
FF	$13	$14

Below are **Tables K-2** and **K-3** which will project the hourly staffing figures using $14 as a current average and then using $15 as projected average if the personnel receive a $1 raise. These figures obviously are the bulk of the payroll but do not include stipends for training and call back and the figures do not included the full-time salaries for Chief, Asst. Chief and Staff Assistant. They are designed to allow a reasonable accurate decision to be made regarding the affordability of Skylight staffing.

Table K-2

Costs for Part-time positions @ average of $14 per hour

Number of Positions	24-hour Day (24 x $14)	Days per Year (365 days)	Total Annual Dollars
1	$336	365	$122,640
2	$672	365	$245,280
3	$1008	365	$367,920
4	$1334	365	$486,910
5	$1680	365	$613,200
6	$2016	365	$735,840

Table K-3

Costs for Part-time positions @ average of $15 per hour

Number of Positions	24-hour Day (24 x $15)	Days per Year (365 days)	Total Annual Dollars
1	$360	365	$131,400
2	$720	365	$262,800
3	$1080	365	$394,200
4	$1440	365	$525,600
5	$1800	365	$657,000
6	$2160	365	$788,400

By way of comparison, if North Oldham had to hire full-time members, it would take three 24-hour shifts, working every third day, plus nearly the equivalent of a fourth shift to cover sick time, vacations and mandated time off needed to keep the hours below mandated overtime. This is 6 x 4 or 24 full-time personnel. We could conservatively estimate that full-time personnel in North Oldham, with wages, pension contributions, and fringe benefits would cost about $65,000 a year per person. Twenty-four (24) persons times $65,000 equals $1,560,000, or double the projected part-time rates. Fortunately, it appears the North Oldham will continue to enjoy quality part-time persons for the same coverage as measured by persons on duty at the bargain rate.

FUNDING TO STAFF THE SKYLIGHT STATION

We should consider the cost of additional personnel if the Board decides to staff the Skylight station. The figures above show that adding just one additional position for 24 hours would cost. between $122,640 and $131,400 depending on the prevailing rate. Then, as pointed out by Board Chairman Scherer, we should add 10% to cover paid leave, employer tax, etc. At the higher end, this would be $131,400 plus $13,140 or $144,540.

The Board can decide, looking at the projected growth when such an addition is affordable. Note the projected growth, revisited in the chart below reproduced from our earlier revenue **Table E-3**. Even at the conservative 2.55%, growth rate, an additional person should be affordable no later than 2020, and could occur as early as next year if growth remains at the current rate approaching 5%. Also, it would seem feasible, with more rapid growth, to add a sixth as well.

Table E-3 (Partially reproduced) -- Projected Tax Revenues @2.55%

2016/17	.09	$1,385,513.54	.10	$1,539,460.00
2017/18	.09	$1,423,845.00	.10	$1,578,716.00
2018/19	.09	$1,460,224.00	.10	$1,618,973.00
2019/20	.09	$1,497,479.00	.10	$1,660,257.00
2020/21	.09	$1,525,665.00	.10	$1,702,593.00

The consultants recommend a minimum crew size of two for any satellite station and this would mean the Goshen complement would be reduced by one. The NFPA Standard for apparatus staffing recommends a minimum of four persons, and this presents a bit of a dilemma. Nonetheless the consultants note that they prefer a two-piece apparatus complement with a total of five persons providing quick response to all parts of the district as opposed to a four-apparatus in Goshen that leaves 11 per cent of the district vulnerable.

Some years ago William Kramer was asked to study the Newark Fire Department in Ohio and faced this same dilemma with a three-person crew that would result in an outer station on the East side of the City. He consulted the late Alan Brunacini, Phoenix Fire chief and noted authority who co-authored the National Standard for crew size. Alan gave thumbs up and Newark has done well with this model ever since.

This two-person crew in Skylight could staff a smaller maneuverable attack pumper suggested in the apparatus section.

Since command staff personnel are stationed in Goshen the four-person spirit of the Standard would be met most of the time anyhow.

BUILDING OR UPGRADING FIRE STATIONS

North Oldham seems to have done well in constructing and maintaining relatively new fire stations. The Goshen Station is as functional and aesthetically pleasing as any encountered by the consultants. Even these two stations will eventually grow old and need to be replaced, but this is not a subject that merits much discussion in this report.

If, however, staffing is deemed appropriate for the Skylight station, then overnight accommodations will have to be made for the on-station crews. Chief Conway feels some remodeling can be done under the existing roof without undue expense.

Since North Oldham is well on the way to paying at least six personnel to be on duty, for future reference, we can show mathematically how *inexpensive* the facilities are compared to the personnel on duty. This applies to the existing stations as well as others that may be built in the future. If the facilities are conducive to training, provide comfortable living standards, and improve morale, then a better trained, more highly motivated full-time or part-time employee or volunteer makes the emergency responses. This dimension of quality can then be multiplied across all members, paid or not, using the improved facilities.

In departments with paid personnel, 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. In Ballardsville the cost of their recent new station, including land was about $1.75 Million. While this may seem to be a major investment, if the building has a roughly estimated life span of 60 years the cost per year on a simplified straight-line basis is:

Building: 1.75 million ÷ 60 = $29,167per year

This building will house an average crew of five persons, for 24 hours a day, earning ***conservatively*** over the next 60 years an average of $30 per hour:

Salaries: 5 x 24 x 365 x 30 = $1,314,000 per year

These are simplified calculations. In actuality the station could have more or fewer personnel, the wages could average more, etc. but there is no mistaking the high cost of personnel vs. facilities. As this station continues its life cycle over 60 years, plus or minus, its cost is dwarfed by personnel costs that would continue to accelerate. One major factor in the expense of personnel is the excessive cost of hazardous duty retirement benefits to Fire Districts in Kentucky with full-time personnel.

Because a fire station represents an investment far greater than the real estate and building, selecting a site is an important investment, especially if a non-optimal location results in higher response times. Hence, it makes no sense to cut corners on construction, or accept a substandard location for a new station.

MERGER OPPORTUNITIES

Occasionally the topic of merger with adjacent districts arises. Although Oldham County Departments continue working together, the question of an actual merger can still be explored. Each department brings its own advantages. For example, some have ladder capabilities, some are strong in vehicle rescue and some are proficient in water rescue. All have different department traditions. One likely consideration would be to have Westport become part of North Oldham.

Consultant William Kramer has witnessed mergers and been involved in separations and in both cases, there are advantages and disadvantages. Looking only at overall service to the community, mergers make sense and economies of scale are realized. Where separations occurred, such as the segmentation of fire units in the Sycamore Township and the City of Montgomery Departments in Hamilton County, Ohio, and the separation of Deerfield Township and Mason from a joint district in Warren County, Ohio, the identity factors and the local quality control were more important than the economies of a joint operation. These may be important enough to prevent mergers, and as such could carry the day in Oldham County.

Even where separations have occurred the resulting separate entities continued to co-respond and offer mutual assistance. The consultants have studied Campbell County, in Northern Kentucky, which presented many of the same factors found in Oldham County. There the effective merger of Highland Heights and Cold Spring and the joining of dispatch operations for all of Campbell County occurred with a visible degree of success. In general, mergers serve the community well and result in a stronger organization than separate predecessors.

In Oldham County the six departments remain in charge of their futures and may choose from a variety of options in their quest to gain efficiency by working together. They have already worked through various steps which follow:

A. Cooperation and mutual support: The departments have already achieved the first level of merger by training and responding together and engaging in discussions about joint operations. The common training facility in Buckner is a good example of this. The fact that chiefs from the departments continue to meet regularly indicates that this first level of "merger" has already been achieved. The fire chiefs and other officers in leadership positions talk across district lines and work together already both administratively and on the emergency scene.

The Oldham County Fire Chief's Association has been active for almost 20 years. It meets bi-monthly or more often when warranted and includes all Chief Officers from the Fire Departments in the County as well as department heads from law enforcement, EMS, Dispatch and public utilities. This group is considered the approval body for Standard operating guidance for mutual aid and has also provides oversight for the Instructors Association, Technical Rescue Team, Arson Task Force and Hazmat Team.

B. Joint purchasing and training: Only limited effort has occurred in this regard, but with new leadership by Chief Conway and some of his more progressive peers, more fruitful discussions will be possible regarding equipment and apparatus needs when major purchases are needed. In similar fashion they can share training resources and ideas, and have already conducted joint training exercises at times.

This should result in common SOP's and common protocols for EMS assists and fire ground operations. Each district should adopt the best practices of each other and when called upon to operate jointly on major incidents, they are able to perform in more cohesive way.

C. Automatic joint response: Communities in and around Oldham County provide mutual aid when called upon and ask for help in return. The departments in our study can investigate expanding these procedures and agreements even more.

Every community should participate in mutual aid, as many departments all across the USA already do, so that larger events within one community can be managed with its own crews plus support from other agencies. Even if the service is not fully reciprocal, the benefit of sharing the resource in a significant time of need should be considered.

Automatic aid is the next logical step, where additional resources for larger reported events or for high-hazard border locations are anticipated in advance. These are then programmed into response tables at the common Communications Center. They are dispatched upon the report of a fire or other major incident rather than later eliminating unnecessary delay. We noted earlier how Oldham County is already ahead in this regard. Oldham County Chiefs continue to fine tune the automatic aid policies.

There is room for improvement in the Technical Rescue Team, Hazmat Team and Arson Task Force, all formed through use of mutual aid using agreed upon procedures. When operating with proficiency these types of multi-jurisdictional specialty groups can be successful in tapping the expertise in specialty areas held by various members of each agency while containing costs associated with these specialized areas.

D. Phased merger:. Since the departments have already achieved much of what is possible in **A, B and C** above, they are left with the next step – merger. It could possibly be better achieved in phases. Long before the Task Force began its deliberations there were discussions about the following mergers:

- *Westport and North Oldham;*
- *Pewee Valley and South Oldham*
- *LaGrange and Ballardsville*.

E. Complete merger:. A complete merger of all Fire Departments will certainly afford economies of scale and new efficiencies, but is not likely any time soon. When Cold Spring and Highland Heights, KY merged, (Former client of Kramer) a surplus aerial ladder and a surplus pumper were examples of efficiency gains. These cities had adjacent territories similar to Districts in Oldham County and personnel needs and overlapping leadership positions were consolidated.

Similar gains could be realized by merging the departments in Oldham County some day, and responsible Boards will not summarily dismiss such discussions. If the Oldham County EMS system were merged with the Fire Departments, the additional efficiencies are possible.

Communities facing the possibility of a merger, but already cooperating fully, might logically wonder "What is to be gained?" **Figure 8** below provides an answer from two actual fire departments that were in a position similar to several in and around County, and did go ahead with a complete merger. This report from Wisconsin was submitted by Kevin Gerarden, an honor graduate from the fire science program at the University of Cincinnati.

Legal documents can be drawn to dissolve and recreate organizations and deed transfers can ensure assets remain in service to Oldham County community. The most difficult stumbling block could be merely obtaining simultaneous positive go-aheads from District boards. After that it can happen, perhaps in phases with no turning back, until the deal is done.

These separate fire departments work well together already and back up one another on a daily basis. Persons looking at a positive status quo may have reservations ("If it isn't broke, don't fix it.!") while those looking ahead see a stronger fire service with a merger or mergers.

Figure 8 : Sample Merger Progress Report

Author: Kevin Gerarden
Posted date: Thursday, October 9, 2008 11:21:52 PM EDT
Last modified date: Thursday, October 9, 2008 11:21:52 PM EDT
Total views: 14 **Your views:** 1

Two cities in Wisconsin have created a joint fire department, and for the past five years, the result appears to have enjoyed a good measure of success. Between my city of Oshkosh and the city of Appleton (about 20 miles apart and populations in the 60,000 range), lie the "twin cities" of Neenah and Menasha (populations in the neighborhood of 20,000 and literally across the street from each other). Before the departments merged, there were standing automatic aid agreements in place, a certain amount of joint training, and, on balance, fairly good relationships all around. Many expressed doubts that it could be made to work, or even that it was necessary or beneficial to merge – what more could be gained? The two labor unions, one from each city, had to be brought on board, and the past practices and benefits of each contract were honored or taken into consideration. The fire stations, two in each city, did not have to be moved or closed. And yet, despite all the adjustments and accommodations, the cities have, by merging and sharing resources, saved money, and strengthened their capabilities. Even Appleton and Oshkosh have realized benefits by the presence of a new mutual-aid partner.

You can learn more about Neenah-Menasha Fire Rescue at www.nmfire.org

Taxation Rates are different for the districts and a merging would even the rates but would also even service levels. In Kentucky if two or more districts merge the higher or highest tax rate prevails. A merger can be expected to improve the "Average" Insurance Services Offices (ISO) Rating across a larger district.

While the overall level of service county-wide would improve with a complete merger, some areas would lose as the “haves” supplement the “have-nots” Taxation rates, wage rates, and volunteer incentives would all have to be aligned for a merger to occur.

There are separate organizational levels that need to be unraveled and combined in a series of steps. There are six separate districts controlled by separate boards. All of these can be brought together in phases until ultimately there is one district served by a single fire department. If it is joined to the County EMS service, imagine the powerful organization that results and is available for the residents and businesses of Oldham County.

When fire apparatus and emergency medical vehicles are making responses and circulating throughout a community, they provide a tremendous public relations opportunity. There is a certain pride factor among the members of the fire departments and among the community members being served. A large fire department with a rather generic name such as “Oldham County” must realize that it will lose some identity among members. The overall efficiency gains and economies of scale, however that are afforded by a larger organization can override the identity factor of smaller communities within that larger organization.

Fire Trucks are large enough, for example to be labeled “Oldham County Fire Dept.” with an additional message naming the community where stationed. A step in this direction was taken several years ago by North Oldham since you do not use a “station 1” or “station 2” identifier but instead use “Goshen” and “Skylight” as its station identifiers.

A few considerations in a merger include:

- The broader number of employees included in a healthcare system. Since this is among the most expensive of employee benefits, it would make sense to try to lower these costs by having a broader employee base. In Boone County KY, five fire departments have formed a self-funding health care system that would have been unaffordable by any of them as individuals. This is not unlike small businesses in Kentucky who band together and utilize healthcare brokers to derive savings from larger client bases.

- One possible downside to a merger would be some loss of volunteers who feel primary allegiance to one of the departments more so than to the community as a whole. It is the opinion of the task force, however, that additional incentives and a policy of continued encouragement for the part-time and volunteer system will in large measure offset any desire among the volunteers and the part-time personnel to abandon ship.

In a complete Oldham County fire department/EMS merger, personnel that already are cross-trained would be quite valuable. Others with one or the other qualifications could be grandfathered in but new personnel added would all be cross-trained. Within the same total budget as currently exists for fire and EMS, a larger total force would be available for immediate response to EMS emergencies or fires. There is a small possibility that crews could be tied up on ambulance duty when a fire call is received.

It is also possible that crews could be tied up at a structure fire when one or more EMS calls are received. Contingencies are in place for back-up in such times, just as they exist now for simultaneous structure fires, multiple EMS runs, or both. Ordinarily and probably they are available for either and this double value is a tremendous asset to the community.

The Oldham County Emergency Services Task Force reviewed various options regarding merger as follows:

1. Merge some departments. This could be a first step toward consolidation. As noted already, for many years there has been talk of merging Westport and North Oldham; Pewee Valley and South Oldham; and also LaGrange and Ballardsville. The Task Force supported these mergers as a first step.

2. Merge all departments along with County EMS. This would provide the overall best service to the County due to economies of scale; gains from dual trained on-duty personnel and the elimination of duplicate apparatus. Overall service improves for Fire Protection and EMS.

Adequate station staffing (24 hour on-duty coverage within five road miles suggested by ISO) is not affordable throughout Oldham County without also merging with EMS. The Task Force feels that if the two services were ultimately combined there would be enough funding to have an immediate response crew, cross trained in Fire and EMS available 24 hours a day within the five-road-mile zone.

Currently tax rates are capped at 10 cents each for fire and for EMS. This makes a maximum of 20 cents for both. A merger of fire and EMS may or may not raise taxes above the current combined Fire/EMS level of 12 to 13 in Oldham County, depending on the staffing levels sought at each of the stations.

MEASURING EFFECTIVENESS

The Board of Directors which oversees the North Oldham Fire District would like to measure the department in a quantifiable manner and this report has sought to provide standards, facts and figures to allow them to do so to the degree possible.. This is not as easily achieved as in the private business sector where physical products are produced. There it is possible to see the quality of the finished product, measure sales, and quantify end results.

With an emergency fire and EMS service the end product is always in a state of flux and largely unknown in terms of what service will be needed, where it will be needed, and the types and magnitudes of service rendered. For a fire department it is better to concentrate on the front end of production, i.e. , how well-oiled and maintained is the machinery in place, how well-trained and equipped are the personnel, etc. Then a reasonable conclusion is that the services delivered will be of good quality as compared to similar fire departments.

On the following page we have pulled together a chart, listed as **Table M** to show where NOFD rates compared to the rest of the county, other departments in the Commonwealth of Kentucky, and the nation as a whole.

