

# 2003 RURAL OHIO FIRE DEPARTMENT SURVEY

*Ohio Department of Natural Resources  
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## EXECUTIVE SUMMARY

In 2003, the Ohio Department of Natural Resources, Division of Forestry, distributed a mail survey to over 1,000 of Ohio's rural fire departments. The data from the 442 fire departments that responded offer insight into the needs and capabilities of rural Ohio fire departments. Statewide and regional analyses of these data and a comparison of the survey results alongside the findings of two past Division of Forestry rural fire department studies (from 1984 and 1994) led to several important conclusions. Some of these key findings are listed below.

### Statewide Findings

❖ ***Volunteer rural fire departments operate with fewer resources over a greater area than do partially paid or fully paid rural fire departments.***

When considered from both a statewide and regional perspective, volunteer fire departments operate on tighter budgets with fewer firefighters and cover more square miles with older fire vehicles than do their paid counterparts.

❖ ***Volunteer fire departments, on average, rated wildland fire as being one of the top three types of emergency situations that impact them.***

Along with structure fires and medical/EMS emergencies, wildland fire was ranked among the top emergency responses that impact rural Ohio fire departments. All three types of rural Ohio fire departments (e.g., volunteer, partially paid, and paid) rated wildland fire as having a greater impact on their departments than search and rescue operations and hazardous materials.

❖ ***Statewide, rural Ohio fire departments only have enough wildland fire protective gear to outfit approximately 20% of their members.***

Despite reporting that wildland fire has a greater impact than search and rescue operations and hazardous materials on their organizations, statewide, rural Ohio fire departments have only enough wildland fire protective gear to outfit fewer than 20% of their firefighters.

❖ ***The majority of rural Ohio's fire departments support including wildland firefighting courses in advanced firefighter certification requirements.***

Statewide, among all volunteer, partially paid and fully paid rural fire departments, there is very little departmental participation in the National Wildfire Coordinating Group (NWCG) wildland firefighter "red card" training. However, well over half of all fire departments, regardless of type, support including these courses in Ohio's advanced firefighter certification requirements.

❖ ***Basic wildland firefighting ranks high on the list of rural Ohio fire department training needs.***

Out of a list of 18 types of training, basic wildland firefighting ranked fifth in terms of the training most needed by both volunteer and paid rural fire departments, and ninth for partially volunteer/partially paid departments. All

three groups ranked basic wildland firefighting training as being a greater need than hazardous material, first aid/first responder and fire prevention training.

❖ ***Wildland fire protective gear is among the leading equipment needs of rural Ohio fire departments.***

Rural Ohio volunteer fire departments listed wildland fire protective gear as being their fifth priority, in terms of equipment needs, following only rescue and communications equipment, bunker gear and Self Contained Breathing Apparatuses. All three types of fire departments (volunteer, partially volunteer/partially paid, and paid) ranked wildland fire protective gear as being a greater need than, among other things, hoses and nozzles, brush trucks, portable pumps and tanks, and tankers.

❖ ***Funding, along with firefighter availability and member recruitment/retention are among the leading departmental challenges facing rural Ohio fire departments.***

### **Regional Findings**

❖ ***Southeastern Ohio fire departments operate on the lowest budgets, have the fewest members and cover the second largest response area.***

❖ ***Paid rural fire departments from all five regions of the state have newer fire vehicles than do volunteer and partially volunteer/partially paid fire departments.***

❖ ***Wildland fire is among the top three emergency situations that impact rural Ohio volunteer fire departments across four out of five regions.***

❖ ***While southeastern Ohio volunteer and partially volunteer/partially paid fire departments are the best equipped in terms of wildland fire protective gear, these departments are still only able to equip approximately half of their members.***

### **1984, 1994 and 2003 Studies**

❖ ***As would be expected, funding has been a consistent concern of rural Ohio volunteer fire departments for the past twenty years.***

❖ ***Overall, the average response area for rural Ohio volunteer fire departments has appeared to decrease, while membership levels have remained relatively constant.***

❖ ***Member recruitment and retention issues continue to significantly impact rural Ohio volunteer fire departments.***

❖ ***Due to resource limitations, volunteer fire departments continue to face many challenges in terms of striving to provide the same level of response and service offered to those communities protected by paid fire departments.***

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>BACKGROUND INFORMATION .....</b>	<b>6</b>
<i>General Survey Information .....</i>	<i>6</i>
<i>Context of the Study .....</i>	<i>6</i>
<i>Survey Analyses .....</i>	<i>6</i>
<b>2003 SURVEY FINDINGS.....</b>	<b>8</b>
<b>Statewide Results .....</b>	<b>8</b>
<i>Survey Participants .....</i>	<i>8</i>
<i>Membership and Operational Characteristics of Rural Ohio Fire Departments ....</i>	<i>8</i>
<i>Funding Characteristics of Rural Ohio Fire Departments .....</i>	<i>9</i>
<i>Mutual Aid Agreements and Firefighter Associations .....</i>	<i>11</i>
<i>Vehicles and Equipment .....</i>	<i>12</i>
<i>Communications Equipment/Dispatch .....</i>	<i>13</i>
<i>Impact of Emergency Responses and Departmental Issues .....</i>	<i>14</i>
<i>Training .....</i>	<i>16</i>
<i>Assessment of Fire Department Needs .....</i>	<i>18</i>
<b>Regional Results .....</b>	<b>22</b>
<i>Regional Analysis .....</i>	<i>22</i>
<i>Funding and Membership Characteristics .....</i>	<i>22</i>
<i>Impact of Emergency Responses and Departmental Issues .....</i>	<i>23</i>
<i>Training .....</i>	<i>27</i>
<i>Vehicles and Equipment .....</i>	<i>28</i>
<i>Equipment and Training Needs .....</i>	<i>31</i>
<b>1984, 1994 &amp; 2003 STUDIES .....</b>	<b>34</b>
<b>Volunteer Fire Department Funding, Response Area and Membership.....</b>	<b>34</b>
<b>Vehicles .....</b>	<b>35</b>
<b>Training .....</b>	<b>35</b>
<b>APPENDICES .....</b>	<b>36</b>

## **BACKGROUND INFORMATION**

### ***General Survey Information***

In July, 2003, as part of a larger national effort coordinated by the National Association of State Foresters, the Ohio Department of Natural Resources (ODNR), Division of Forestry, sent a survey to over 1,000 rural Ohio fire departments<sup>1</sup>. This study followed two previous rural volunteer fire department surveys, conducted by the Division of Forestry in 1984 and 1994.

The 2003 study, modeled after a survey created by the Texas Forest Service, was designed to capture the training, funding and equipment needs and capabilities of rural fire departments across the state. More specifically, the survey focused on issues related to wildland fire. The response rate for the descriptive survey exceeded expectations; nearly 44% of the original sample returned completed (or partially completed) surveys by December, 2003. The survey responses included three (self-identified) types of fire departments: volunteer, partially volunteer/partially paid and paid.

### ***Context of the Study***

Prior to European development, wildland fire was an important historical disturbance that played a vital role in Ohio's native forests, grasslands and prairies. Due to a variety of factors, including development and fire suppression, what was once a common disturbance that promoted forest health and performed necessary ecological maintenance now frequently threatens homes, communities, personal property, and valuable natural resources.

Rural volunteer fire departments are the primary response units for wildland fires in Ohio, despite being poorly funded, short staffed and under-equipped. In the southeastern part of the state (and a very small portion of northwestern Ohio), in what is known as the state's "Wildland Fire Protection Area<sup>2</sup>", the Ohio Department of Natural Resources, Division of Forestry assists these departments through various means, including training and Federal Excess Personal Property<sup>3</sup> (FEPP) program eligibility. The Division also offers grants of Wildland Fire Personal Protective Equipment and Volunteer Fire Assistance funding to all fire departments statewide that serve populations less than 10,000.

### ***Survey Analyses***

The survey results were examined in three parts: a statewide analysis, regional analysis, and temporal analysis. Initially, the data were examined for differences across the three types of responding fire departments: volunteer, partially paid/partially volunteer, and

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<sup>1</sup> Departments were identified as being "rural" if they served populations of 25,000 or less.

<sup>2</sup> The Ohio Department of Natural Resources, Division of Forestry, is charged with providing leadership in fire management by providing training, equipment and technical assistance to those fire departments that lie within the Division of Forestry's "Wildland Fire Protection Area". This district primarily covers southeastern Ohio along with a small portion of northwestern Ohio. A map of this area is included in the appendix.

<sup>3</sup> The FEPP program provides excess federal property for loan to state foresters for use in rural and/or wildland fire programs.

paid. A second, more in-depth analysis followed, in which the three department types were further broken down into five regions to allow for intrastate comparisons. Lastly, the survey results were analyzed in light of the findings of the 1984 and 1994 studies (solely on those issues that were commonly addressed by the three studies and with an emphasis on data from volunteer departments).

## 2003 SURVEY FINDINGS

The 2003 Ohio Department of Natural Resources, Division of Forestry, rural Ohio fire department survey data were analyzed in two separate segments. Initially, the data were looked at from a statewide perspective, followed by a regional analysis that considered the survey results in terms of five state geographic regions: northwest, northeast, central, southwest and southeast. The statewide analysis provides more general information about rural Ohio fire departments while the regional perspective offers insight into regional characteristics that may be associated with a variety of factors, such as wildland fire frequency, funding characteristics, demographics, agency support, etc. These regional variations are particularly of interest to the Division of Forestry, as a regional analysis provides insight into differences between those fire departments that fall within the Wildland Fire Protection Area and those fire departments in other regions that operate independent of the Division of Forestry.

### Statewide Results

#### *Survey Participants*

Fire departments from 86 of Ohio's 88 counties participated in the study (Preble and Morgan counties were not represented). Participants represented over 440 departments, with a total of 10,283 reported firefighters (Table 1). The majority of the survey participants were volunteer fire departments; just under a quarter of the participants were from fire departments that were partially volunteer/partially paid, while only 21 responses came from fully paid fire departments.