TABLE M -- MEASUREMENTS OF EFFECTIVENES*

Metric	NOFD	Average Oldham County	Average State of Kentucky for similar populations	Average Nation for similar populations	Consultant's Grade for NOFD
ISO Rating	4	3.83	6.61	6.8	B+
Apparatus Staffing	4	1.8	1.2	2.1	A
Response Times	5.06 minutes	11 minutes	Less than 11 minutes	Less than 5 minutes 50% of time	B
Per cent compliant with NFPA 1710	90%	75%	60%	60%	B+
Grading: Trained personnel	A	B	B	C	A
Grading: Experienced Personnel	A+	B	B	C	A+

* To find the sources of these data items, refer to the sections in this report where the items are covered in detail. Most involve some subjectivity but are considered by this consultant to be accurate enough for decision-making.

IMPLEMENTATION OF IMPROVEMENTS

The North Oldham Fire District remains in a "Growth" mode and will likely need a Station update, some fleet changes, and perhaps a few additional personnel. These challenges and others involve time and money investments, and the best way for the North Oldham Fire District, its Chief and its Board to tackle them simultaneously is to plan in advance using an objective-setting format. Planning can be done on a daily basis, a weekly basis, a monthly basis, a yearly basis, or a multi-year basis.

The Fire Chief's Handbook provides concise directions on how to prepare for the future:

> "Looking ahead and creating a scheme or method to attain a particular goal or objective is called *planning*. Before any endeavor can be launched, a plan of action must be developed. In the management arena, planning precedes the other four management functions since it is an integral part of each function. Planning as a function of management affects every level of the organization, from first-line supervisors to top-level commanders. Properly prepared plans assure us of the most successful outcome of any activity, whether it be the daily duties of a firefighting unit or the long-range plans of an entire department." [Source: *Fire Chief's Handbook*, Ch. 6, pp. 230-231.]

The *Fire Chief's Handbook* goes on to state that for planning to be effective, it must neither be done in a vacuum nor be rigid. Planning in a vacuum is planning without taking into consideration the needs of the community, its citizens, the members of the department, and the department itself. Effective planning would involve specific plans, for example, on how to use the new reorganization for meaningful improvements

The first way to begin planning is to start with a goal statement and then list the steps necessary to accomplish the goal. Plans can be long, intermediate, or short-range. Short-range plans are the most specific and should contain the following information:

- List of tasks to be accomplished
- The people and/or units and their alternatives, that accomplish the tasks
- The resources that will be required, such as materials and equipment
- Time frames and deadlines
- Control and reporting systems

Intermediate plans will be more vague than short-range plans. Intermediate two to three-year plans must allow for changes in personnel, shortfalls in the budget, or changes in department philosophy. Long-range plans of more than three years might be only a broad goal statement. As the time to begin implementing long-range planning nears, development of the plan becomes more and more specific. Component parts of long-range goals become short-range objectives. Common time frames are labeled as follows:

- Short-range ---------- One Year
- Intermediate Range ---------- 2 to 3 years
- Long-range ---------- 3 to 20 year

Chief Conway and the Board of Directors in the North Oldham Fire District are already doing pro-active planning for the future and likely will be able to enhance these efforts and better achieve desired results by using information in this section.

The Department could have a series of retreats or planning sessions where all members of the fire department are invited to contribute ideas. These can be retreat sessions scheduled off-site and off-duty, or can be held centrally during duty hours with all activities except emergency response suspended for several days or evenings, accommodating most personnel while on duty. Other personnel could contribute through on-line connections.

All members would be encouraged to provide suggestions, and recommended goals for the fire department. All of the grass roots input from these planning or retreat sessions are then collected, and massaged by the staff of chief officers in this department. From this, a list of specific objectives for the coming calendar year are published -- a "Master Plan."

This “Master Plan 2018” includes goals that are broken down into component parts. Time lines are established and individuals who were responsible for their achievement are identified. While the nature and types of objectives will vary from one fire department to another, this process, which holds persons responsible and pegs their actions to target dates, is virtually assured of achieving progress toward the desired goals.

Figure 9 on the next page shows a status chart dating to 2006 and used every year since, in some form or another, in Deerfield Township Fire Department, Warren County, OH to track the progress of objectives. The color-coding scheme is as follows:

1. Red – Behind schedule
2. Yellow – Close or not applicable
3. Green – On schedule

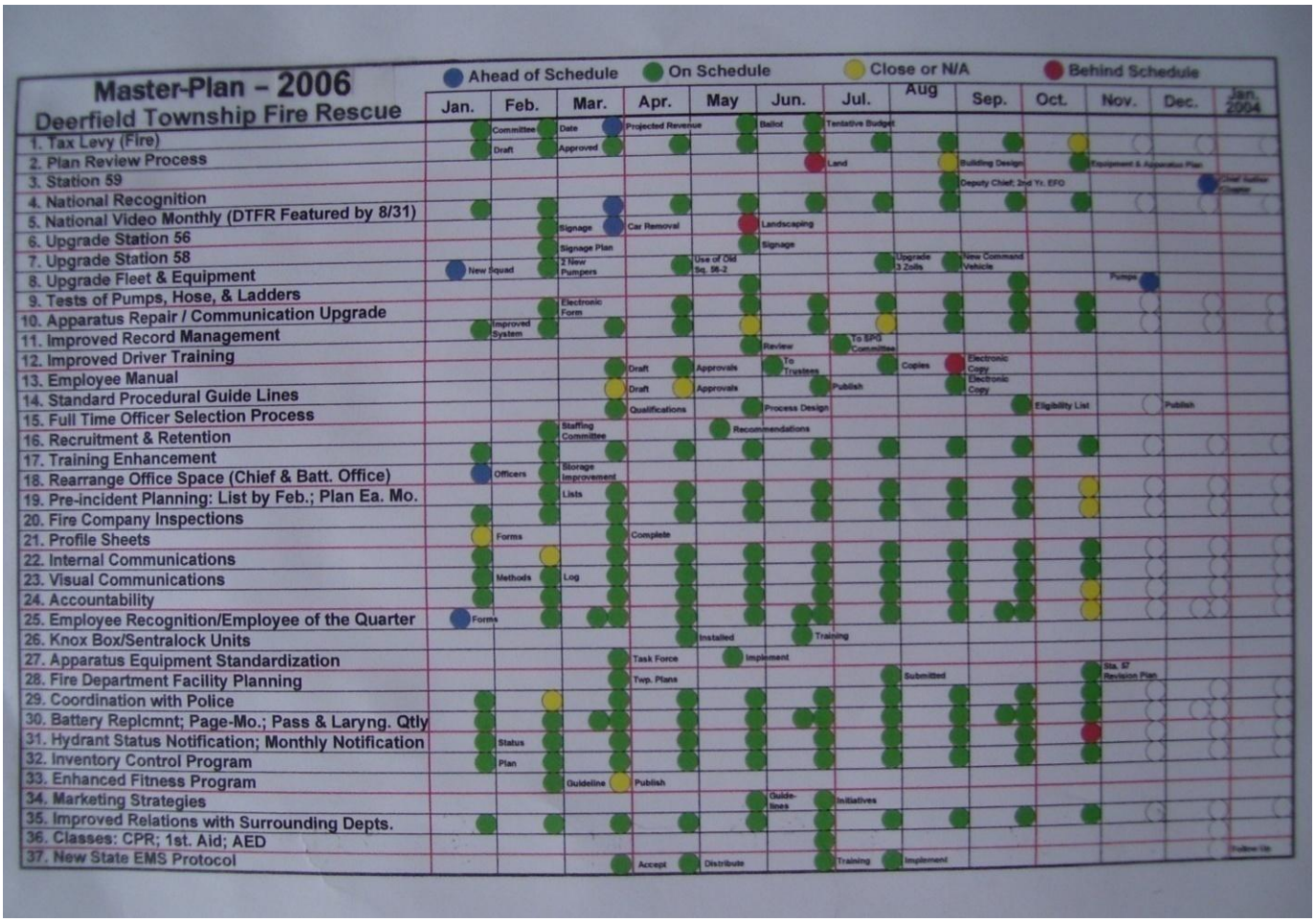
On this sample chart, most of these ambitious fire department goals show green and are being achieved. One can only speculate about how many of these positive achievements would not have materialized in the absence of the annual plan, mapped out in advance.

While putting together the annual plan, several of the objectives may well contain component parts of a multi-year plan. First steps toward Skylight staffing could be listed. Subsequent years can have follow-up or next steps so that in this way, longer-range goals and objectives designed to meet future needs over a multi-year period can be incorporated into an annual plan by including component parts of the longer-range objectives.

It is the goal of Kramer and Associates and to assist the North Oldham Fire District in preparation of a three to ten-year strategic plan that the Fire Department can follow as a guide or “roadmap” to ensure their success into the future. Because the community growth and dynamics may change the future outlook and services needed by the community, it is probably not necessary to project further than this

The North Oldham Fire District has a progressive Board and a "Can-do" Fire Chief willing to endorse quality financial and administrative planning, and several Officers have a progressive management perspective. They have both made considerable progress towards necessary planning already Since the North Oldham Fire District is at a pivotal point in terms of defining the future of its fire and rescue protection for the town, it can profit from the techniques presented in this section

Below: Figure 9 Master Plan Status Chart



CONCLUSION

The North Oldham Fire District can move boldly forward with implementation of new plans and objectives based on the findings and recommendations in this report and use it as a "roadmap" for continuing to ensure their success into the future. Oldham County is a beautiful area, and careful planning is essential to maintaining the existing quality of life in the community. The Fire District Constitutes an integral part of a community's culture.

The North Oldham Fire District can be proud of the fine fire and rescue personnel which are now serving the community. The Board Members and leaders in the current fire department are commended for their efforts in planning for a strong force. All deserve credit for seeking neutral outside input that will strengthen their ability to provide service in the future.

The consulting team agrees that North Oldham Fire District is at an opportune time in its history when it will profit by planning and preparing for a different future. The economy presents new financial challenges at a time when new and increasing challenges face the Emergency Services. The North Oldham Fire District will feel the effects of a more dangerous world, either directly or indirectly.

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 that the fire and rescue protection in The North Oldham Fire District ranks highly when compared with that provided in similar-sized jurisdictions.

Nothing really will happen with this report, however, unless there is follow-up action to initiate the key components deemed advisable. Hence it is our strong recommendation that while the contents of this report are fresh, and are being discussed by the key stakeholders, that leadership act to commission an implementation task force to evaluate the suggestions and implement those deemed advisable and affordable.

APPENDIX 1
Consultant Resumes

Resume -- WILLIAM M. KRAMER

9 Heritage Rd. Phone: (513) 678-2279 Daughter s Cari and Jennifer
Cincinnati, OH 45241 Birth Date: 1-28-44 wmkramer@zoomtown.com

Educational Background

B.S.I.M.	Industrial Management	University of Cincinnati, 1968
B.B.A.	Management	University of Cincinnati, 1968
M.B.A.	Personnel Administration	Xavier University, 1970
M.A.I.R.	Industrial Relations	University of Cincinnati, 1977
Ph.D.	Major: Management	University of Cincinnati, 1977
	Minors: Law & Indust. Rel.	(Ph.D. GPA: 3.78)

Fire Service Background

Volunteer Fire Service: Volunteer Firefighter 1962 - 1969, Green Township; Vice President of FF Association 1967-1969.
Career Fire Service: Cincinnati Fire Division: Firefighter – 1973 to 1981; Lieutenant – 1981to 1983; Captain – 1983 to 1987; District Chief – 1987 to 1993; 1994; Assistant Fire Chief - Feb. 1993; Acting Fire Chief April, 1993 (Chose Directorship at University)
Fire Chief: Indianapolis International Airport, April 1995 - 1998.
Fire Chief: Deerfield Township Fire Department, Warren County, OH October 1998 – January, 2006

Academic Background:

1971 - 1981	University of Cincinnati - Lecturer on Management
1975 - 1981	Xavier University - Assistant Professor of Management
1978 - Present	National Fire Academy: Open Learning Fire Service Program- Editor and Author
1981 - 1982	University of Minnesota - Adjunct Instructor - Open Learning Fire Service Program
1982 - 2008	University of Cincinnati - Associate Professor of Fire Science
2008 - 2009	University of Cincinnati - Professor of Fire Science
1982-1995, 2003-2009	University of Cincinnati Department Head, Director of Fire Science

Publications - Primary Author or Editor:

"A Managerial Analysis of Municipal Fire Departments -- Ph.D. Dissertation – (Cincinnati: U. C. Press, 1977)
June 1977)
Article: "Management by Objectives in the Fire Service": **International Fire Chief**; (Washington D.C., May, 1979)

Book: **Disaster & Fire Defense Planning** Course Guide (Washington D.C.; Open Learning Fire Service Program, 1992)

Book: **Political and Legal Foundations of the Fire Service**, (Lexington, MA: Ginn Custom Publishing, 1992)

Book: **Advanced Fire Administration** (Lexington, MA: Ginn Custom Publishing, 1992)

Book: **Fire Officer's Guide to Disaster Control** (Fire Engineering, 1992)

Book: **Disaster Planning and Control** (Penwell, 2009)

Co-Author

Article: "MBO Pays Dividends in Three Areas in Cincinnati": **Fire Engineering** (N.Y.

Book: **Managing Fire Services** (Washington D.C.: ICMA, 1979 and 1999)

Book: **Personnel Management for the Fire Service**; (Washington D.C. Open Learning Fire Service Program, 1979)

Book: **Community and the Fire Threat,** (Lexington, MA: Ginn Custom Publishing, 1994)

Book: **Fire Chief's Handbook** Fire Engineering Books & Videos, Saddle Brook, NJ, 1997

Article: **Fire Service Staffing** Ohio Township Magazine, 2003

Educational Innovation:

1997- Present: Served as Educational Commentator for two video production companies, Developed program for offering collegiate credit for evaluation of contemporary issues in the Fire Service. **American Heat.** 1988-1997 - **Working Fire**. 1998- Present

Military Background:

U. S. Marine Corps - Captain - Platoon Commander; Active Duty: 1965 - 66; 1969 - 70; Active Reserves: 1966 - 69; 1970 - 1974.

Hall of Fame: 2006: Highest State of Ohio Fire Service Award and Induction into Ohio Fire Service Hall Of Fame

Randall W. Hanifen, Ph.D.

6538 Red Pine Dr. Liberty Twp. Ohio 45044
513-266-6124 Randall@Hanifen.org

Objective

To provide clients personalized solutions to their emergency service needs

Certifications

- Fire Officer Designee, Firefighter, Paramedic, Instructor
- Institute of Fire Engineers-Fellow
- NIMS 100, 200, 300, 400, 700, 800b, EMI PDS-EM

Experience

West Chester Fire-Rescue
2/1998-Present

Shift Captain (Battalion Commander)
- Shift commander for 31 person platoon from 5 stations
- Manage strategic planning, succession planning and other analytical projects

American Public University System 1/2016-Present

Associate Professor
- Develop and teach graduate level courses in Emergency and Disaster Management Program. Supervise graduate research.

University of Cincinnati
1/2007-Present

Adjunct Professor
- Develop and teach fire science curriculum. Current classes include. Fire and Emergency Services Administration, Disaster Planning and Control, Managerial Issues in Hazardous Materials, and Fire Investigation

Butler County Technical Rescue Team
5/2005-Present

Executive Chairman/Rescue Team Manager
- Act as agency chairperson. Oversee annual budget, strategic planning, hiring and promotion, as well as interagency interaction for an all volunteer agency
- Butler County ESF9 Coordinator and EOC Representative

Hanifen and Associates
9/2009-Present

Owner/Consultant/Planner
- Conduct strategic planning projects utilizing analytics with small companies
- Create disaster and emergency programs through a collaborative effort.
- Create Labor-Management solutions through collaborative studies

Education

Northcentral University

Ph.D. Homeland Security
- Homeland Security Policy and Analysis
- GPA 3.90

Grand Canyon University

M.S. Executive Fire Service Leadership
- GPA 3.87
- Degree based on National Fire Academy EFO Program

Volunteer Work

Ohio Task Force 1
FEMA US&R
5/2002-Present
Butler County IMAT Team

Task Force Leader
- Assist with Strategic Planning and US&R Management Subgroup
- Lead 80-member team during federally declared disasters

Planning Section Chief
- Lead IMAT through planning cycle
- Command groups and divisions under the planning section

International Association of Fire Chiefs

Company Officer Section
- Primary author/editor of IAFC Succession Planning Document
- Vice-Chair of Section

Program (FRI) Planning Committee
- Responsible for selection of courses and updates to the Company/Chief Officer Leadership Program

Safety, Health, and Survival Liaison-SHS Section

Fire Officer Peer-Reviewer
- Review candidates for Fire Officer Designation

Center for Public Safety Excellence
National Fire Protection Assoc.

Fire Officer Professional Standards (NFPA 1021)
- Assigned to Technical Committee as Subject Matter Expert

Publications

Disaster Planning and Control (2009)
IAFC On-Scene (2010-Present)

Associate Author
- Penwell Publications.