**Table 1: Survey Sample Characteristics.**

<b>Number of Departments Invited to Participate in Survey</b>	1,007
<b>Number of Departments that Responded</b>	442
<b>Volunteer Departments</b>	320
<b>Comb. Volunteer/Paid Departments</b>	101
<b>Paid Departments</b>	21
<b>Number of Counties Represented by the Sample</b>	86/88
<b>Total Number of Active Firefighters Reported</b>	10,283
<b>Active Volunteer Firefighters</b>	8,523
<b>Paid Firefighters</b>	1,760

#### *Membership and Operational Characteristics of Rural Ohio Fire Departments*

The Division of Forestry survey presented a unique opportunity to examine the constraints under which Ohio's rural fire departments operate. The responses represented departments with a wide range of operational characteristics; completed surveys were received from fire departments with as few as 7 and as many as 98 members and with annual budgets ranging from just \$3,500 to \$3.3 million.

The majority of survey responses (n = 320) came from volunteer fire departments. Volunteer fire departments reported covering the largest average response areas (42.9

square miles) with the smallest budgets (\$76,704) and the fewest active firefighters (23.3 members) (Table 2). Conversely, paid fire departments reported having the smallest average response area (22.8 square miles), the largest average annual budget (\$247,092) and the greatest average number of active members (28 firefighters).

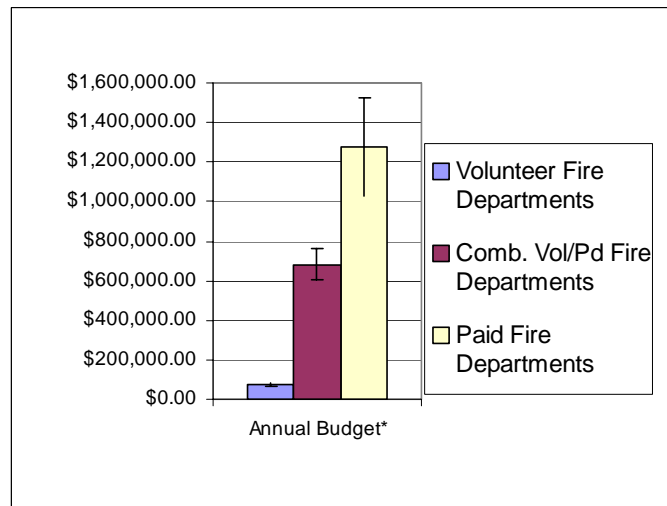
**Table 2: Rural Ohio Fire Department Characteristics.**

	Volunteer Fire Departments		Comb. Vol./Paid Fire Departments		Paid Fire Departments	
	Average	Standard Error	Average	Standard Error	Average	Standard Error
<b>Response Area (sq miles)</b>	42.9	2.0	37.1	3.4	22.8	4.3
<b>Paid Members</b>	0.2	0.1	14.1	1.2	28.0	2.8
<b>Volunteer Members</b>	26.9	0.6	21.5	1.6	0.0	0.0
<b>Active Volunteer Members</b>	23.1	0.5	20.6	1.4	0.0	0.0
<b>Total Members</b>	27.1	0.6	34.9	1.2	28.0	2.8
<b>Total Active Members</b>	23.3	0.5	33.9	1.4	28.0	2.8
<b>Annual Budget*</b>	\$76,704	\$7,591	\$682,355	\$77,781	\$1,275,294	\$247,092

\*Omits "0" responses.

***Funding Characteristics of Rural Ohio Fire Departments***

As would be expected, entirely volunteer fire departments had the smallest reported budgets (Figure 1, Table 3). On average, volunteer fire departments in rural Ohio reported a budget of \$76,704, whereas the average paid fire department operates on a budget of \$1,275,294<sup>4</sup>. The survey results also indicated that volunteer fire departments rely on funds from multiple sources, including donations, fund raisers, and city/county budget allocations, whereas paid departments rely more heavily upon a sole source, namely city/county budgets (Table 4).



**Figure 1: Rural Ohio Fire Departments' Average Annual Budgets.**

<sup>4</sup> Although the average budgets for all three fire department types are slightly inflated by outliers, even when the median budgets are considered, the differences are still considerable (Table 3).

**Table 3: Budget Characteristics of Rural Ohio Fire Departments.**

	<i>Volunteer Fire Departments</i>	<i>Comb. Vol./Paid Fire Departments</i>	<i>Paid Fire Departments</i>
<b>MEAN</b>	\$76,704.21	\$682,355.16	\$1,275,294.12
<b>MEDIAN</b>	\$48,948.00	\$410,000.00	\$1,000,000.00
<b>MODE</b>	\$60,000.00	\$600,000.00	\$1,000,000.00
<b>MAX</b>	\$1,200,000.00	\$2,600,000.00	\$3,300,000.00
<b>MIN</b>	\$3,500.00	\$18,000.00	\$250,000.00
<b>STANDARD ERROR</b>	\$7,591.65	\$77,780.89	\$247,092.93

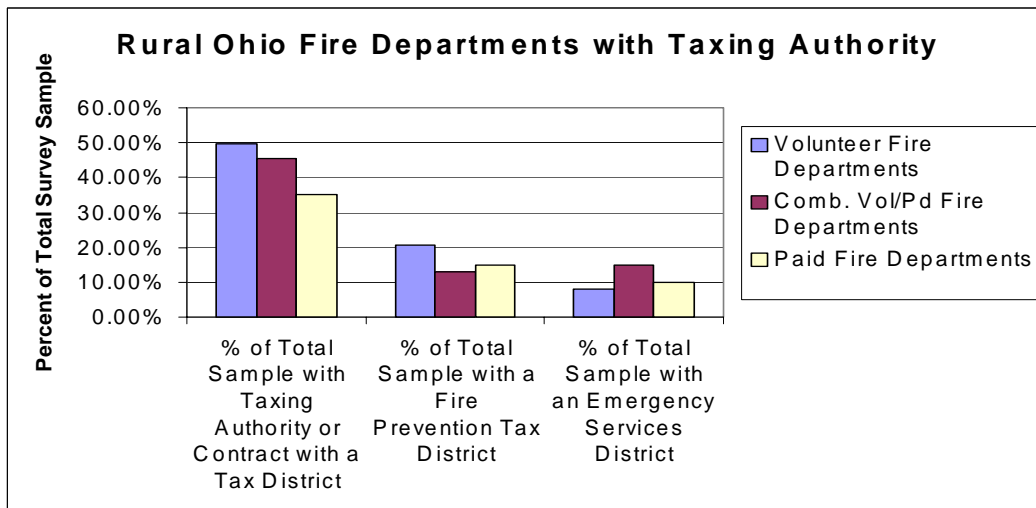
**Table 4: Budget and Funding of Rural Ohio Fire Departments.**

	<i>Volunteer Fire Departments</i>	<i>Comb. Vol./Paid Fire Departments</i>	<i>Paid Fire Departments</i>
	Mean	Mean	Mean
<b>Annual Budget*</b>	\$76,704.21	\$682,355.16	\$1,275,294.12
<b>% Funds from Donations</b>	3.3%	1.0%	0.1%
<b>% Funds from Fund Raisers</b>	9.1%	2.4%	0.5%
<b>% Funds from Water Bills</b>	0.0%	0.0%	0.0%
<b>% Funds from City/County</b>	12.5%	8.7%	25.0%

\* Excludes "0" responses.

Nearly half of all participating volunteer fire departments (49.5%) and partially volunteer/partially paid departments (45.5%) and a third of paid departments (35%) have taxing authority or a contract with a Tax District (Figure 2). Approximately 20% of the volunteer departments have taxing authority in a Fire Prevention District and 8% in an Emergency Services District. Meanwhile, approximately 13% and 15% of partially volunteer/partially paid and paid departments, respectively, have a contract with a Fire Prevention District, and 15% (partially volunteer/partially paid departments) and 10% (paid departments) contract with an Emergency Services District.

**Figure 2: Rural Ohio Fire Departments with Taxing Authority.**



***Mutual Aid Agreements and Firefighter Associations***

Nearly all volunteer (93.8%), partially volunteer/partially paid (93.1%) and paid (90.0%) fire departments reported having mutual aid agreements with neighboring fire departments, though slightly less (79.8%, 85.1% and 70.0%, respectively) reported that these agreements were written (Table 5).

Across all three sample groups, most fire departments reported belonging to a local fire department association (Table 5). The majority of these associations were county associations (as opposed to multi-county), while volunteer fire departments tended to belong to larger associations than did partially volunteer/partially paid and paid departments.

**Table 5: Rural Ohio Fire Departments and Mutual Aid Agreements.**

	<b><i>Volunteer Fire Departments</i></b>	<b><i>Comb. Volunteer/Paid Fire Departments</i></b>	<b><i>Paid Fire Departments</i></b>
<b>% of Sample with Mutual Aid with Neighboring FD's</b>	93.8%	93.1%	90.0%
<b>% of Sample with Written Mutual Aid Agreements</b>	79.8%	85.1%	70.0%
<b>% of Sample Members of a State-Wide Mutual Aid Agreement</b>	56.7%	70.3%	70.0%
<b>% of Sample that are members of a Local Association</b>	83.18%	76.24%	75.00%
<b>% of Sample that are members of a County Association</b>	51.40%	52.48%	55.00%
<b>% of Sample that are members of a Multi-County Association</b>	24.30%	16.83%	5.00%
<b>Mean # of Other FDs in Assoc</b>	12.8	8.4	5.9

### ***Vehicles and Equipment***

Over 2,500 fire vehicles were reported in the survey responses (Table 6). Of these, the majority were pumpers, followed by tankers, brush trucks and ambulances. Brush trucks and ambulances were, on average, the oldest of all vehicles reported.

An important component of Ohio's fire services' vehicles are those that are loaned through the Forest Service's Federal Excess Personal Property, or FEPP, program<sup>5</sup>. To date, the Division of Forestry has facilitated the loan of **XXX** FEPP vehicles to rural Ohio fire departments; of these, a total of 100 were reported in the survey responses. The majority of the reported FEPP vehicles were brush trucks and tankers.