Author
- Regional Collaboration; Higher Education in the Fire Service

Professional Affiliations

Fellow-Institute of Fire Engineers (FIFireE)
- Competency based acceptance, only 60 U.S. Members, Only CO in U.S.
- Chair Professional Development Committee

Presentations

West Chester University (2008, 2009, 2010) **Ohio Fire Chief's Conference** (2011)
Working Fire Video (2002, 2005) **IAFC Board of Directors** (2011)
Ohio Township Association (2008); **Ohio GIS Conference** (2009,2010)
International Fire World (2012), **Fire Rescue International** (2013-2017)

APPENDIX 2
Oldham County Demographics

Oldham County, Kentucky From Wikipedia, the free encyclopedia

Oldham County courthouse in La Grange

County Seal

Location in the U.S. state of Kentucky

Kentucky's location in the U.S.

Founded: December 15, 1823
Named for: William Oldham (1753–1791), American Revolutionary War colonel
Largest City: La Grange
Area: 196 sq mi (508 km^2)
Land: 187 sq mi (484 km^2)
Water:9.2 sq mi (24 km^2), 4.7%

Oldham County is a county located in the commonwealth of Kentucky. As of the 2010 census, the population was 60,316.[1] Its county seat is La Grange.[2] The county is named for Colonel William Oldham. Oldham County was a prohibition or completely dry county until January 2005 as the result of a 2004 'moist' vote, permitting sales of alcohol in restaurants that seat at least 100 patrons in which 70%+ of total revenue is derived from sales of food. After a vote in late 2015; Oldham county has become a completely wet county.

Oldham County is part of the Louisville/Jefferson County, KY–IN Metropolitan Statistical Area.

Oldham County is the wealthiest county in Kentucky and 20th wealthiest county in the U.S.[*citation needed*] and ranks second highest in Kentucky for percent of college educated residents.[*citation needed*] While the causes for this are complicated, areas east of Louisville have long been popular with wealthy residents, initially as summer residences and eventually as year-round suburban estates and bedroom communities. Oldham County lies northeast of the best known of these areas, Anchorage, just outside Louisville's pre-merger East End.

Contents

History

Oldham County was established on December 15, 1823 from parts of Henry, Jefferson, and Shelby Counties.[3] It was the 74th Kentucky county, and was named in honor of Col. William Oldham of Jefferson County, a Revolutionary War officer.[4]

Initially, it was mainly a rural county with small, scattered developments in places like Westport which was founded in 1800 and served as the county seat early on. When the Louisville and

Frankfort Railroad Company introduced rail lines in the area in the 1850s, many new towns and communities sprang up. Eventually the railroad ceased operating as a form of public transportation, but the more rural nature of the county continued to draw residents away from the metropolitan areas in Jefferson County.[citation needed] Since the early 1970s and the completion of Interstate 71, which connects Oldham County to Downtown Louisville and shopping in Eastern Jefferson County, Oldham County has increasingly become suburban in nature, a natural extension of Louisville's wealthy East End as it ran out of large tracts of undeveloped land.[

Geography

According to the U.S. Census Bureau, the county has a total area of 196 square miles (510 km²), of which 187 square miles (480 km²) is land and 9.2 square miles (24 km²) (4.7%) is water.[5] It is the 13th smallest county in Kentucky. The county's northern border with Indiana is formed by the Ohio River.

Adjacent counties[edit]

- Clark County, Indiana (northwest)
- Trimble County (northeast)
- Henry County (east)
- Shelby County (southeast)
- Jefferson County (southwest)

Graph of Oldham County population over time

Demographics:

Population:

1880	7,667	−15.1%	**1940**	10,716	44.8%	**2000**	46,178	6.3%
1890	6,754	−11.9%	**1950**	11,018	2.8%	**2010**	60,316	30.6%
1900	7,078	4.8%	**1960**	13,388	21.5%	**Est. 2016**	65,560	8.7%
1910	7,248	2.4%	**1970**	14,687	9.7%			
1920	7,689	6.1%	**1980**	27,795	89.2%	U.S. Decennial Census[7] 1790-1960[8] 1900-1990[9] 1990-2000[10] 2010-2013		
1930	7,402	−3.7%	**1990**	43,455	56.3%			

As of the census[11] of 2000, there were 46,178 people, 14,856 households, and 12,196 families residing in the county. The population density was 244 per square mile (94/km²). There were 15,541 housing units at an average density of 82 per square mile (32/km²). The racial makeup of the county was 93.62% White, 4.21% Black or African American, 0.21% Native American,

0.44% Asian, 0.01% Pacific Islander, 0.55% from other races, and 0.97% from two or more races. 1.30% of the population were Hispanic or Latino of any race.

There were 14,856 households out of which 44.10% had children under the age of 18 living with them, 71.50% were married couples living together, 7.80% had a female householder with no husband present, and 17.90% were non-families. 14.90% of all households were made up of individuals and 4.80% had someone living alone who was 65 years of age or older. The average household size was 2.85 and the average family size was 3.17.The age distribution was 27.40% under the age of 18, 6.90% from 18 to 24, 33.10% from 25 to 44, 25.60% from 45 to 64, and 7.00% who were 65 years of age or older. The median age was 37 years. For every 100 females there were 114.00 males. For every 100 females age 18 and over, there were 117.90 males.

The median income for a household in the county was $70,171 (2005), and the median income for a family was $70,495. Males had a median income of $46,962 versus $28,985 for females. The per capita income for the county was $25,374. About 2.90% of families and 4.10% of the population were below the poverty line, including 4.50% of those under age 18 and 6.00% of those age 65 or over. Oldham County is the most affluent county in the state of Kentucky; most residents work in Louisville and choose to live in Oldham County due to the lack of crime and the nationally recognized school system. South Oldham High School in particular, is ranked very highly among state high schools, having been named a national blue ribbon school of excellence.[citation needed] 2006 classes at Oldham County High School were reported as to have a teacher:student ratio of 1:15, but that number does not accurately reflect the ratio of a normal class.[citation needed] That number includes, e.g., the small classes of 5-6 students in Behavioral Disorders.[citation needed] The published ratio also includes small classes at the County Career Center, which is located on the same campus.[citation needed]

Communities

Cities	Census-designated places	Other unincorporated places
• Crestwood • Goshen • La Grange (county seat) • Orchard Grass Hills • Pewee Valley • River Bluff	• Buckner • Westport	• Ballardsville • Brownsboro • Centerfield • Floydsburg • Park Lake • Prospect

people

- D. W. Griffith, highly influential film director (*The Birth of a Nation*, *Intolerance*)

Knocked Loose, a metalcore band signed to Pure Noise Records

Notable Politics

Presidential Elections Results[12]			
Year	Republican	Democratic	Third Parties
2016	**62.3%** *20,469*	31.3% *10,268*	6.4% *2,116*
2012	**67.5%** *20,179*	30.9% *9,240*	1.6% *465*
2008	**64.8%** *18,997*	34.1% *10,000*	1.1% *319*
2004	**69.3%** *18,801*	29.8% *8,080*	0.9% *251*
2000	**67.0%** *13,580*	30.8% *6,236*	2.2% *452*
1996	**57.3%** *10,477*	33.9% *6,202*	8.9% *1,622*
1992	**49.7%** *8,263*	32.8% *5,457*	17.5% *2,919*
1988	**68.1%** *8,716*	31.5% *4,025*	0.4% *51*
1984	**73.8%** *8,112*	26.0% *2,857*	0.2% *22*
1980	**58.7%** *5,586*	36.7% *3,487*	4.6% *437*
1976	**55.7%** *3,695*	42.5% *2,819*	1.8% *117*
1972	**68.0%** *3,041*	29.3% *1,311*	2.7% *120*
1968	**41.5%** *1,655*	35.0% *1,399*	23.5% *939*
1964	32.3% *2,622*	**67.5%** *1,256*	0.2% *6*
1960	**53.1%** *2,221*	46.9% *1,960*	0.0% *0*
1956	**54.4%** *2,128*	45.3% *1,769*	0.3% *12*
1952	49.6% *1,723*	**49.9%** *1,735*	0.5% *18*
1948	35.5% *1,036*	**58.3%** *1,703*	6.2% *180*
1944	34.7% *1,021*	**64.7%** *1,908*	0.6% *18*
1940	29.9% *848*	**69.8%** *1,983*	0.4% *10*
1936	27.2% *760*	**72.3%** *2,020*	0.5% *14*
1932	27.5% *888*	**71.7%** *2,319*	0.8% *26*
1928	**54.0%** *1,604*	45.8% *1,359*	0.2% *6*
1924	31.3% *906*	**67.5%** *1,954*	1.2% *35*
1920	27.5% *1,014*	**72.1%** *2,655*	0.4% *15*
1916	30.3% *642*	**68.8%** *1,455*	0.9% *19*
1912	14.9% *261*	**66.1%** *1,159*	19.1% *334*

APPENDIX 3
Trusses and Solar Panels
New Threats to Firefighters

What Does This Sign Found on Doors of New York Businesses Mean?

 By Boris May 25, 2016 12:11 PM

A. Boris

You may have seen this symbol in front of businesses throughout the Hudson Valley. Did you ever wonder what it actually means?

Yesterday while waiting for my car to be serviced I was staring at the front door and started wondering about this sticker that I've seen on many other businesses in the area. It's a red circle with the letters "II" over the letter "R."

I've never really stopped to think about what it means, but suddenly I was curious. Was it a special business affiliation? A signal that there were two restrooms available inside? Or maybe it's a secret Illuminati membership sticker?

Well, it turns out that it's something even more important than that. New York State law requires that the symbol be displayed on any building that is made with truss construction. A truss is a piece of construction made of smaller segments of wood or

metal that are connected together to span long distances that usually require pillars or beams. They're mostly used to keep construction costs down and reduce the weight of buildings.


A. Boris

Truss construction is a concern for firefighters because they can lead to building collapse. According to Fire Engineering, there have been some catastrophic disasters that have claimed the lives of firefighters who were unaware the buildings they were going into were made with truss construction. When just one small part of a truss catches on fire, the whole structure can come down, trapping emergency members inside.

That's why New York State has developed the Truss Identification Sign. The sign is required on every entrance to a building made with a truss. Inside a red circle is a Roman numeral that designates what type of truss is in the building. Underneath the numeral is the letter R for "roof," F for "floor" or both, letting firefighters know where the truss is located.

So the next time you see one of these signs don't worry about walking in on a secret meeting of the Illuminati, it's just a building that's made of truss construction.

Read More: What Does This Sign Found on Doors of New York Businesses Mean? |

http://wpdh.com/what-does-this-sign-found-on-doors-of-new-york-businesses-

mean/?trackback=fbshare&trackback=tsmclip

Firefighters: Solar panels are risky during fires

Consumer Investigator Susan Campbell

Published: May 5, 2016, 5:07 pm Updated: May 5, 2016, 6:33 pm

Related Coverage

PROVIDENCE, R.I. (WPRI) – The weight of residential solar panels is equivalent to an extra layer of shingles. That may not sound like much, but firefighters say the extra weight could make your roof collapse much faster in a fire.

That's just one of the concerns first responders have about solar panels, which are growing in popularity in Rhode Island.

"You will see more of these as time goes on," said Vito Buonomano of Northeast Solar & Wind Power.

Firefighters have noticed the trend, too.

"I drove around town the other day and there's quite a few in the town of West Warwick," said Lt. Paul McAllister of the West Warwick Fire Department.

McAllister told the Target 12 Investigators that solar panels are changing the way firefighters battle flames for several reasons.

Added Weight

According to Lt. McAllister, the added weight from solar panels could force firefighters to go on the defense, rather than attack a fire from the inside.

"Normally, under ten minutes of heavy fire conditions, a roof structure usually collapses," said McAllister. "This is probably going to be a little bit sooner now if we have solar panels on the roof."

Limited Access for Vertical Ventilation

Firefighters say solar panels limit access to do vertical ventilation, which could impact the time it would take to put out a fire. "When we do vertical ventilation, it's to reduce the fire and smoke spread throughout the building or structure," explained McAllister.

Electrocution Risk

"If we were to throw a ladder to the roof and the ladder would puncture the solar panels," said McAllister, "that could cause an electrocution to the members who were putting the ladders on the roof."

Safety Measures

By law, solar energy shut-offs have to be clearly marked, and before any solar panels are installed, a structural engineer has to evaluate the structural integrity of the building. There's also a strict permitting process to ensure solar panels are installed properly.

According to data Target 12 requested from the RI Department of Labor and Training, the agency has issued 34 Renewable Energy Professional Certificates since the green energy law went into effect in 2015.

"Rhode Island has sufficient regulations in place to ensure that whoever comes to your home or business is competent," said Buonomono. He added, "I can honestly say to a firefighter, as long as they turn off the power when they arrive at the scene, it's very safe, extremely safe."

U.S. Department of Energy data backs up that claim. According to the agency, there have been no documented deaths caused by electric shock, chemical burn or fire caused by a solar panel.

"We're going to keep it that way, I hope," said McAllister. "That's why we train."In the March and April, the Rhode Island Department of Energy hosted two solar safety training sessions for first responders.

Solar Safety in Other States

According to the Solar Energy Industries Association, "many building codes now include provisions intended to address firefighter safety, such as minimum setback areas to provide space on the roof for walking around solar products."

"Solar is relatively new to Rhode Island," said Buonomono. "I think in time the whole country will go that way, adopt the California code."

California's installation guide includes mandatory setbacks for solar panels on roofs. "You don't go all the way to the ridge," explained Buonomono. "Three feet from the ridge, three feet from either end so that the firemen have a path to get up onto the roof and vent the roof. I would like to see Rhode Island adopt that law. I'm sure they will in time.

APPENDIX 4

NASA's New Technology that could be used by NOFD Some Day

Los Angeles Daily News

Artificial intelligence

How NASA is using artificial intelligence to save lives of firefighters, first responders

Los Angeles firefighters work on a burning natural gas main Wednesday at Shoup Avenue and Miranda Street in Woodland Hills Aug. 3. Photo By Gene Blevins

By Jason Henry, San Gabriel Valley Tribune

Posted: 08/14/16, 2:53 PM PDT | Updated: 8/16/16

NASA's new artificial intelligence — capable of running on a cellphone — could soon put Apple's Siri and Microsoft's Cortana to shame.

The hope for the AI, named AUDREY, is to be deployed in the field to help save first responders' lives by making split-second recommendations in dangerous situations, NASA officials said.

AUDREY works by pulling in data from the environment and from the equipment being carried by first responders.

In this way, the AI can detect temperature changes, gases and other threats. The cloud-based overseer will then on its own send custom warnings to individuals in the field.

In a fire, it might detect a propane tank through a camera carried by the firefighter, or warn of elevated temperatures in a nearby room.

“The information all becomes shareable and then the decision will be made by these kind of guardian angels for each of the firefighters,” said Edward Chow, manager of the Jet Propulsion Laboratory’s Civil Program Office and AUDREY program manager.

AUDREY’s connectivity bridges the gaps in different communication networks, allowing the AI to spread information to different agencies at the same time.

In one example provided by NASA, AUDREY predicted a possible explosion in a building. The AI automatically warns a police officer inside to evacuate, while also telling incoming firefighters or hazardous-material teams to address the threat quickly.

At the same time, a message goes out to personnel outside to limit access to the building.

AUDREY stands for Assistant for Understanding Data through Reasoning, Extraction and sYnthesis. JPL partnered with the Department of Homeland Security to develop the AI.

DHS wants AUDREY to become another tool for what it calls the “Next Generation First Responder.”

Those firefighters, police officers and EMTs of the future will carry body-worn sensors, cameras and augmented glasses with heads-up displays. The data they collect could then be broadcast over a variety of networks.

Such technology could allow a battalion chief to see where every firefighter is inside a building, track their vital signs and learn of potential environmental dangers.

AUDREY could even tap into the networks of home and business devices expected to become more prevalent in the next decade such as smart thermometers and fire alarms.

“The proliferation of miniaturized sensors and internet of things devices can make a tremendous impact on first responder safety, connectivity and situational awareness,” said John Merrill, Next Generation First Responder program manager for the DHS’ Science and Technology Directorate.

“The massive amount of data available to first responders is incomprehensible in its raw state and must be synthesized into usable, actionable information,” he said.

AUDREY does exactly that. The AI pulls in all the data and distributes only the most relevant information to individuals based on their role and location, allowing the first responders to do their jobs without getting overloaded by readings.

AUDREY could mark hazards on heads-up displays, or even track an individual's heartbeat to look for signs of overexertion. If a firefighter is about to have a heart attack, or pass out, the AI could warn EMTs waiting outside.

Line of duty deaths often happen through overexertion, and heart attacks are one of the leading causes, according to Tracy Rickman, coordinator of the fire academy at Rio Hondo College.

The technology could literally be a lifesaver.

"Anything we can do to protect firefighters and keep firefighter safety at the forefront is huge," he said.

The AI's effectiveness will depend on how the technology is implemented though, if it makes it that far, Rickman said.

AUDREY isn't quite ready for release, but JPL plans to start real-world tests within a year.

The whole system might sound like far-off science fiction, but Chow said AUDREY could hit the commercial market within the next few years. That's dependent on a company licensing the technology, which NASA can't sell itself.

Other versions of the AI are under development for internal use at NASA and the Department of Defense.