**Table 6: Fire apparatus information for Ohio's rural fire departments.**

	<b>Total Reported</b>	<b>Average Age (yrs)</b>	<b># that are FEPP Loaned</b>
<b>Pumpers</b>	974	16.6	2
<b>Brush Trucks</b>	382	20.3	37
<b>Tankers</b>	399	16.3	27
<b>Ambulance</b>	342	19.0	5
<b>Support</b>	86	13.9	7
<b>Rescue</b>	164	13.6	11
<b>Ladder</b>	76	15.16	4
<b>Chiefs</b>	78	6.8	6
<b>Command</b>	29	9.1	1

On average, volunteer fire departments' vehicles were older (17 years) than those vehicles owned by partially volunteer/partially paid (13 years) and paid (11 years) fire departments (Table 7). When considered by department type, 8.8% of all the vehicles reported by participating volunteer fire departments came from the FEPP program, while 3.7% and less than 1% of the vehicles reported by partially volunteer/partially paid and paid fire departments were from the FEPP program.

**Table 7: Rural Ohio Fire Departments' Fire Vehicles.**

<b>Fire Department Type</b>	<b>Average Age of Fire Vehicles</b>	<b>% of Fire Vehicles that are FEPP Loaned</b>
<b>Volunteer</b>	17	8.8%
<b>Comb. Volunteer/Paid</b>	13	3.7%
<b>Paid</b>	11	0.8%

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<sup>5</sup> In Ohio, only those volunteer fire departments that fall within the ODNR Division of Forestry Wildland Fire Protection Area, which primarily covers southeastern Ohio and a small portion of northwestern Ohio, are eligible for the FEPP program.

In terms of equipment, paid fire departments are clearly the best equipped of the three department types (Table 8). These departments reported having the greatest number of working Self Contained Breathing Apparatuses (SCBAs) in relation to their department size, with an average of 4.1 working SCBAs for every 5 firefighters in their department. Both the volunteer and partially volunteer/partially paid departments have enough working SCBAs to outfit just over half of their members.

All three groups of fire departments reported that only a minimal percentage of their department did not have bunker gear. In contrast, regardless of department type, Ohio's rural fire departments reportedly have only enough wildland fire protective gear to outfit approximately 20% of their members. This is of particular concern, considering that (as will be discussed later in this report) most volunteer fire departments reported that wildland fires are among the leading emergency response situations they deal with. As it costs over \$400 to outfit just one firefighter with wildland fire protective gear, this finding is a strong indication that there is a need to provide wildland fire equipment assistance to those volunteer departments that operate on meager budgets.

**Table 8: Rural Ohio Fire Departments' Equipment.**

Fire Department Type	Average % of Active Members with No Bunker Gear	Average % of Active Members with No Wildland Fire Protective Gear	Average # of Working SCBA's per 5 Fire Fighters
Volunteer	4.22%	78.59%	2.8
Comb. Volunteer/Paid	2.85%	78.57%	2.8
Paid	1.61%	80.00%	4.1

***Communications Equipment/Dispatch***

Overall, most fire departments reported having communications equipment that operate in the high-band VHF frequency range of 150-170 MHz (Table 9). Fewer departments operate at the lower frequencies of 36-50 mhz and the higher frequencies of 450, 800 and 900 mhz. However, nearly 40% of all partially volunteer/partially paid departments and 30% of all paid departments operate at the frequency range of 800 MHz, though only 16.2% of volunteer departments do the same.

**Table 9: Communications Capabilities of Rural Ohio Fire Departments.**

Fire Department Type	% of FD Type with Frequency Range*:				
	VHF (high band) - 150-170 mhz	VHF (low band) 36-50 mhz	UHF - ~450 mhz	800 mhz - trunk	900 mhz - trunk
Volunteer	62.0%	26.2%	15.9%	16.2%	0.3%
Comb. Vol./Paid	46.5%	14.9%	12.9%	38.6%	0.0%
Paid	55.0%	15.0%	20.0%	30.0%	5.0%

*\*Figures do not add up to 100% because many departments reported operating their communications at more than one frequency range.*

Less than 20% of all responding fire departments have Narrow Band compatible communications, and slightly more volunteer fire departments (81.6%) reported having a county-wide or regional radio system than did partially volunteer/partially paid (70.3%) and paid (70%) fire departments (Table 10). Approximately 90% of the participating volunteer and partially volunteer/partially paid fire departments have a pager system for emergency dispatch, while just over 70% of the participating paid departments have the same system.

**Table 10: Communication Systems of Rural Ohio Fire Departments.**

Fire Department Type	% of Sample with Narrow Band Compatibility	% of Sample with County or Regional Radio System	% of Sample with a Pager System
Volunteer	19.6%	81.6%	91.0%
Comb. Volunteer/Paid	18.8%	70.3%	90.1%
Paid	15.0%	70.0%	71.4%

Just over half of all participating volunteer fire departments reported being dispatched by a sheriff's department, while almost half of the participating partially volunteer/partially paid and paid departments are dispatched by other sources, such as 911 dispatch centers or County/Community EMS (Table 11).

**Table 11: Dispatch sources of Rural Ohio Fire Departments.**

Fire Department Type	% of Sample with the Following Dispatch Sources:				
	Sheriff	Phone	City	Fire Department	Other*
Volunteer	52.4%	0.3%	5.7%	4.4%	37.3%
Comb. Volunteer/Paid	33.3%	0.0%	14.0%	11.8%	40.9%
Paid	10.0%	0.0%	30.0%	15.0%	45.0%

\* Other dispatch sources most frequently included County or Community EMS, 911, or other local communication dispatch centers.

### ***Impact of Emergency Responses and Departmental Issues***

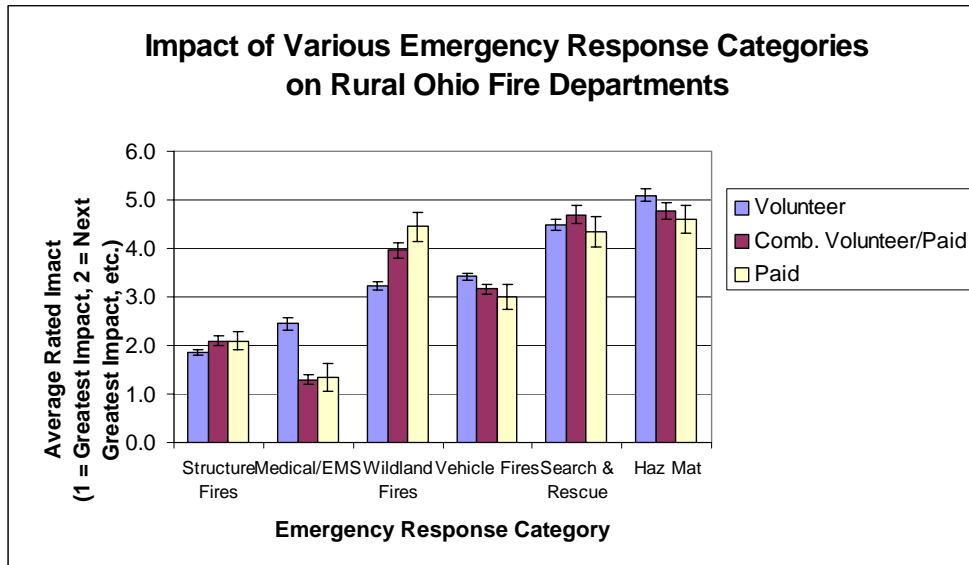
When asked to rank seven emergency responses in terms of how greatly the events affect their fire department, volunteer fire departments, on average, reported that structure fires most affected them, followed by medical/EMS emergencies and wildland fires (Table 12). Partially volunteer/partially paid departments, on average, rated medical/EMS emergencies as having the greatest impact on their department, followed by structure fires. Paid fire departments, on average, rated medical/EMS emergencies and structure fires as having the greatest impact on their departments. It should be noted that all three types of fire departments rated wildland fire as having an even greater impact on their departments than both search and rescue and hazardous material emergencies.

**Table 12: Impact of Emergency Response Situations on Rural Ohio Fire Departments.**

Average Rated Impact to Fire Department (1=Greatest Impact, 2=Next Greatest Impact, Etc.)*						
FD Type	Structure Fires	Medical/EMS	Wildland Fires	Vehicle Fires	Search & Rescue	Haz Mat
Volunteer	1.8	2.5	3.2	3.4	4.5	5.1
Comb. Volunteer/Paid	2.1	1.3	4.0	3.2	4.7	4.8
Paid	2.1	1.3	4.5	3.0	4.4	4.6

\*Omits "0" or blank responses.

**Figure 4: Impact of Emergency Situations on Rural Ohio Fire Departments.**



Other emergency responses that were reported to have an impact on rural fire departments included public service calls, alarm investigations, auto accidents, "grass and field fires"<sup>6</sup>, gas and carbon monoxide calls, down wires and tree limbs, water rescues, and underground mining.

<sup>6</sup> Although grass and field fires are generally regarded as "wildland fires", some survey respondents wrote these terms under the "other" category, rating them separate from wildland fires. This may be an indication of a lack of clarity or understanding among some rural fire departments regarding what exactly constitutes a "wildland fire" and of the training and equipment needs and regulations specific to wildland fire.

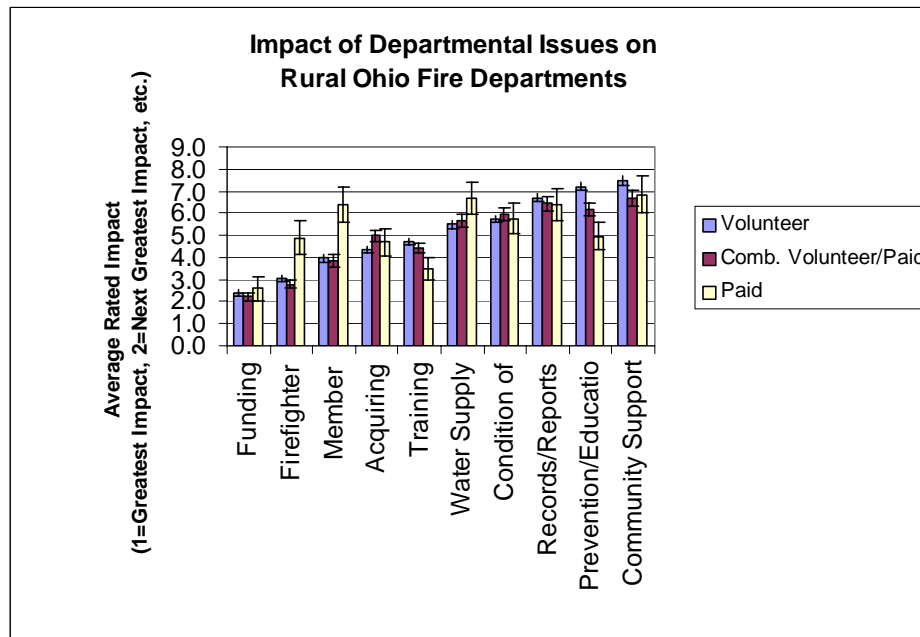
As would be expected, when asked to rate the impact of eleven different departmental issues, all three responding groups rated funding as having the greatest impact (Table 13), and both volunteer and partially volunteer/partially paid departments rated firefighter availability as having the second greatest impact on their departments.