Chow couldn't discuss the Defense Department's goals. But for NASA, AUDREY would act as a "flight director in a box," offering help to astronauts who are too far away with real-time communication. The communication delay makes AUDREY a welcome stowaway for missions to Mars or Europa, a moon of Jupiter.

APPENDIX 5
Vanishing Volunteer Firefighters

POSTED ON MARCH 18, 2017 BY MTAIRYNEWS

The Mt. Airy News

Lack of volunteers forcing Surry County fire departments to hire personnel

NEWS

Lack of volunteers forces decision

By Andy Winemiller - awinemiller@mtairynews.com

DOBSON — One volunteer fire department now has a paid staff, and another department will soon follow suit.

South Surry Volunteer Fire Department began paying part-time firefighters on Feb. 1, according to Tony Tilley, the department's chief.

Tilley said the four part-time firefighters will work eight-hour days, with one person on duty from 7 a.m. through 3:30 p.m. on Monday through Friday. They will rotate between the department's two stations, and each will work no more than 25 hours per week.

Tilley said the move had been in the works for quite some time. His department worked for about a year to put it in motion.

The change in direction has been something with which South Surry and other departments have been tangling for years, as pools of able and willing volunteers dry up.

"It used to be people in Surry County were farmers or self-employed. If a call came in, they could drop what they were doing and go help," explained Tilley. "Now it's hard to find people people who can get off work to do that."

Tilley mentioned his department has 38 people on its roster, but if he sees 12 to 15 volunteers at a call, he considers it a good turn-out.

Also playing into the scheme are increased administrative and education requirements for departments and firefighters. Many volunteers miss calls because they are attending required continuing education sessions.

Tilley said the paid firefighters won't be sitting around all day waiting for a call to answer. They will be busy checking trucks and water points and performing maintenance, which will help volunteers shift their priorities during meetings.

"With all of that maintenance taken care of, when we have our meetings volunteers will have more opportunity to conduct training," added Tilley.

The Surry County Board of Commissioners increased the tax rate in the South Surry Fire District in the 2016-17 fiscal year's budget from 5.5 cents to 6.5 cents per $100 of property value.

Tilley noted his board had asked for an increase of two cents in order to hire two positions and staff each station throughout the week.

According to figures provided by Surry County Finance Officer Sarah Bowen, this fire department is expected to collect $182,042, about $28,000 more in tax dollars than the department would have collected at its prior tax rate.

Tilley said the increase is reflective of the costs associated with adding the paid staff, and the penny increase goes entirely toward funding that on-duty person.

South Surry was among three departments which received bumps to their tax rate in the 2016-17 fiscal year. The other two were the Franklin Volunteer Fire Department and the C.C. Camp Volunteer Fire Department.

Franklin next

Franklin is also set to soon hire part-time employees. However, Chief Johnny Hiatt said the current fiscal year's tax rate hike is unrelated to the move. The department will ask commissioners for another penny and a half on the tax rate in the 2017-18 fiscal year.

Hiatt explained when the department built its new station on West Pine Street about eight years ago, the department had requested a two-cent increase to pay for increased costs. At the time, county commissioners only granted half of the request, upping the rate by a penny.

Hiatt said his department has struggled to pay higher costs such as power bills and maintenance costs associated with the larger structure, which is also used as a Red Cross shelter, by emergency management and by other entities.

“Commissioners agreed to give us the other penny we had expected years before,” added Hiatt, who has been a volunteer for the department for more than three decades.

Hiatt explained his department is adding two part-time firefighter positions to its organization, which will be filled by eight personnel. The two firefighters on duty each day will work an eight-hour shift which begins at 7 a.m. or 8 a.m. Each of the department’s two stations will be manned.

The two paid personnel will be a huge asset to the department and the community, said Hiatt.“With volunteers we might get a truck out of the door in three, four, five or even six minutes,” explained Hiatt. “With the paid positions, that truck will be out of the door in 30 seconds.”

With four county schools in the fire district (Franklin, Meadowview, Gentry and North Surry) and a population of more than 8,000 served, Hiatt emphasized a quicker response time matters. It can save lives and damage to property. Additionally, the firefighters will respond to all medical calls in the district, likely beating EMS paramedics to the scene to provide potentially life-saving treatment.

His department ran more than 800 calls in 2016, according to the chief.

Hiatt said there’s additional benefits to the department. Like at South Surry, the paid firefighters won’t sit around all day waiting for a call. They will be put to work performing necessary maintenance, checking water points and completing paperwork.

In the past, volunteers have had to spend at least one Sunday every month doing such work.

“I’ve had 31 years of Sunday workdays,” said the chief.

According to Hiatt, the administrative burden which falls on fire departments has greatly increased in recent years. However, keeping up with some of those mundane matters helps the department keep its ISO rating up, which positively impacts homeowners’ insurance premiums in the fire district.

The 1.5-cent tax increase for which the department has asked would generate about $65,000 in additional revenue to fund the addition of the part-time personnel, according to Bowen’s numbers, which are based on a 96-percent collection rate.

Hiatt noted salaries and unemployment insurance will cost the department about $43,000 to staff the new positions. Firefighter compensation will be $10 per hour.

According to Hiatt, dollars will be needed for more than just salaries, however. Each new addition to the department will need equipment and uniforms. The cost of worker’s compensation insurance will skyrocket once paid personnel come on board, increasing from less than $100 per person to more than $300 per person.

Hiatt said at 8,000 residents served, his department is serving nearly as many people as Mount Airy's full-time fire department, and like Tilley, he has seen volunteer participation decrease.

"People can't take the time off work anymore," said Hiatt. "They don't work for themselves anymore."

Hiatt said the department is still accepting applications for the positions, which he hopes to have filled by the end of April.

He urged interested applicants to call him at (336) 710-8232. To be eligible, applicants must be 21, certified firefighters and hold emergency medical technician basic credentials. One must also have a North Carolina Class B driver's license and be a certified emergency vehicle driver.

The movement begins

The movement to a part-time firefighting force supported by volunteers shouldn't catch anybody in county government off guard. Commissioners have discussed a possible need to bring paid personnel on board while finalizing a county budget in recent years.The major factor driving the movement in that direction is the unavailability of a qualified pool of volunteers."Our volunteers have gone down to rock-bottom numbers," said Hiatt.Other chiefs who have presented to the board of commissioners have sung a similar tune in regards to the availability of volunteers.

In 2007, The News reported there were about 100 less volunteers throughout the county's 19 fire districts than in 1989. At that time, Surry County Fire Marshal Doug Jones said, "It's probably getting into the crisis, or near-crisis, level."

Hiatt said nearly a decade ago departments throughout the county sought the same remedy they are putting into motion now, but failed to gain the support of county officials at the time. Now with a board which is understanding of the woes, most departments in the county are planning to move forward with similar plans in the coming years.

Hiatt added departments in surrounding counties use a similar system to the one being put in place in Surry County.

Andy is a staff writer and may be reached at 415-4698

APPENDIX 6
Recruiting Volunteer Firefighters

Daily News - Park City (South-central Kentucky)

Hotline established to recruit volunteers

0

Posted: Sunday, March 16, 2014 1:45 am

Updated: 1:51 am, Sun Mar 16, 2014.

Hotline established to recruit volunteers By DEBORAH HIGHLAND The Daily News
dhighland@bgdailynews.com/783-3243 | **0 comments**

Warren County's volunteer fire chiefs hope a new Kentucky Fire Commission hotline will assist them in recruiting volunteer firefighters for the county's nine volunteer departments.

The commission recently established 1-800 FIRELINE (347-35463) for prospective volunteer firefighters to call from anywhere in the state. A Fireline representative will answer the call and take down the name and contact information from the caller, then forward that information to the volunteer department closest to the caller.

"We're hoping to get more people," said Jacob Warren, volunteer firefighter recruitment and retention coordinator for the Kentucky Fire Commission. "This is a recruiting tool to help get people."

Alvaton Volunteer Fire Department Chief Brad Harper said his department is well staffed at the moment, but volunteer departments are always looking to increase their numbers because volunteers move away or quit for a variety of reasons.

"We're constantly looking for good people," Harper said.

Harper's department received a grant last year that he used to recruit volunteers through buying advertisements in the newspaper and on television.

"With that grant we have recruited over 10 volunteers," Harper said. "It helps you with getting out in the public."

His grant period runs out in July, so he hopes the new Fireline will provide recruitment assistance.

“I believe that if it’s publicized well enough and the funds are put for advertising this number, I believe it will help,” Harper said. “It’s going to be all about how it’s presented and how much it is presented to the public.”

Browning Volunteer Fire Department Chief Mike Green is currently advertising for firefighters on signs throughout the Browning coverage area.

“We’re already shorthanded, especially in the daytime,” Green said. “We’ve got probably 25 firefighters. We could use at least 10 more firefighters.”

He doesn’t have funding to buy advertising, so he’s looking forward to people learning about 1-800-Fireline.

“It will just bring more people to our fire station,” he said.

Woodburn Volunteer Fire Department has an adequate number of firefighters, Chief Bob Skipper said. However, he can see how the hotline will help departments such as Browning or Smiths Grove, if the number is advertised well enough.

“I think anything that makes it easier for people to find out how to volunteer can be a benefit,” Skipper said. “I’m not sure how many people will be able to find that number or how well they’ll market it. That remains to be seen. I think it would be a benefit to some departments.”

Smiths Grove Volunteer Fire Department Chief Kenneth Priddy said his department is “never fully staffed.”

“Any tool we can desperate but we could always use good help, always.”

— Follow news editor Deborah Highland on Twitter at twitter.com/bgdnnewseditor or visit bgdailynews.com.

APPENDIX 7
SAFER Grant Information

Overview

The Staffing for Adequate Fire and Emergency Response Grants (SAFER) was created to provide funding directly to fire departments and volunteer firefighter interest organizations to help them increase or maintain the number of trained, "front line" firefighters available in their communities. The goal of SAFER is to enhance the local fire departments' abilities to comply with staffing, response and operational standards established by the NFPA (NFPA 1710 and/or NFPA 1720). For details visit http://www.nfpa.org/freeaccess.

Staffing for Adequate Fire & Emergency Response Grants

Last Updated: 07/14/2017 - 10:15

This section is for fire departments (national, state and local) or tribal organizations that represent the interests of firefighters. The section contains information on the Staffing for Adequate Fire and Emergency Response (SAFER) Grants program, application assistance tools, previous grant awards, grant statistics, and more.

the National Fire Protection Association's codes and standards.

SAFER Program Updates

STAFFING FOR ADEQUATE FIRE and EMERGENCY RESPONSE (SAFER) Grants

FY 2016 SAFER Open Application Period is now closed.

SAFER Award Announcements

For SAFER Application Guidance Materials, please visit our Documents page.

System for Award Management (Sam.gov) registration is required of all AFG Program applicants and awardees. Please go to SAM.gov/portal/public/SAM/ and follow the FAQs and User Guides for help completing the registration. For additional information, please visit our SAM.gov resource page.

SAFER Program Tools

SAFER Program Videos

Although the AFG Program Office strives to make the information contained in these videos as timely and accurate as possible, the videos were not intended to be used as substitutes for reading the latest Funding Opportunity Announcement (FOA) or guidance documents. The AFG program office makes no promises, claims or guarantees about the accuracy, completeness or adequacy of the contents of these videos and expressly disclaims liability for errors and omissions in the contents of these videos.

Watch the following SAFER videos

- SAFER Grant Recruitment and Retention Video
- FY 2010 SAFER Grant Program Video
  OTHER RESOURCES
- **SAFER Grants Management 101 Webinar**
  - Material from the SAFER Grants Management 101 Webinar for FY 2009/2010 is now available for download. (PDF 609kB, TXT 18kB)
  - **Topics discussed include:**
    - Periods of performance
    - Payment requests
    - Performance report requirements
- SAFER Program Guidance & FAQs
- SAFER Grant Success Stories
- If you are not currently receiving the free biweekly AFG Program E-Mail Alerts, be sure to sign up now on the E-Mail Alert signup page.

Getting Grants
by Jerry Brant

9 keys to a competitive SAFER grant

The grant period opens in about two weeks; have these bases covered to giver your application the best chance at success

By Jerry Brant

The Department of Homeland Security through FEMA announced that the Staffing for Adequate Fire and Emergency Response grant application period will begin on February 9 and remain open until 5 p.m. March 6.

Related Article:
SAFER grants: Path to a competitive application

This application period is actually for the 2014 SAFER grant, which is funded at $340 million. The SAFER grant program provides funding directly to fire departments and national, state, local or tribal organizations representing the interests of volunteer firefighters to assist them in increasing the number of firefighters that are available to help fire departments meet industry minimum standards.

This funding would allow these departments to attain 24-hour staffing to protect communities from fire and fire related hazards and to fulfill traditional missions of fire departments. The SAFER program is comprised of two categories: hiring firefighters and recruiting and retaining volunteer firefighters.

Hiring firefighters
Included in this are the subcategories for rehiring, retention, attrition and new hires. Career, combination and volunteer fire departments are eligible to apply under this activity.

The period of performance for this grant will run for 24 months. There is no local match required. The grant will cover the full salary and fringe benefits of the SAFER firefighters.

The priorities under this category are:

- Rehiring laid-off firefighters.
- Retaining firefighters who face imminent layoff or filling positions vacated through attrition, but not filled due to economic circumstance.
- Hiring new firefighters.

Recruiting and retaining volunteers
Combination fire departments, volunteer fire departments and national, state, local, or tribal organizations that represent the interests of volunteer firefighters are eligible to apply.

The period of performance can be between 12 and 48 months and there is no local match involved.The priority under this category is to assist departments experiencing a high rate of turnover and with staffing levels significantly below the ideal staffing required to comply with National Fire Protection Association Standards 1710 or 1720.

9 areas
Regardless of which category you are applying under there are nine areas to keep in mind as you develop your application.

1. SAFER-funded activities should help your department to meet the appropriate NFPA Standard (either 1710 or 1720) for staffing and assembly if you are funded.

2. SAFER should allow your department to have at least four firefighters on the first arriving apparatus.

3. If you are applying under the hiring category, SAFER-funded firefighters should meet NFPA 1001 Firefighter II certification by the end of the second year.

4. If you are applying under the hiring category, SAFER-funded firefighters should meet at least the minimum EMS certification for your state or locality.

5. Under either category, new firefighters should receive entry-level physicals and immunizations through your SAFER program.

6. New firefighters should receive annual medical exams.

7. Under either category, your department's SAFER program should provide firefighters with accidental death and dismemberment insurance.

8. Recruitment and retention applications should be based on a formal recruitment and retention plan. In addition, recruitment and retention applications should have a periodic evaluation of the program's impact built into the application. Hiring applications should be based on a staffing needs assessment.

9. For a regional request for recruiting and retention, every department involved in the application must sign a memorandum of understanding prior to the close of the application period.

Regardless of which SAFER category your department is considering make sure you have a current DUNS number, an employee identification number and an active registration with System for Award Management.

About the author

Jerry Brant is a Senior Grant Consultant and Grant Writer with FireGrantsHelp and EMSGrantsHelp. He has 40 years of experience as a volunteer firefighter in rural west central Pennsylvania. He is a life member of the Hope Fire Company of Northern Cambria, where he served as chief for 15 years. He is currently an active member of the Patton Fire Company #1. For 20 years, Jerry was employed as the executive director and then president of a small non-profit community development corporation. Jerry has successfully written more than $52 million in grant applications and proposals. Jerry can be reached at Jerry.Brant@FireGrantsHelp.com.

APPENDIX 8
AFG and other Grants; Examples

Kentucky receives nearly $3 million in Homeland Security grants

0 Comments for this article
By: Tom Kenny
Submitted: 10/03/2017 - 7:11pm
Tags: Counties, Emergency Services Equipment, Fire Equipment, Homeland Security Grants, Kentucky, Law Enforcement Equipment

FRANKFORT, Ky. (WTVQ) – After an extensive evaluation and review process, today the Kentucky Office of Homeland Security (KOHS) announced 114 grant recipients spread across 77 counties will receive a total almost $3 million under Kentucky's 2017 Homeland Security Grant Program to purchase law enforcement, fire and emergency services equipment.

"My greatest responsibility as governor is to ensure our citizens and resources are well-protected," said Gov. Matt Bevin. "To do this effectively, homeland security grants are

allocated without regard to political preference or influence. As a result of our objective process, safety and security throughout the Commonwealth are being maximized."

For the 2017 federal fiscal year, KOHS will administer $2,869,600 in U.S. Department of Homeland Security (DHS) grants to city and county governments, fire protection districts and area development districts to purchase first responder equipment, communications equipment and critical infrastructure protection. This represents a 9.6% increase over 2016 HSGP grant awards.

"Every year, the Kentucky Office of Homeland Security shoulders the heavy burden of soliciting, processing, evaluating and prioritizing many more grant requests than funding is available to fulfill," said KOHS Executive Director John Holiday. "As such, it is imperative that precious grant dollars are put to use where they can have the greatest impact for the first responders of the Commonwealth and the people they serve throughout Kentucky."

The grant process is extremely competitive. For the current grant cycle, KOHS received 259 applications requesting $13 million, more than four times the available funds. Ninety-nine Kentucky counties applied for grant funding in the current cycle, and the 114 grants awarded will be spread throughout 77 counties.