**Table 13: Impact of Departmental Issues on Rural Ohio Fire Departments.**

Fire Department Type	Average Rated Impact to Fire Department		
	Volunteer	Comb. Volunteer/Paid	Paid
<b>Funding</b>	2.4	2.2	2.6
<b>Firefighter Availability</b>	3.0	2.8	4.9
<b>Member Recruitment and Retention</b>	4.0	3.9	6.4
<b>Acquiring Equipment</b>	4.4	5.0	4.7
<b>Training</b>	4.7	4.4	3.5
<b>Water Supply</b>	5.5	5.7	6.7
<b>Condition of Equipment</b>	5.7	6.0	5.7
<b>Records/Reports</b>	6.7	6.4	6.4
<b>Prevention/Education</b>	7.2	6.2	4.9
<b>Community Support</b>	7.5	6.7	6.8

\*Omitted "0" or blank responses.

**Figure 5: Impact of Departmental Issues on Rural Ohio Fire Departments.**



Other departmental issues that reportedly impact fire departments include fitness/well being, safety, housing and facilities, and service quality.

### **Training**

The State of Ohio currently requires all firefighters, including both volunteer and paid members, to complete a certification program that is based on the number of completed training hours (e.g., maximum of 36 hours training for volunteers, minimum 240 hours

for career firefighters, etc.). Most, but not all, departments (approximately 80% of all survey participants) reported participating in a Firefighter Certification Program (Table 14). There are several possible explanations as to why fewer than 100% of all participants reported participating in a certification program. Non-response (i.e., leaving the question unanswered) is the most likely reason; however, because some departments did in fact answer "no" to the question (which read, "Does the FD participate in a Firefighter Certification Program?"), confusion or lack of clarity regarding what exactly constitutes Ohio's "firefighter certification program" may also be to blame.

Despite an expressed desire to incorporate wildland firefighting courses into Ohio's firefighter certification training program, very few departments (4% of volunteer departments, 3% of partially volunteer/partially paid departments, and no paid fire departments) currently participate in the National Wildfire Coordinating Group (NWCG) wildland firefighter "red card" training (a training program that certifies wildland firefighters nationwide). However, the majority of all three groups support including this training in their advanced level firefighter certification. This suggests that there may be a need to reexamine and amend the curricula of Ohio's firefighter certifications so that it better reflects the training needs and wants of Ohio's rural fire departments.

Partially volunteer/partially paid and paid departments, on average, spent more time (15.8 hours and 12.8 hours) on in-house training per month than did volunteer departments (6.1 hours) (Table 14). Paid departments also tended to send a greater percentage of their personnel to other fire trainings and were more likely to have an International Fire Service Training Association (IFSTA) library than those departments that were fully or partially volunteer-based.

**Table 14: Training Characteristics of Rural Ohio Fire Departments.**

<b>Fire Department Type</b>	<b>Volunteer</b>	<b>Comb. Volunteer/Paid</b>	<b>Paid</b>
<b>% of sample that participates in a Firefighter Cert. Program</b>	85.0%	80.2%	80.0%
<b>% of sample that participates in NWCG "Red Card" Program</b>	4.1%	3.0%	0.0%
<b>% of sample that support including NWCG wildland fire courses in advanced FF certification</b>	76.3%	65.3%	65.0%
<b>Avg. # of hrs/month spent on in-house training</b>	6.1	15.8	12.8
<b>Avg. % of Personnel that attend other fire trainings per year</b>	40.2%	42.3%	60.3%
<b>% of Departments that have an IFSTA Library</b>	25.9%	58.4%	75.0%