"I wish we could offer funding to every county and city within the Commonwealth," Holiday stated. "Each is dealing with their own financial challenges. However, we must apply critical thinking and apply a regional approach to allocate money based on utmost need and greatest public safety impact."

For a complete listing of the 2017 Homeland Security Grant Program awardees, visit: http://homelandsecurity.ky.gov/Pages/Grants.aspx.

102.3 Fox

$189,000 in Federal Funds awarded $ 189,791 to Madison Township Fire Department

posted by Rusty Cates - June 7, 2017

Today, U.S. Sen. Sherrod Brown announced that the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA) has awarded $ 189,791 to the Madison Township Fire Department for Operations and Safety upgrades through the Assistance to Firefighters Grants (AFG) program.

"Ohio firefighters and first-responders work every day to protect our families," said Brown. "We must support our first-responder organizations so that communities like Mansfield have the resources to shield families and homes from fire hazards."

The AFG program supports fire departments across the country to ensure the safety of both first-responders and the public. The program provides funds for supplemental training, upgrades to protective equipment, facility modifications, and other supplies that protect firefighters and first-responders in moments of crisis. Grants are awarded to fire department-based and non-affiliated EMS organizations that best address the priorities of the AFG Program.

Read more: http://wfxnthefox.iheart.com/articles/wman-local-news-122687/189000-in-federal-funds-awarded-189791-15891288/#ixzz4jQ5UlsiT

APPENDIX 9
Residential Sprinklers

NFPA RSS NEWS FEEDS

NFPA LAUNCHES HOME FIRE SPRINKLER GRANT PROGRAM

Grants to fund sprinkler campaigns across North America

March 23, 2015

To further the life-saving impact of home fire sprinklers, the National Fire Protection Association's (NFPA) Fire Sprinkler Initiative today announced the launch of a new grant program to help fund sprinkler advocacy campaigns across North America.

The Bringing Safety Home Grant Program will assist as many as 10 selected U.S. state sprinkler coalitions and other safety advocates with up to $10,000 grants to support activities that showcase the importance of home fire sprinklers. Sprinkler advocacy is gaining momentum as more residents and policy-makers understand the value of the devices in new homes. Home fire sprinklers can reduce home fire deaths by about 80 percent and direct property damage by about 70 percent, according to NFPA research.

The vast majority of U.S. fire deaths occur in homes. In 2013, home fires caused nearly 2,800 deaths out of more than 3,000 total fire deaths and injured more than 12,000 others in the U.S. The life-saving capability of home fire sprinklers is the reason why all model building codes require sprinklers in all new, one- and two-family dwellings.

FIRE SPRINKLER INITIATIVE
Bringing Safety Home

"At NFPA, we are committed to doing all we can to make sure that more people are protected by sprinklers at home," said Lorraine Carli, vice president of Outreach and Advocacy at NFPA. "To help save lives, the Fire Sprinkler Initiative's Grant Program supports the great ideas of sprinkler coalitions and other safety advocates across North America."

Grant applicants throughout the U.S. and Canada can apply for up to $10,000 to fund a proposed home sprinkler campaign or project in their state or province that underscores the necessity of sprinklers. The grant program spurs innovative thinking for sprinkler advocacy, with questions including: How can this grant help further the message in your state or region that sprinklers in new homes save lives? Is there a new way to educate the public and decision-makers on the value of home fire sprinklers? How can you expand on a tried-and-true method of sprinkler advocacy? NFPA has also developed a number of campaign options to help inform applicants' proposed ideas.

Applications, available at firesprinklerinitiative.org/grant, must be submitted to firesprinklerinitiative@nfpa.org by April 20, 2015.

About the Fire Sprinkler Initiative®
The Fire Sprinkler Initiative®, a project of the National Fire Protection Association, is a nationwide effort to mandate the use of home fire sprinklers and the adoption of fire sprinkler requirements for new construction. Visit the Fire Sprinkler Initiative website atwww.firesprinklerinitiative.org.

About the National Fire Protection Association (NFPA)
NFPA is a worldwide leader in fire, electrical, building, and life safety. The mission of the international nonprofit organization founded in 1896 is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. NFPA develops more than 300 codes and standards to minimize the possibility and effects of fire and other hazards. All NFPA codes and standards can be viewed at no cost at ww.nfpa.org/freeaccess. Contact: Lorraine Carli, Public Affairs Office: +1 617 984-7275

ALL ICC MEMBERS: VOTE NOW

TO DEFEND HOME FIRE SPRINKLERS

VOTING DEADLINE – MAY 26, 2016

The requirement for all new homes to have home fire sprinklers has been included in the International Residential Code (IRC) for the past three editions, and because of this requirement, over 100,000 families now live in sprinklered homes. Housing markets in these areas are thriving. Nevertheless, sprinkler opponents have repeatedly tried to eliminate the sprinkler requirement from the IRC in every code cycle since initial adoption in 2009.

Once again, with the 2018 edition code cycle underway, the IRC is under attack, with five proposals seeking to diminish or eliminate the home fire sprinklers. We are fortunate that all five proposals were rejected by the IRC Committee at the April 2016 public hearing. However, an "Assembly Motion" was made for Proposal RB129-16, which requires a supplemental vote by ICC members, and we need your help to oppose/defeat the assembly motion. To protect the public and firefighters, we must fight once more to support sprinklers, and with ICC's latest rules, you can now vote online without having to attend the code hearings in person. **The future of residential fire safety in America hinges on winning this vote and upcoming votes that may occur during ICC's final action voting in November 2016.** Home fire sprinklers represent our best chance of striking at the heart of America's fire problem. We won the home fire sprinkler issue 8 years ago, culminating a 30-year effort, and we've been successful in defending that requirement in the 2009, 2012 and 2015 editions of the IRC. Losing now would set back home fire safety for decades.

ALL ICC MEMBERS ARE ELIGIBLE TO PARTICIPATE IN THIS VOTE. **For this vote, you DO NOT have to be a governmental employee to participate. All current ICC members, including contractors, manufacturers, consultants, etc., are eligible to vote. Governmental employees who completed the required annual validation process prior to March 18th are also eligible to vote. Governmental employees who did not re-validate prior to March 18th, are not eligible to participate in this vote. However, governmental employees still have time to be validated for participation in final action voting later this year if the required validation process is completed prior to September 19th. The individual responsible for the governmental organization's voting appointments must go to: http://www.iccsafe.org/news-announcements/update-your-2016-voter-representative-information/**

APPENDIX 10
Chicago Tribune:
Residential Sprinklers

Chicago Tribune

New homes burn faster, but states resist sprinklers

By Melanie Hicken Reuters

- *12:03 a.m. CDT, August 10, 2012*
  NEW YORK (Reuters) - In Scottsdale, Arizona, any new home must come equipped with fire sprinklers, a decades-old rule lauded by fire safety advocates nationwide. But 12 miles away in Phoenix, city officials are not even allowed to discuss adopting a requirement like Scottsdale's, because of a state law passed last year.

  The same is true in Texas, Alabama, Kansas and Hawaii, where in the past four years state governments have enacted bills forbidding cities and towns from requiring sprinklers in new homes. A dozen have forbidden statewide building code councils from including the requirement in their guidelines.

  Advocates -- including firefighters, fire safety groups and the sprinkler industry --say sprinklers are needed more than ever in new homes because of builders' heavy use of prefabricated construction materials. The materials burn faster, firefighters say, causing more destruction and making rescue attempts more difficult.

  The state laws forbidding sprinkler requirements are unprecedented, public-safety advocates say, and underscore the political clout of the home-building and real estate industries. A Reuters review of lobbying records from five states that considered sprinkler legislation since 2009 shows the groups grossly outspent fire sprinkler advocates.

  "This is the only code provision that I'm aware of in 30 years of being in this business, where we've seen a preemptive strike that says, "You can't even consider it. It's not allowed,'" said Gary Keith, vice president of field operations for the National Fire Protection Association, a nonprofit advocacy organization. "That's unheard of with any other kind of provision."

  LIGHTWEIGHT RISKS

  Four years ago the landscape looked strikingly different. Coming off the housing market's peak years, scores of cities adopted fire sprinkler rules despite opposition from builders. And in 2009 sprinkler advocates cheered when the International Code Council, a nonprofit organization that develops national model building codes, voted that fire sprinklers should be required in all new one- and two-family homes.

Then came the worst housing market in U.S. history and a fragile economic recovery. Against that backdrop, lobbyists for the home-building industry, which opposes mandatory sprinklers, gained traction with lawmakers. Even as home building picks up after years of stagnation -- the U.S. Census Bureau projects more than 500,000 single-family housing starts this year -- many lawmakers remain wary of sprinkler regulations.

"When you start mandating a fire sprinkler system, you are going to price a lot of people out of these new homes," said Ned Munoz, vice president of regulatory affairs for the Texas Association of Home Builders, which lobbied heavily for anti-sprinkler legislation.

Although preemptive state laws have been imposed in other public-health policy areas, laws preempting building or fire safety regulations are unheard of, said Mark Pertschuk, an expert on preemptive laws with the Prevention Institute, a California nonprofit organization funded by private health foundations, government agencies and public health groups. "They haven't just taken away local control," Pertschuk said. "They've stopped the community debate about public safety and health." Most cities have required sprinklers in larger multifamily residences for decades. Fire safety advocates want to extend the requirement to all single-family homes, often citing the widespread use of lightweight construction, a building technique that relies on prefabricated and engineered wood products.

Designed to carry a greater load with less material, the prefabricated components are made from real or man-made wood fragments held together by glue or metal fasteners. The materials are commonly used to frame roofs and flooring. Assembled in factories and shipped to construction sites, these building components significantly cut down on construction time and cost. Builders also say the materials are better for the environment, because they use less wood, reducing deforestation.

But both real-life and test fires have shown that structures with lightweight construction burn much faster and collapse sooner than traditional solid-wood frame construction. That, firefighters say, makes fires harder to fight and shortens the time occupants have to escape a blaze.

"Not only is that second floor going to come down on your head in a very short period of time, the roof is going to collapse," said Danny Hunt, fire marshal in Nashville, Tennessee, where he said roughly 90 percent of new homes use lightweight construction.

Lightweight construction was introduced in the 1960s, and became popular in ensuing decades. Today, by their own accounts, the nation's largest builders use the materials extensively in new homes, as do many custom home builders. Firefighters say most homes built in at least the last 20 years contain the materials.

APPENDIX 11
Medicare Reimbursement

Medicare requiring pre-approval on ambulance rides to combat fraud in N.J. and Pennsylvania

(Emma Lee/for NewsWorks)

In an effort to crack down on ambulance fraud, the federal government is beginning a pilot program in Pennsylvania and New Jersey to change the way Medicare reimburses rides for non-emergency medical treatment.

The only people who are supposed to qualify for a free ambulance ride to their regular dialysis or cancer treatment appointments are those who really need it: patients who are bed-ridden or have another serious medical problem.

All too often, though, relatively healthy people have been using ambulances, sometimes with the encouragement of a kickback from a transport company. And at $400 for a round-trip, health care consultant Marsha Simon said Medicare's increasing tab has officials upset.

"We have the absurd situation at present that the cost of the ride is more than the cost of the dialysis treatment," she said.By December 15th, ambulance companies in New Jersey, Pennsylvania, and South Carolina will need to get prior authorization before transporting qualified patients who require rides on a regular basis.

Simon said the restriction is likely to cut down on improper billing. But it also may mean patients won't get the care they need."What may look like savings under the line item called ambulance," she said, "is going to end up being greater cost on the line item called hospital."

A much better solution, she said, would have been a pilot program that included a Medicare-funded transportation option for people who may not be able to drive or are unable to afford a taxi, but don't need an ambulance.Alternative transport is available in New Jersey, but only if a patient is enrolled in Medicaid — and no such service exists in Pennsylvania.

The Philadelphia area has been one of the worst offenders for ambulance fraud in recent years, including several high profile arrests. In January the government also issued a six-month moratorium on approving new operators in the region.

If the program is as effective at stamping out fraud as Simon believes, then it's possible some local companies will have to close."There's currently 63 non-municipal ambulance providers in Philadelphia alone," said Karen Kroon, the general manager of the American Medical Response ambulance company in Philadelphia. "It seems to me there's way too many for the legitimate number of transports that may be out there."

Her company focuses on transporting patients who are critically ill, and currently is not providing any rides to people who fall under the new regulations, although they have in the past.

"It's a little bit more paperwork, but we're fully prepared," said Kroon. "We have our pre-authorization process in place, and I don't see this having much of a impact on our business at all."

That may be less true of the ambulance providers she sees dropping off patients at the dialysis center across the street from her office.

"Patients walk out the back of the ambulance," she said. "I see it every day."

APPENDIX 12
Community Paramedicine and Mobile Integrated Healthcare

Monroe Fire Dept. Launching Community Paramedicine Program

By Jay Hanselman Aug. 19, 2015

The Monroe Fire Department is starting what it says is the state's first community paramedicine program. The launch is happening Friday evening.

When Governor John Kasich signed the state budget June 30, it included language enabling community paramedicine programs. It allows paramedics and EMT's to function in non-emergency roles in addition to providing traditional 911 emergency services.

Monroe Fire Chief John Centers said in a press release his department will utilize RN's and paramedics already on staff for a six month trail program. Monroe is working in conjunction with the Mount Pleasant Retirement Community.

Click here to learn more about community paramedicine.

http://wvxu.org/post/your-local-paramedics-could-soon-be-making-house-calls#stream/0

The Dallas Morning News

General News

Why your stubbed toe soon won't be as important to Dallas Fire-Rescue

By Tristan Hallman Follow @TristanHallman

Dallas City Hall Reporter

Published: 12 September 2016 04:22 PM
Updated: 12 September 2016 05:16 PM

Dallas Fire-Rescue officials are sick of ever-increasing ambulance runs.

But they say they have two remedies coming: a new dispatch system and an expansion of a program in which the department's paramedics make house calls.

Fire officials told members of the City Council's Public Safety Committee on Monday that they are nearly ready to buy new dispatch software that will help separate true emergencies such as heart attacks from routine medical issues such as stubbed toes.

Currently, Dallas Fire-Rescue responds to both types of calls by rushing an ambulance to the scene. That puts a strain on its Emergency Medical Services, whose call load increased more than 11 percent from fiscal 2012 to 2015.

City Council member Jennifer Staubach Gates, a registered nurse, called that jump "pretty significant." And Dallas Fire-Rescue Chief David Coatney said it's based on "a conservative analysis."

Earlier this year, Dallas Fire-Rescue had to call in private ambulances to help tend to the high number of people calling 911.

"There were a few days where we were really taxed on dispatch," Assistant Chief Daniel Salazar said.

Ideally, the new system will be operating next summer. The cost to the city will be no more than $258,906.

The software will give dispatchers scripted questions to figure out what ails callers and decide which tier of response to provide. All callers who need medical attention will still get help, but paramedics might take more time to get to less urgent cases. And they could show up in a fire engine or an SUV rather than a decked-out ambulance.

A Sept. 28 council vote will end the lengthy process to obtain the software from Priority Dispatch of Salt Lake City. Dallas Fire-Rescue first began looking into buying the system more than two years ago, and the consulting firm Fitch & Associates was hired to help figure out which software to buy.

Plano and other cities have been using similar software for years. Although the switch seems like common sense, the complex system's life-or-death implications have made for a painstaking process. Dallas Fire Fighters Association Vice President Scott Clumpner once called the tiered-dispatch system "a unicorn."

The next challenge will be informing Dallas residents about the new dispatch system. Salazar said City Hall will use social media and other means to tell people that their stubbed toes will soon be less urgent to Dallas Fire-Rescue.

The software also could help collect data on which types of calls are increasing.

Currently, "we don't have a very good ability to look at that data," Coatney said.

Frequent fliers

But the department knows some of the problems are caused by so-called EMS frequent fliers, who use ambulances as their primary medical care.

Dallas Fire-Rescue's Mobile Community Healthcare Program assigns paramedics as caseworkers to the most frequent 911 callers. They make in-house visits to check on the people and teach them how to take care of themselves. The hope is that they will become healthier and stop calling 911 for ambulance responses to every ache and pain.

The Affordable Care Act penalizes hospitals whose heart patients are readmitted within 30 days, so UT Southwestern Medical Center and Children's Medical Center Dallas pay the city to make the house calls.

But the program, which has seven paramedics on staff, hasn't met expectations. It's still not a moneymaker for the city or even self-sufficient. And deals with other hospitals have been slow to develop.

"It's been a very interesting journey, both with the hospital side and us trying to figure out how to make this work," Assistant Chief Norman Seals said.

But he said Monday that he has reached new agreements with MedStar and Texas Health Presbyterian. The deal with MedStar is to serve their hospice patients.

Seals also said the agreement with Children's Medical Center has been expanded.

"Adding these will allow us to get closer to cost-neutral," he said.

But Dallas Fire-Rescue Medical Director Marshal Isaacs told council members that losses on the balance sheet can still be a win.

"While the chiefs and I are certainly cognizant of the needs to be fiscally responsible and good stewards of the city's money, I wish we had more time to communicate to you the tremendous impact this is having on citizens of Dallas' lives, their health and the overall health of the community," he said.

On Twitter:
@TristanHallman

WISH TV 8

‘Mobile Integrated Healthcare’ aiming to cut down on repeat 911 calls

Scott Sander
Published: October 7, 2015, 5:00 am Updated: October 7, 2015, 6:49 am

CARMEL, Ind. (WISH) – “A win, win, win.” That’s how one Carmel Firefighter describes his department’s version of a hot new concept called **Mobile Integrated Healthcare.**

“There’s a lot of people around here who just need some extra help,” says Gary Fisher.

Fisher is one of six specially-assigned paramedics now tasked with providing “extra” help. In addition to serving full shifts on an ambulance, they also do some of their work out of an SUV and make a modern kind of house call.

As EMS Chief Tom Small explains it, a typical case for the Mobile Integrated Paramedic starts out by going out on emergency calls alongside the traditional ambulance team. But the Integrated Paramedic’s role is different.

“While the emergency team takes care of the patient, he kind of sits back and evaluates the home and sees if this patient would qualify for our program,” said Small.

The idea is that once a 911-type crisis is over, the patient is often left in the same kind of situation that can lead directly to another crisis – unless someone helps them find ways to prevent it.

EMS Trainer Jon Alverson gives the very common call of an elderly slip-and-fall as an example.

“We’ve traditionally been reactive. We get a 911 call, she’s fallen, let’s go take care of the problem and we transport her to the hospital. Now we’re in a new age. Let’s go out and do an assessment of this lady’s house. Let’s identify trip hazards,” explained Alverson.

In that case, the Mobile Integrated Paramedic would offer to do an assessment of the home. They would look for clutter or awkward stairs or spots prone to slips. Then they work with the patient and her family to make the home safer. The low-key visits offer a kind of patient

Paramedics say other common examples are patients who have incomplete, expired or disorganized prescriptions or those who have no idea how to get into the current health care system.

Chief Small says, unfortunately, “One of the most expensive ways they can get there is in the back of an ambulance into the emergency room.”

Carmel’s EMS Chief says at a minimum, an ambulance ride costs $341. If there’s any urgent care given, the price rises – often dramatically. One ride can run $587.29 depending on the situation. And that does not include any care given at the hospital.

Because of that, one ambulance run can be financially catastrophic, and yet some patients seem to have 911 on speed-dial.

The paramedics we spoke with insist they never mind going out to repeat calls at the same address, but they do worry about the fate of those they gently call “Loyalty Customers”. In some cases, the numbers are staggering.

“We have patients in our community who call 911, 75 to 80 times a year,” says St. Vincent Health’s Dr. Michael Kaufmann.

Kaufmann serves as EMS medical director for the hospital and Carmel Fire Department. In the Mobile Integrated Healthcare program, when the paramedic wants to offer health care on-site in someone’s home, he will often consult with a doctor. Together, the physician and paramedic can offer on-site aid that otherwise would require one of those costly ambulance rides and hospital admission.

“Some of the situations that they have to deal with are stressful on the families, the patients, the caregivers that are in the home,” says Alverson. “So we want to provide them a little guidance and navigation to assist them through the process.”

There’s a huge benefit to the hospital, too. As explained **here,** the new health care rules levy financial penalties on hospitals that release patients only to see them admitted again for the same problem within a month. St. Vincent Health is now underwriting the Carmel Mobile Integrated Healthcare program in part because it may be able to cut down on those re-admissions. The Fire Department ran the program out of its own budget for its first year, but now St. Vincent has committed $50,000 plus other resources to keep it going.

As Alverson explains, “Our goal here at the department is to provide the best customer service we can, and this is just another way of doing that.”

“I think this is that next service that fire departments should look into doing,” Small added.

APPENDIX 13
Kentucky Revised Statute 75

Kentucky Legislature

Kentucky Revised Statutes

List by Section

Statutes Last Updated July 22, 2011

Includes Enactments through the 2011 Extraordinary Session
This page was produced on 11/10/2011 at 3:07:09 PM

KRS Chapter 075.00

- **.010 Establishment of fire protection or volunteer fire department district.**
- **.015 Formation of fire protection subdistrict -- Tax levy -- Expenditure of tax revenues -- Separation of subdistrict amounts in tax billing and in accounting.**
- **.020 Annexation or reduction of territory -- Expansion into territory served by fire department -- Assumption by city of debt -- Merger of districts.**
- **.025 Repealed, 1984.**
- **.030 Repealed, 1966.**
- **.031 Trustees, elections, appointments, terms -- Continued service upon establishment of consolidated local government -- Vacancies -- Removal -- Elections for part of trustees -- Officers.**
- **.040 Power to operate fire department and emergency ambulance service -- Activities of district -- Levy, assessment, and collection of tax to defray expenses -- Supplemental emergency medical services.**

- **.042 Expenditure of unrefunded ad valorem taxes by fire district board of trustees permitted.**
- **.050 Contracts by fire units or districts, cities and counties, for fire protection.**
- **.060 Status and compensation of firefighters serving outside limits of district or municipality.**
- **.070 No liability for damages when serving outside limits of district or municipality -- Fire departments as agents of Commonwealth.**
- **.080 Erection of fire hydrants.**
- **.100 Definitions for KRS 75.100 to 75.260.**
- **.110 Appointment of special firefighters -- Rules -- Powers.**
- **.120 Board to control fire department and property -- Appointment of fire chief and members of fire department -- Compensation -- Volunteer firemen -- Reduction of personnel.**
- **.130 Discipline of members and employees.**
- **.140 Appeals of disciplinary actions.**
- **.150 Political activities of members.**
- **.160 Attendance of chief at board meetings -- Definition of chief -- Members as peace officers.**
- **.170 Oath and bond of members.**
- **.180 Duties and powers of chief and members -- Reimbursement of private owners for water used.**
- **.190 Repealed, 1970.**
- **.200 Repealed, 1970.**

- **.210 Repealed, 1970.**
- **.220 Repealed, 1970.**
- **.230 Repealed, 1970.**
- **.240 Board minute book -- Contents -- Where kept -- Inspection.**
- **.250 Board may employ counsel -- Duties -- Compensation -- Duties of county attorney.**
- **.255 Audits and financial reports.**
- **.260 Compensation of board members -- Time and place of board meetings.**
- **.270 Repealed, 1962.**

Certified Volunteer Fire Departments

- **.400 Definitions for KRS 75.400 to 75.460.**
- **.410 Program for recognition and certification of volunteer fire department -- Authority for administrative regulations.**
- **.420 Application for recognition of fire department -- Boundaries.**
- **.430 Annual report -- Financial statement -- Audit. (Effective January 1, 2011)**
- **.440 Funds available to recognized and certified fire department -- Rights and responsibilities of department -- Fire chief.** **…**

APPENDIX 14
District Merger Difficulties

Louisville Courier - Journal

Fire Districts | Merger remains hot-button issue for suburban fire districts

Suburban departments squeezed by falling revenue, rising costs, but merger is still a hot-button issue

Aug 5, 2012

Jefferson County's suburban fire districts — responsible for protecting nearly 187,000 homes and businesses — are tumbling toward a financial crisis that could force sweeping changes in the way the county fights fires.

Handcuffed by sagging property tax revenue, rising wage and pension costs, and their own questionable spending decisions, the county's 17 suburban fire departments are making cuts that their fire chiefs warn are undercutting their ability to fight fires — reducing staff, freezing salaries, selling equipment and closing firehouses.

Suburban chiefs acknowledge they sometimes have fewer firefighters on duty than they need — the national safety standard recommends four firefighters per crew — but say they can't afford more full-time staff.

"Every day we're riding below the standard," said Pleasure Ridge Park Fire Chief Vincent Smith, who staffs with three firefighters per unit. "I don't like it, but that's the best we can afford to do."

Though they maintain that public safety hasn't been jeopardized so far, some fire officials warn that without a major revamping of the system, some districts will soon have to dangerously reduce services — or risk slipping into bankruptcy.

To residents, the gradual slide raises the risk of longer response times and the threat of severe damage or death from a fire.

And it also increases the likelihood that fire protection could become dangerously uneven throughout the county — with fire service varying even more than it already does, depending upon each district's financial health and operational policy.

"People are going to have to understand that the future does look bleak," said Okolona Fire Chief Rich Carlson.

A months-long Courier-Journal examination found several factors conspiring to undercut fire service in Jefferson County:

• Suburban departments increasingly have moved away from using volunteers, opting instead for career firefighters who are more dependable but also more expensive, earning higher wages and greatly raising pension costs. Since 2000, suburban districts have hired 84 percent more career firefighters, increasing from 226 to 415, and reduced their volunteer numbers 29 percent, from 637 to 450.

• The county's suburban districts form a patchwork quilt of coverage, where politics and protecting turf can conflict with best practices, resulting in deployment policies that sometimes prevent the closest station from responding to an emergency. Firefighters from Louisville Fire & Rescue, for example, aren't automatically sent to fires in suburban areas even if they have the closest crews.

• That same patchwork can get in the way of economies of scale. Adjoining districts may buy the same expensive fire apparatus, costing hundreds of thousands of dollars, even though their call volume indicates they could probably get by with fewer trucks and engines if they operated jointly. The same applies to smaller purchases such as gear and supplies, which can cost less if bought in greater volume.

• And for years, when districts were flush with rising property tax revenues, many spent money on equipment or new facilities without setting cash aside in case of future declines. Some of those expenditures, chiefs now acknowledge in hindsight, were unnecessary.

Middletown, for example, paid $500,000 in 1997 for a 102-foot aerial ladder truck, even though few buildings in the district are tall enough to require that size ladder. After using that truck just twice in 2009, the department sold it for $150,000 and made arrangements to use aerial trucks from neighboring Jeffersontown and McMahan.

And in 1998, when volunteers were aplenty, Middletown built a 30,000-square-foot headquarters on Urton Lane. Since then, Middletown has lost volunteer staff, and Chief Jeffrey Riddle said if the station were built today, he'd make it half as big.

The mounting financial worries and concerns about maintaining service have fueled talks about merging departments, but no action has been taken — largely because of opposition from suburban chiefs and fire district trustees fearful about losing their autonomy.

The few departments that have merged in recent years, such as Lake Dreamland and Dixie Suburban, consolidated to ease financial stress and improve service. But other districts still resist, their leaders arguing that there's no proof that taxpayers would pay less or that service would improve.

"Anyone who thinks you're going into a fire department merger to save money is wrong," said Okolona's Carlson.

But given the state General Assembly's reluctance to consider any tax increases, some suburban firefighters and residents say mergers may be inevitable.

"We're going to be one big fire department before it's all over," said Jack Monohan, a past member of the St. Matthews Fire District board of trustees. "We're behind the eight ball now. We've got to make the public aware of that."

Capped and frustrated

Surburban fire districts depend almost entirely on property taxes for their revenue.

Since 1944, state law has allowed districts to collect a tax of 10 cents per $100 worth of assessed property value on homes and businesses within their boundaries. All the districts have

been charging that maximum rate since 2005, and they can't go higher unless the legislature changes the law.

That wasn't much of an issue decades ago, when departments were largely staffed by volunteers and a booming housing and development market provided steady, and often increasing, property tax revenues. But the market crash and rising costs have made finances unsteady.

According to department budgets filed with the county, suburban fire districts' total revenue has fallen more than 3 percent, to $55.5 million, since 2009 — even as expenditures have risen more than 4 percent, to $58.1 million.

Fire departments have lobbied Frankfort to raise the taxing cap, but no proposal has made it past the committee level.

Meanwhile, some departments now must draw on reserve funds to balance their budgets, while others are making cuts.

PRP Chief Smith said he expects that in the fiscal year that started July 1, his district will have to begin drawing on a reserve fund it started building about six years ago in anticipation of leaner times. The move is necessary now after property tax values in his district dropped by more than $100 million between 2009 and 2011.

"We just buckled down and didn't do any unnecessary spending," Smith said. "But we didn't expect it to be this bad. If we didn't have the reserve, we'd have to borrow money or make cutbacks."

Middletown's Riddle said he and his board have done a 10-year projection of their budget, figuring no increase in revenue for the next four years and modest increases after that. Based on those projections, Riddle said, the department in five years will have to cut expenses to make budget and won't be able to put any money in reserves.

Part of the problem, he said, stems from estimates that the department will have to contribute nearly 20 percent more than the 35 percent of its payroll budget it contributes currently to the retirement system.

Indeed, one of the biggest drivers of the cost increases among the suburban districts has been a 23 percent rise in pension obligations since 2009. That's due in part to limited investment returns, benefit increases and unfunded cost-of-living increases, according to fund officials.

"If these projections hold true, every time someone retires you will look at who do you replace," Riddle said.

Another issue is the need to replace aging equipment — at ever-increasing costs.

For example, in 2009, St. Matthews Fire paid $838,158 for a new truck for its station on Sears Avenue, replacing a similar truck that had been purchased new in 1986 for $259,170.

Carlson and other chiefs are also keeping a close watch on staffing and overtime.

In October 2010, Okolona shut down its station on Orchard Avenue in the Edgewood neighborhood after its board of trustees decided it could save $24,000 annually by moving staff to a more populated area, reducing utility and operating costs.

Lyndon officials have closed the district's Westport Road station roughly 10 times in the past two years rather than pay overtime, said Chief Russ Rakestraw. On another 10 occasions, staffing was reduced to two people to make medical runs only, said Rakestraw. Volunteers were used to keep the station open seven other times.

"Money is as tight as it's ever been," said Carlson, whose Okolona district's taxable value is more than $12 million below 2009 levels. "We're stretching things. And sooner or later, the rubber band is going to snap."

Fees unpopular

Other districts have looked at charging fees to supplement their tax revenue and cover expenses.

Lyndon now assesses a charge for house fires, car wrecks and other emergencies. Since the charges started in September, the department has brought in $58,000, with another $35,000 billed but not collected.

Rich Bliven, a captain of the department, said the billing has prompted complaints from residents and business owners who say they already pay for fire services with their taxes.

“It hasn’t been well-received,” Bliven said. “It’s really bad for us, but the next step for us is laying people off.”

Jim Crush, who runs JC Repair Co., said he was assessed a $100 fee after his business was inspected by the fire department in March for code violations. He said he paid the bill: “I’m afraid not to, because what are they going to find next time?”

Other districts bill for responding to hazardous materials incidents or for runs to auto accidents.

But the fees have raised little revenue. McMahan officials say in fiscal year 2010-11 they collected about $5,300 from responding to auto accidents and vehicle fires. St. Matthews collected about $5,600 from auto accidents that same year.

Medical runs

Adding to the financial strain, fire chiefs say, are medical runs their departments make without reimbursement from Metro EMS.

Nearly half of the 21,474 service calls the 17 suburban fire districts made last year — covering 310 square miles of Jefferson County — were medical calls. Firefighters, most of whom are trained as emergency medical technicians, supplement EMS and often are first on the scene.

Some fire chiefs contend those runs strain their budgets when their responsibility is to deal with fires. In McMahan, for example, firefighters responded to 737 medical runs in 2011, compared with 352 fire calls.

Chiefs complain that costs Metro EMS recovers through patient insurance don't compensate fire districts for their efforts. In response, some fire districts now only go to the most serious medical calls, such as those that are initially reported as cardiac arrest or stroke.

Metro EMS officials say they seek help from local fire districts to ensure that people get the closest medical care available. Firefighters can provide treatment until an ambulance arrives.

In return for the help, Metro EMS provides medical supplies and training to fire districts, which Dr. Neal Richmond, who runs Metro EMS, says is a fair exchange.

And Richmond argues that fire departments nationwide have taken on more medical runs because better sprinkler systems and fire warning systems such as smoke detectors have decreased the number of house fires.

"It's not fair to the members of those communities, when the resources are sometimes within blocks, that they (fire districts) should withhold help because they aren't being reimbursed," Richmond said. "The taxpayers do pay for this."

Cost per call varies

The truth is, even factoring in medical runs, the amount that fire districts budget in relation to their service calls varies widely.

The Courier-Journal's analysis shows that Jefferson County's 19 fire districts, including Louisville and Shively, had a combined budget last year of more than $101 million (excluding reserves) and were dispatched to more than 61,000 fire and EMS calls — for an average cost of roughly $1,660 per call.

While Louisville Fire has the largest budget, $51 million last year, it also responded to 34,000 calls — about $1,500 per call. That excludes calls Louisville responded to outside its service area, which could not be pulled from the MetroSafe dispatch system.

While six districts operate at a lower cost per call than Louisville Fire, most are higher.

Seven districts (Middletown, Eastwood, Worthington, Anchorage, PRP, St. Matthews and Fern Creek) averaged more than $2,000 per call they were dispatched on, according to the Courier-Journal analysis.

Eastwood, in far eastern Jefferson County, has one of the largest districts and the highest cost per run. In 2011, the district made 358 fire and medical runs in the district and responded to another 138 calls in other districts, bringing its average cost to $4,251 per call.

Fewer volunteers

Another part of that rising financial cost, fire chiefs contend, is the move away from volunteers.

Districts such as Harrods Creek relied for decades on dedicated residents who gave their time to respond to fires no matter what time of day or night. But as Harrods Creek grew to more than 4,800 homes and businesses, volunteers alone couldn't meet the district's fire needs.

What started as a fire department staffed by 25 volunteers now relies on 22 full-time firefighters and eight volunteers. Wages and salaries now make up 72 percent of the $3.1 million budget, said Chief Kevin Tyler.

"There was a time when volunteers could do the job in Jefferson County," Tyler said. "But Jefferson County is not a rural place anymore."

A few districts continue to operate a mostly volunteer operation.

Highview Fire Chief Dave Goldsmith said he wouldn't be able to run his district without the 64 volunteers on his roster. He staffs one station full time with career personnel, but having volunteers allows him to keep two stations functional.

“If we lost our volunteers, there’s no way we could do it,” he said.

What lies ahead

So, what can be done about suburban fire districts’ continuing financial struggles and rising costs?

While some fire chiefs and fire department trustees support the idea of merging the districts into one or several larger departments, others adamantly argue mergers would not save money.

Questions about fire services were part of the discussion for the Merger 2.0 task force that Mayor Greg Fischer convened last year to improve metro government. The committee reviewing fire services dismissed mergers and instead gave the mayor a list of suggestions aimed at improving the sharing of technology and information among departments.

Still, as a result of that review, a smaller group of chiefs has been meeting to consider what mergers could look like. No official proposal has been unveiled, and some say it will take more prodding from Fischer and even bigger financial problems to move the discussion.

But many fire chiefs, including Harrods Creek’s Tyler, believe mergers will occur.“We understand we have a problem,” Tyler said. “And we understand we might have to merge some districts. Twenty-five years from now, we can’t have this same discussion. It’s not sustainable.”

APPENDIX 15
NFPA Apparatus Standard Update

PRODUCT NEWS

with Robert Avsec

10 NFPA fire truck updates you need to know

Every five years NFPA revises 1901; here's a breakdown of the biggest changes for 2016

Mar 16, 2016

By Robert Avsec

Reading any NFPA standard can be a laborious process at best. But they are some of the most fundamentally important documents at our disposal in the fire service.

The work that members of any NFPA technical committee put into developing and revising the standards, which are revised on a five-year schedule, is truly a labor of love.

NFPA 1901: Standard for Automotive Fire Apparatus is one of our more important governing documents because it addresses the one thing that every fire department has.

RELATED ARTICLES

- Understanding NFPA's new ambulance rule
- Just who sets those NFPA PPE standards?

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After poring over the changes contained in the 2016 edition of NFPA 1901, I've compiled what struck me as some of the more influential changes.

Chapter 4: General requirements
Vehicle data recorders that can capture data to use in promoting safe driving and riding practices has been added as a requirement. Also, vehicles must now have a calculated

center of gravity that is no greater than 80 percent of the vehicle's height, as determined through tilt-table testing, or it must have a vehicle stability system (4.11 and 4.13).

The contractor shall also deliver with the fire apparatus the following documentation for the entire apparatus and each major operating system or major component of the apparatus (4.20.2.3).

And it's a long list for sure, 20 items in total, that ensures that the firefighters who use the apparatus and the mechanics who service it will have the practical and technical information that they need.

The Fire Apparatus Manufacturers' Association recently published its "Fire Apparatus Safety Guide." This guide provides safety procedures essential to the safe apparatus operation. It is inexpensive and sized to be carried in any apparatus, and it is item 20 in this document subsection.

As NFPA 1901 is all about apparatus safety, the guide was written for anyone driving or using fire apparatus and should be provided with every apparatus. The guide includes further information on each of the hazards identified by the FAMA safety signs requirements that were added to both NFPA 1901 and 1906. This guide can help operators to more fully understand the risks pointed out by the safety signs posted at various points on apparatus.

A new statement of exceptions requires the manufacturer to deliver a certification that the apparatus meets estimated in-service weight requirements and its ability to meet stability requirements. It must also link the maximum stop speed to the GVWR and extinguishing agent tank capacity or the tire manufacturer's ratings.

In lieu of such a certificate, the manufacturer must provide a statement that describes specifically what is not fully compliant and identifies who is responsible for achieving compliance (4.21).

Chapter 12: Chassis and vehicle components
New requirements were added for the operation and performance of diesel particulate filters installed on fire apparatus (12.2.6.7).

Chapter 14: Driving and crew areas
There are new requirements for the minimum length of seat belts along with instructions on how to properly measure them. The standard now requires a warning device that

indicates when an occupant in a designated riding position is not wearing a seat belt. Seat belts may now be orange in addition to red (14.1.3).

All crew cabs on apparatus with a GVWR over 26,000 pounds (11,800 kg) must protect occupant during a crash. The revised document also says that occupants should not wear helmets while the vehicle is in motion due to the adverse impact the helmet has on the occupant restraint system. The standard also requires proper helmet storage during vehicle movement (14.1.7.4).

Chapter 15: Body, compartments, and equipment mounting
The revised standard includes more specific requirements for the use of retro-reflective striping on apparatus, particularly for the rear of the vehicle. That rear striping is now required to be in a chevron pattern sloping downward from the vehicle's centerline at a 45-degree angle (15.9.3.2).

Chapter 16: Fire pumps and associated equipment
The chapter on industrial supply pumps rated over 3,000 gpm (12,000 L/min) was put in Chapter 16 along with fire pumps rated at 3,000 gpm or less. The differences in the requirements based on rated capacity were spelled out in the revised fire pump chapter.

A requirement was added for testing the accuracy of the gauges and flow meters during the pump-certification testing (16.14.3.2).

Chapter 20: Foam-proportioning systems
Foam systems must now be type tested for accuracy and certified by the system manufacturer. After installation, those systems must be tested and certified for proper operations by the final installer (20.11).

Chapter 22: Line voltage electrical systems
The material in this chapter has been reorganized and clarifications added. Changes to the chapter include: the protective ground from a shoreline inlet must be bonded to the vehicle frame; the neutral conductor must be switched through the transfer switch if there are multiple power sources; establishment of a minimum wire size for cords on permanently mounted reels; and a requirement that fixed scene lighting devices be tested and listed (22.7).

Chapter 24: Air systems
The standard now contains requirements for those who train fire department personnel on those air systems. A high-temperature alarm is required in the compressor

compartment along with labels cautioning operators not to obstruct the airflow. Additionally, there are three other changes.

- Compressors are required to be equipped with an air-quality monitoring system.
- If the compressor is driven by an electric motor, a shoreline connection to the electric motor is required.
- High-pressure air hose and couplings must have a pressure rating equal to or greater than the highest pressure expected to be encountered, with a 4-to-1 safety factor.

The requirements for the testing and certification of breathing air fill stations also have two significant changes: system testing must now be specific to the specific breathing air system, and there is a new section for testing utility air systems.

Chapter 26: Trailers
This is a new chapter with requirements for trailers used to transport equipment or other vehicles under emergency response conditions. Changes were made throughout the document where necessary to address the requirements for the tow vehicle.

Chapter 28: Ultra-high pressure pumps and associated equipment
The new chapter on ultra-high pressure fire pumps has been added because of the increased use of these fire pumps on fire apparatus.

The chapter's requirements give guidance for manufacturers and purchasers of UHP pumps. These fire pumps have a rated discharge pressure of 1,100 psi (7,600 kPa) or greater.

About the author

Battalion Chief Robert Avsec (Ret.) served with the Chesterfield (Va.) Fire & EMS Department for 26 years. He was an active instructor for fire, EMS, and hazardous materials courses at the local, state, and federal levels, which included more than 10 years with the National Fire Academy. Chief Avsec earned his bachelor of science degree from the University of Cincinnati and his master of science degree in executive fire service leadership from Grand Canyon University. He is a 2001 graduate of the National Fire Academy's Executive Fire Officer Program. Since his retirement in 2007, he has continued to be a life-long learner working in both the private and public sectors.

APPENDIX 16
Aerial Ladders vs. Platform Trucks

Pros and Cons of Ladders vs. Platforms

04/15/2016

By Alan M. Petrillo

No matter what fire department you walk into in the United States, you'll find a preference for one type of aerial device over another-straight ladder over platform or vice versa.

Left: 1 E-ONE built this 100-foot rear-mount platform for the Sarasota (FL) Fire Department. (Photo courtesy of E-ONE.)

While there are advantages and disadvantages to both ladders and platforms, firefighters typically choose to use the type of aerial vehicle that matches up best with their department's circumstances, but also occasionally they choose a type of aerial based on department history with one type or another.

Decision Process

Chris Wade, director of aerial products at E-ONE, says E-ONE doesn't recommend one type of aerial over another for a fire department but tries to find the truck that works well for it. "We ask them what they want their truck to do for them," Wade says. "We also want to know if there are any predefined limits on the truck, like with overall length or height."

Jason Witmier, product manager of aerials at KME, says the decision of ladder vs. platform usually comes down to the customer's preference and the cost of the vehicle. "For many fire departments, if they can afford it and their area will support its size, they like the platform, especially because it gives them a better surface to work from for aerial operations like venting the roof and setting firefighters down on a roof," he says. "A platform gives more security for those types of operations."

Tim Smits, national sales manager for Pierce Manufacturing Inc., says that ladders are trending to be more popular right now than platforms. “One year ladders will skyrocket, and the next year it might be the complete opposite with platforms rising,” Smits observes. “Also, right now, tractor-drawn aerials (TDAs) are on a big rise, and we categorize them with ladders. But every year is different.”

Paul Christiansen, aerial sales manager for Ferrara Fire Apparatus, says Ferrara always goes with what fits the customer’s needs. “Some fire departments have always worked off of either a straight stick or a platform,” Christiansen points out, “and they feel uncomfortable with the other type of aerial.” He notes that platforms typically are thought of as both rescue and fire suppression vehicles, with stable platforms at the end of the ladders and typically large waterways. “But, ladders also have a rope rescue pulley option that’s controlled from the turntable,” he points out, “so you’re able to have a rescue function with a straight stick too. However, with a platform, you will get a higher water flow-up to 2,000 gallons per minute (gpm) from a rear-mount platform-while a straight stick will be in the 1,250- to 1,500-gpm range.”

2 KME built this 79-foot AerialCat ladder quint for the William Cameron Fire Co. in Lewisburg, Pennsylvania. (Photo courtesy of KME.)

Smits notes that fire departments should look at the building where the aerial will be housed. “They should check the length and height of the bay, the door height, and the floor structure to be sure it can support the weight of the aerial,” Smits says. “They also should look at the types of structures they have in the area and whether they need high water flow for commercial or industrial facilities or rescue capability for hospitals and nursing homes.”

Wade points out that while it's impossible to plan for every type of incident, it's important for a department to identify what the aerial is to do on a fire scene.
"With a platform, you can have it elevated for a long period of time and flow more water from it, which increases the envelope of firefighting and rescue for the department," Wade says. "But, there may be a lot of obstacles on the scene, so a straight ladder is better for threading its way through obstacles like trees where a platform would be too large to go."

Pros and Cons

Witmier says that KME sells more ladders than platforms, perhaps because of their maneuverability. "Ladders are typically more maneuverable than platforms," he notes. "You can stay with a single rear axle to reduce the gross vehicle weight rating (GVWR) or go with a higher GVWR and carry more equipment."
Smits notes that the advantages of ladders include less gross vehicle weight, greater water tank capacities, easier positioning around obstructions, greater maneuverability, shorter overall length, longer ladder lengths, shorter stabilizer stance, and less cost. Advantages of platforms, he says, are higher water flow capacities, dual monitors, higher payload capacities, a safer work space when elevated, a safer evacuation method for young and elderly persons, more rescue options at the tip, greater maneuverability with the platform, safer use of Stokes rescues, and lifting eyes at the bottom of the basket as elevated anchor points.

3 The Spring (MO) Fire Department chose Ferrara Fire Apparatus to build this 100-foot midmount platform that has a 99-foot horizontal reach at zero degrees, a 1,000-pound dry tip load, and a 500-pound wet tip load flowing 1,500 gpm. (Photo courtesy of Ferrara Fire Apparatus.)

Ladder disadvantages, according to Smits, include less payload and water flow capacities, the need for personnel to climb the ladder, no heat shield protection at the tip, limited rescue features

at the tip, no dual monitors, and the inability to move from window to window with firefighters on the tip.

Smits says that platform disadvantages are a bigger apparatus, greater GVWR, the platform hanging out in front or behind the apparatus, higher overall height, longer overall length, wider stabilizer stance, and higher cost.

"However, some departments find a type of aerial vehicle that fits them perfectly, and they stay with that type," he says. "For example, the Los Angeles (CA) Fire Department is all TDAs, which essentially are ladders, while the Orlando (FL) Fire Department is all platforms. The requirements in their communities drive what type of aerial vehicles they use."

Product Offerings

Ferrara makes platforms in midmount models of 75-, 85-, and 100-foot lengths and rear-mount platforms of 85 and 100 feet. Its ladders include 57- and 77-foot single-rear-axle models and 107- and 127-foot tandem-rear-axle ladders.

Pierce makes a 75-foot midmount platform and 85-foot and 100-foot rear-mount models. In ladders, it makes a 100-foot midmount and rear mounts in 55-, 65-, (both Skybooms), 75-, 100-, 105-, and 107-foot lengths.

4 Pierce Manufacturing Inc. built this PUC 105-foot rear-mount ladder for the Taylor (TX) Fire Department. (Photo courtesy of Pierce Manufacturing Inc.)

E-ONE makes platforms in 92- and 100-foot rear-mount models and a 95-foot midmount. In ladders it makes the 50-foot Teleboom and rear mounts of 75, 78, 100, 105, 110, and 137 feet along with a 100-foot TDA.

KME offers two rear-mount platforms (95- and 102-footers) and three midmounts (81-, 95-, and 100-footers). In ladders, KME makes midmounts of 75 and 100 feet, and its rear-mount ladders are made in 79-, 103-, 109-, and 123-foot lengths.

ALAN M. PETRILLO is a Tucson, Arizona-based journalist and is a member of the *Fire Apparatus & Emergency Equipment* editorial advisory board. He served 22 years with the Verdoy (NY) Fire Department, including in the position of chief.

APPENDIX 17
National Fire Academy

National Fire Academy courses, catalogs and schedules

- Training & Professional Development
- Fire Prevention & Public Education
- Operations Management & Safety
- Data Publications & Library
- Grants & Funding

Home / Training & Professional Development / National Fire Academy / **NFA Courses, Catalogs & Schedules**

Course cancellations

On-campus students: Due to the NFA's support for FEMA disaster surge training, we've had to cancel some of our upcoming course offerings. Review the list of cancelled courses

Off-campus students: If you have an upcoming course in an area impacted by Hurricanes Harvey or Irma, please contact your state fire training office to find out if your course is cancelled.

National Fire Academy (NFA) courses are delivered online, at our campus in Emmitsburg, Maryland, and off-campus throughout the nation in cooperation with state and local fire training organizations and local colleges and universities.

Our free courses target middle- and top-level fire officers, fire service instructors, technical professionals, and representatives from allied professions. Any person with substantial involvement in fire prevention and control, emergency medical services, or fire-related emergency management activities may apply for NFA courses.

Application period: CLOSED

The application period for our second semester (April 1, 2018 to Sept. 30, 2018) courses is open from Oct. 15 to Dec. 15, 2017. Here's how to apply for courses and get a Student Identification Number.

Courses and schedules

On-campus classroom courses: six- and 10-day | two-day

Specialized training courses and advanced management programs of national impact offered in a classroom setting at our Emmitsburg campus.

Off-campus classroom courses: six-day | two-day

The same courses taught in Emmitsburg but delivered in your state to provide you with the opportunity to attend NFA training closer to home.

NFA Online and online-mediated courses

Through NFA Online, you can receive career-enhancing, self-paced training at home.

State- and local partner-sponsored classroom courses

Locally-sponsored two- and six-day training courses that use NFA course content.

List of state courses approved by the NFA PDF 137 KB

State-developed courses assessed by NFA as the equivalent of our training in both quality and content and taught by local instructors.

Course evaluation and general feedback

Learn how we measure the long-term impact of our training courses and provide us with your general feedback.

APPENDIX 18
Response Time Reduction

Reducing Response Time

Now more than ever, fire departments are being held accountable for their response time performance and effectiveness. Can your fire department answer the following questions accurately?

1. How fast do your dispatchers answer and process emergency calls?
2. What safeguards or job aides are in place to help dispatchers send the most appropriate units?
3. How long does it take for firefighters to react and respond to an emergency incident?
4. Are apparatus properly equipped for an efficient and safe response?

Our industry constantly attempts to improve response time, but rarely do we look at all aspects of the equation. Technology can play an important role in improving response times.

Remember that total response time is made up of three distinct components:

1. Dispatch time: Time elapsed from when a call is received at the 9-1-1 center until units are notified.
2. Turnout time: Time elapsed from when units are notified until they are responding.
3. Travel time: Time elapsed from when units respond until they arrive on the incident scene.

Most fire departments have a habit of focusing solely on improving their travel time, because it's traditionally accepted that little can be done to improve the other two components. Firefighters falsely believe that improving response time is made easy by driving faster. This solution rarely has a positive impact; in fact, it can lead to disastrous outcomes.

But using technology as an alternative to improve response times can change all that. Let's take a close look at each of the three components that make up response time.

Dispatch Time

One of the most critical areas in which to decrease response times comes before firefighters ever realize there's an emergency. When dispatchers receive a call for an emergency, it's critical that they identify the nature of the incident and be able to dispatch the most appropriate resources. It isn't uncommon to see technical rescue and hazmat situations downplayed during initial dispatch because dispatchers aren't comfortable with the incident type.

Computer-aided dispatch (CAD) and response interrogation software can help dispatchers recognize those rare, high-risk incidents and send the correct resources the first time. Sending the correct type and amount of resources initially is an excellent example of using technology to be more effective.

Additional technological improvements at the dispatch center can further help improve our performance. Can you imagine a dispatcher who always speaks at the same rate, tone and volume? Today, that is possible with computer-generated voice technology. By establishing a pre-recorded audio database, fire departments can ensure the correct pronunciation of all street names in a response jurisdiction. Even the format of a radio dispatch can be customized based on the incident type, geographic location or other variables. Although the use of "robot voices" for dispatching may sound unappealing or unnatural, it eliminates common errors that can have disastrous consequences.

The use of this technology can shave seconds off the dispatch time. In addition to this tangible benefit, dispatchers are able to handle higher call volume since the radio dispatch becomes "hands free." The process is simple: A dispatcher processes a call for service, inputs all of the information required into a CAD system and simply presses a button to initiate the dispatch process. Since the "voice" is transmitting the information to emergency response units, the human dispatcher is free to gather additional information from the caller or to perform other duties.

Turnout Time

It's impossible to improve things that aren't measured and communicated. If we desire quick responses, we need to explore other ways to help our firefighters respond quicker. Taking an idea from the sports arena, why not place a clock on the wall to indicate how many seconds are

left until an established goal is met? Firefighters are more likely to improve performance when they can see, in real time, how they're doing.

In Photo 1, a simple countdown clock is tied to the fire station alerting system. Once an alert is received, the same circuit that opens doors and turns on lights initiates a countdown from 60 to 0 seconds on this clock. The clock should be mounted in a conspicuous location in the apparatus bay. When only 10 seconds remain, a chime is activated on the clock to remind companies to quickly place themselves "responding" with the dispatch center. We have installed these clocks in two stations as prototypes to see if results improve enough to expand the practice to the other five fire stations. Anecdotal evidence demonstrates that the visibility of this device causes positive behavioral change (i.e., quicker turnout time).

Travel Time

Installing computers in fire apparatus is more common today than it has ever been. Departments have a wide variety of options, from adapting laptops to fit in the cab to purchasing customized, in-vehicle computers. Regardless of the hardware chosen, departments should consider using these computers for apparatus status changes. Using mobile dispatch software, firefighters can be responsible for changing their statuses, thus making them accountable for their performance. This frees up the airwaves for additional information that companies may receive while responding.

Computers with touch-screens or easy-access buttons are the best for shaving seconds off of travel times. It will also be important for departments to closely examine the software that will be used to make sure it is "friendly" with a touch-screen environment. Some software programs use icons that are too small and detailed for any measure of accuracy on a touch-screen.

In-cab computers can also contain automatic vehicle location (AVL) devices to track fire department apparatus in real time using GPS. This can provide valuable information and allow dispatchers to notify units that are closest to a received call for an emergency, thus reducing travel times.

Embrace Change … But Use Caution

These technologies can all have a positive impact on improving total response time. Their cost

varies—from several hundred dollars for an electronic clock to hundreds of thousands of dollars for automated voice dispatching and mobile computers—but in the grand scheme of customer service, it may be well worth the investment for the improved outcome.

Note: These solutions for public safety problems should ONLY be implemented when they improve and simplify operations—not complicate them. Some equipment vendors have a poor understanding of the environment and culture of the fire service, leading them to think their solutions are more user-friendly than they really are. Be sure to explore what solutions other fire departments have implemented and the lessons they learned to avoid repeating mistakes. Today's economic conditions demand that we work smarter and are mindful of our budgetary footprint for complex projects. Ideally, your investment in technological solutions should demonstrate to your taxpayers that your department is working harder for their tax dollars.

The bottom line: Technological improvements for our business have only just begun. Embrace the change and look for ways to keep your fire department on the cutting edge of improvement.

JAKE RHOADES

Jake Rhoades, MS, EFO, CFO, CMO, CTO, MIFireE, is the fire chief for the Edmond (Okla.) Fire Department and a 21-year veteran of the fire service. Rhoades holds a master's degree in executive fire service leadership. He serves as an elected member on the board of directors for the IAFC Safety, Health and Survival Section and as a principle member of the NFPA technical committee for firefighter qualifications. He is an adjunct instructor for Columbia Southern University.

TOM JENKINS

Tom Jenkins, MS, EFO, CFO, CMO, MIFireE, is the fire chief of the Rogers (Ark.) Fire Department and a 14-year member of the fire service. He has a bachelor's degree in fire protection and safety engineering from Oklahoma State University and a master's degree in public administration from the University of Oklahoma. He also serves as an adjunct professor for Oklahoma State University and Northwest Arkansas Community College.

APPENDIX 19
ISO Rates and Insurance Reduction

Chattanoogan.com

Mowbray Volunteer Fire Department Gets New ISO Rating

Monday, May 23, 2016

Mowbray Volunteer Fire Department was notified that its fire protection rating from the Insurance Services Office (ISO), a national insurance industry risk rating and assessment service inspection , will improve Aug. 1 to a Class 4. This change not only means the department's level of fire protection service has improved, according to ISO analysis, but it could also earn lower property insurance rates for home and business owners on Mowbray Mountain. With the update, the department's rating drops from its previous Class 9 rating.

ISO rates fire departments on a scale of 1 to 10. An ISO Class rating is considered the least effective fire defense class 10 while an ISO class 1 rating is the most effective fire defensive system from an insurance analysis perspective. ISO ratings play an important role in the underwriting process at insurance companies.

"The news of Mowbray Volunteer Fire Department's lower rating is exciting for the county, as well as all the fire personnel at the fire station, said Mowbray Fire Chief, Chris Weddington. This was not an overnight task, as Mowbray VFD personnel had to work hard to keep up their standards, changes with operating procedures and update information on all areas of fire protection in their district".

ISO officials look at the 9-1-1 system, the water system as relates to hydrants and many other factors involved in providing quality fire and rescue service. Countless hours went into getting ready for the inspection, said Weddington.

Mowbray Volunteer Fire Department covers 33 square-miles and responds to 20 medical/fire calls a month. Last ISO inspection was in 1981

NewsChannel 3

Fire Rating$: How your fire department rates could impact what you pay for insurance

Posted 11:00 pm, May 23, 2016, by Todd Corillo, Updated at 11:01pm, May 23, 2016
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HAMPTON, Va. - The Hampton Division of Fire and Rescue has a lot to be proud of these days thanks a new rating from the Insurance Services Office.

As of April 1, Hampton's ISO rating of "1" is officially in effect. The Class 1 rating is the highest score a fire protection community can receive.

The Insurance Services Office evaluates fire protection efforts throughout the country. They rate agencies on a scale of 1–10, with "1" being the best.

Battalion Chief Anthony Chittum says the department was last evaluated in 1986 when they received a "4" and a lot went into the improved ranking.

"It's based on a number of factors, water supply is one of them, the water system. The equipment that you see behind us here is another part. Since 1986 technology has changed, so has communications, all of these are factors based in that," Chittum told NewsChannel 3's Todd Corillo.

"Our pumps for example are 1500 gallon per minute pumps. We staff our engines with 3 people, our ladder trucks with 4. Our nozzles on this particular piece of equipment are capable of 2000 gallons per minute. Our alerting system. Everything from our radio communications the 800 megahertz system we use to the alert system and the redundancy behind that all play a factor," he added.

Hampton joined Newport News in being just one of a handful of fire departments in Virginia to receive a "1" rating.

"Less than 200 departments in the country have an ISO rating of "1," when you take that into the number of 48,000 fire departments across the country, it’s a pretty substantial, elite group," Chittum commented.

The Portsmouth Fire Department received a "2" ranking from ISO in May of 2015.

Chesapeake and Norfolk both received a "3" when they completed the process in 2015.

Suffolk was last evaluated in 1996 when they received a split 4/9 and they are gearing up for a new evaluation soon.

Virginia Beach just completed a new evaluation at the end of 2015. The new rating went into effect May 1 and divides the city in half. A "2" was assigned for property within 5 miles of a fire station and 1,000 feet from a fire hydrant, while a "5" was given to those properties within the 5 miles of a fire station but without hydrants. You can read more about the Virginia Beach evaluation process below.

A better rating can lead to insurance benefits too.

"The ISO rating helps out businesses and our homeowners. It has the potential to decrease the liability in their homeowner or business insurance just do to the ability that the city has to offer them services," Chittum explained.

Jason Armogida is the Managing Agent of 360 Insurance Services in Virginia Beach. He says the impact can depend on your carrier and there are many factors that go into premiums, but a good fire rating certainly helps.

"It can make a big impact on insurance rates. Insurance rates can be much higher if you’re further away from a fire hydrant, further away from a fire department. So it’s all about how quickly services can put the fire out in your home among many other rating factors," he stated.

The evaluation from the Insurance Services Office Public Protection Classification program can be complex.

NewsChannel 3 asked Robert Andrews, Vice President of Community Hazard Mitigation at ISO to break it down. Here's what he sent us:

Using the ISO Fire Suppression Rating Schedule (FSRS), ISO's Public Protection Classification (PPC) program helps insurance companies measure and evaluate the major elements of a community's fire suppression system. The PPC program evaluates and reinforces the importance of key areas of fire protection:

- Emergency communications (10%) — 911 telephone systems, adequacy of telephone lines, operator supervision and staffing, and the dispatching hardware and software systems
- Fire department (50%) — adequacy of equipment, sufficient staffing, evaluation of training, existence of automatic aid, and geographic distribution of fire companies
- Water supply (40%)— condition and maintenance of hydrants, existence of alternative sources, and a careful evaluation of the amount of available water — in volume and pressure — compared with the amount needed to suppress fires

ISO analyzes this information and assigns an advisory number from 1 to 10. Class 1 generally represents exemplary fire protection and Class 10 indicates that the community's fire suppression program does not meet ISO's minimum criteria. PPC Classes are assigned to communities based on the protection area of a fire department.

The minimum criteria include:

Organization
The community must have a fire department organized permanently under applicable state or local laws. The organization must include one person responsible for the operation of the department, usually with the title of "chief."

The fire department must serve an area with definite boundaries. If a community does not have a fire department operated solely by or for the governing body of that community, the fire department providing such service must do so under legal contract or resolution. When a fire department's service area involves more than one community, each of the communities served should have a contract.

Membership
The department must have sufficient membership to assure the response of at least four members to structure fires. The chief may be one of the responding members.

Training
The fire department must conduct training for active members, at least two hours every two months.

Alarm notification
Alarm facilities and arrangements must be such that there is no delay in the receipt of alarms and the dispatch of firefighters and apparatus.

Apparatus
The department must have at least one piece of apparatus meeting the general criteria of National Fire Protection Association (NFPA) Standard 1901, Automotive Fire Apparatus.

Housing
The department must house apparatus to provide protection from the weather.

If the community does not meet these minimum criteria, ISO will assign the community a Class 10.

Properties that are over 5 road miles from a recognized fire station would also be considered Class 10.

The PPC program recognizes the efforts of communities to provide fire protection services for citizens and property owners. A community's investment in fire mitigation is a proven and reliable predicator of future fire losses. Therefore, many insurance companies offer reduced premiums in communities with better fire protection as measured under the Fire Suppression Rating Schedule. By offering economic benefits for communities that invest in firefighting services, the program provides a real incentive for improving and maintaining public fire protection.

The City of Virginia Beach underwent the ISO evaluation process at the end of 2015. They provided this information about what went into their process and what it means for citizens.

Understanding the PPC Rating:

In order to establish a rating ISO staff is required to visit the community to observe and evaluate features of the fire protection systems. The ratings range from 10 to 1, with 1 representing the most effective fire protection. Using the Fire Suppression Rating Schedule (FSRS), ISO objectively evaluates four major areas:

- **Emergency communications systems**
  A review of the emergency communications systems accounts for **10 points** of the total classification. The review focuses on the community's facilities and support for handling and dispatching alarms for structure fires.

- **Fire department**
  A review of the fire department accounts for **50 points** of the total classification. ISO focuses on a community's fire suppression capabilities. We measure suppression capabilities based on the fire department's first-alarm response and initial attack to minimize potential loss. Here, ISO reviews such items as engine companies, ladder or service companies, deployment of fire companies, equipment carried on apparatus, pumping capacity, reserve apparatus, company personnel, and training.

- **Water supply**
  A review of the water supply system accounts for **40 points** of the total classification. ISO evaluates the community's water supply system to determine the adequacy for fire suppression purposes. We also consider hydrant size, type, and installation, as well as the frequency and completeness of hydrant inspection and flow-testing programs.

- **Community risk reduction**
  A review of the community's risk reduction efforts is conducted and credit can be earned in the Community Risk Reduction section, which allows for extra credit of up to **5.5**

points for a potential total of 105.5. This section takes into account fire prevention code adoption and enforcement, public fire safety education, and fire investigation.

(Source: https://www.isomitigation.com)

History of ISO in Virginia Beach:

The Virginia Beach Fire Department was rated in 1983 by the Insurance Services Office and received a rating of 4/9 since that date the City has been statistically rated meaning it received a multiplier based on the rating of the other rated communities in the Commonwealth. Many Insurance agencies continued to simply use the 4/9 rating. The split rating represents the level of fire protection in two distinct service areas. The first number is the rating for property in an area that is located within 5 road miles of a fire station and 1000ft of a credible water supply. The second number represents the rating for property within 5 road miles of a fire station but greater than 1000ft from a credible water supply. In most cases a community that has an area without hydrants is rated with an X or Y split rating meaning they receive insurances rates similar to a community with an 8 or 10 rating. The X/Y system simply acknowledges the effectiveness of the response agency while recognizing increased loss potential due to the lack of available water. If we had shown no improvement from our previous rating under this new FSRS the City of Virginia Beach would have been classified as a 4/X.

In all cases an address that is greater than five road miles from a fire station is considered a class 10 PPC. The ISO has always followed this proximity rule therefore no matter the score the City receives if you are more than 5 miles from a fire station you are rated a PPC 10.

Where we are today:

At the end of 2015 the Virginia Beach Fire Department requested an evaluation from the ISO. However, the new rating does not go into effect until May 1, 2016 to allow time for the Fire department to ensure the report is accurate and in alignment with the information we provided to the evaluator. There were some errors identified and we are currently working with the ISO to make corrections. These corrections may or may not equate to enough points to change the overall rating.

Good News:

The evaluator found that our efforts to improve water carrying capacity in our non-hydranted area were excellent. For these reason he was able to rate the non-hydranted area above the normal X/Y system that is currently used in communities without hydrants.

For the new PPC the City is divided in half. The first PPC applies to property in an area with fire hydrants and the second PPC applies to property without fire hydrants.

- We received a Class 2 PPC for all property within 5 miles of a fire station and 1000ft from a fire hydrant.
- We received a Class 5 PPC for all property within 5 miles of a fire station in the non-hydrant area.

- Property outside of the 5 mile protection area (greater than 5 road miles from a fire station) is a PPC 10.

Community Impact:

With the understanding that all insurance providers are different and some weight PPC ratings heavier than others, we can only speculate about the insurance savings our citizens and business owners will receive. Based on research done by other communities after changes to their PPC ratings we can make the following statements.

- The improvement to a PPC 2 represents about $50-100 in the pockets of residents/business owners in the area formerly rated a PPC 4.
- PPC 5 represents approximately $200-500 in the pockets of residents in the south who live within 5 miles of a fire station.
- This of course is dependent on the value of your property and the insurance carriers reliance on ISO PPC ratings. In general communities who go from a 4 to a 2 report 6-8% savings on insurance.
- Class 1 and 2 departments are viewed generally the same in the insurance industry.

We feel this demonstrates a significant return on investment for the apparatus expenditures the county. The Fire Department has made a commitment to provide a high level of fire protection with limited resources and stations in the southern part of the city. The ISO evaluator remarked that it is rare for an organization to demonstrate the ability to effectively move water and maintain fire flow in an area without supplied fire hydrants.

Summary:

The PPC plays a vital role in calculating and underwriting insurance premiums for residents, property owners, and businesses located in the City of Virginia Beach. Most insurance companies use PPC information as an integral part of deciding what businesses to underwrite, what types of coverage to offer, and overall premium costs.

Only 2.7% of fire departments in the Nation are rated a Class 2 or above (less than 0.5% of those are rated a PPC 1). This level of achievement is only possible through our commitment to continuous improvement in fire response and community risk reduction coupled with strong collaborative relationships with the City's Water Management Department and the Emergency Communications & Citizen Services Center. The better the class rating a city achieves, the better the outcome for homeowners and business owners who are paying insurance premiums. The information gathered by the ISO provides us with valuable insight into the risk of fire loss within the City of Virginia Beach. Much like the CFAI Accreditation process the department can use this feedback to benchmark our performance, measure program effectiveness, and plan for future improvements.

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