***Assessment of Fire Department Needs***

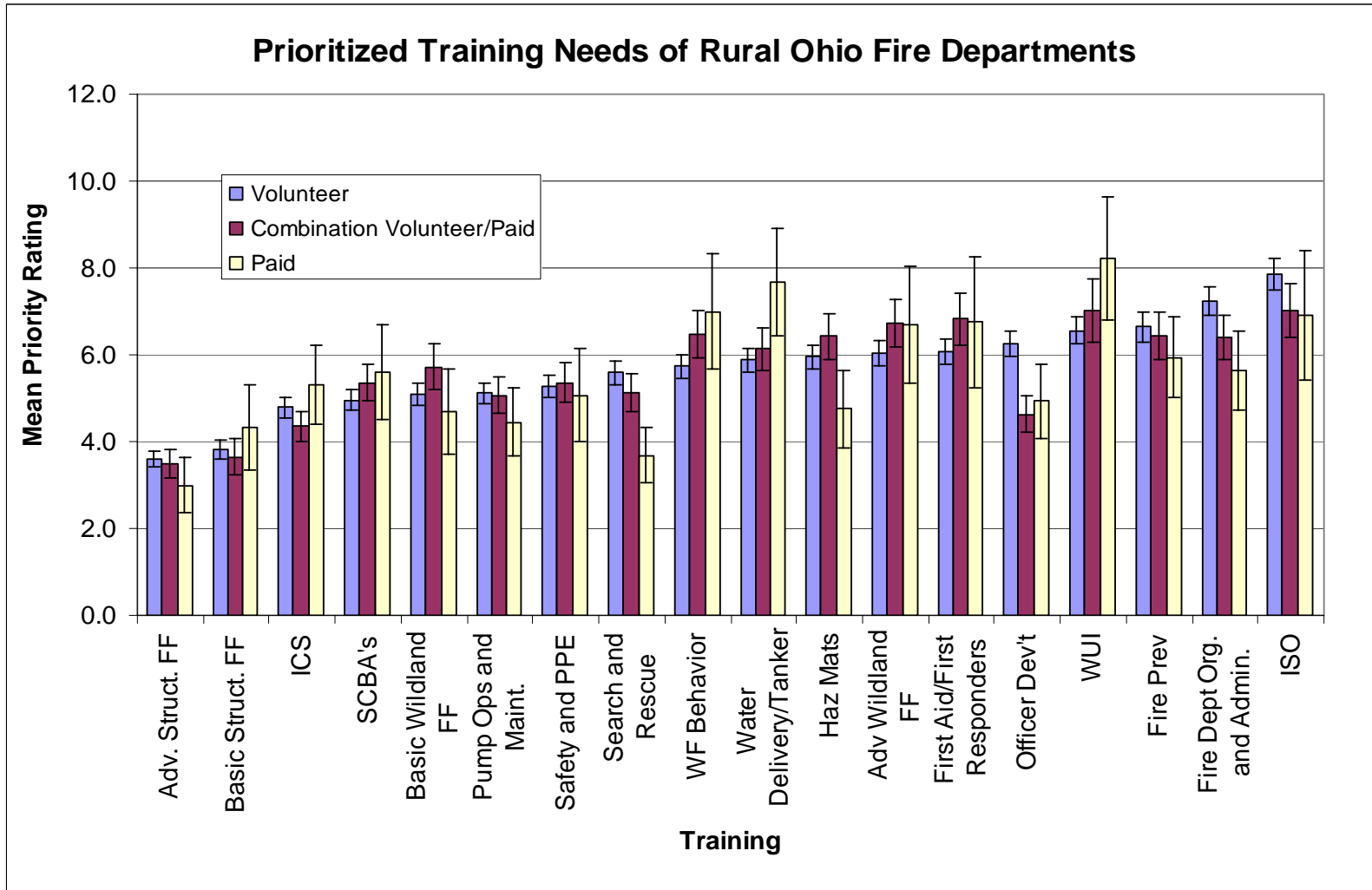
Across all three sample groups, basic and advanced firefighting training were the top two reported training needs (Table 15). Incident Command System (ICS) and SCBA training were the next-highest ranked priorities for volunteer departments. Of the list of 18 different training types, basic wildland firefighting ranked, on average, fifth (after only advanced and structural firefighting, the Incident Command System, and SCBAs) in terms of priority for both volunteer and paid departments and ninth overall for partially volunteer/partially paid departments. An average, all groups rated basic wildland fire training as a greater need than hazardous material, first aid/first responder and fire prevention training. These findings further indicate the need to incorporate wildland firefighting training into Ohio's existing firefighter certification training.

**Table 15: Training Needs of Rural Ohio Fire Departments.**

Training	Fire Department Type		
	Volunteer	Combination Volunteer/Paid	Paid
Advanced Structural Firefighting	3.6	3.5	3.0
Basic Structural Firefighting	3.8	3.6	4.3
Incident Command System	4.8	4.4	5.3
SCBA's	4.9	5.4	5.6
Basic Wildland Firefighting	5.1	5.7	4.7
Pump Operations and Maintenance	5.1	5.1	4.4
Safety and PPE	5.3	5.4	5.1
Search and Rescue Operations	5.6	5.1	3.7
Wildland Fire Behavior	5.7	6.5	7.0
Water Delivery/Tanker Shuttle	5.9	6.1	7.7
Hazardous Materials	5.9	6.4	4.8
Advanced Wildland Firefighting	6.0	6.7	6.7
First Aid/First Responders	6.1	6.8	6.8
Officer Development	6.3	4.6	4.9
Urban Wildland Interface	6.6	7.0	8.2
Fire Prevention	6.6	6.4	5.9
Fire Department Org. and Admin.	7.2	6.4	5.6
Insurance Service Office	7.8	7.0	6.9

\* Omits "0" or blank responses.

Figure 6: Average Training Needs of Rural Ohio Fire Departments, Based on Priority.



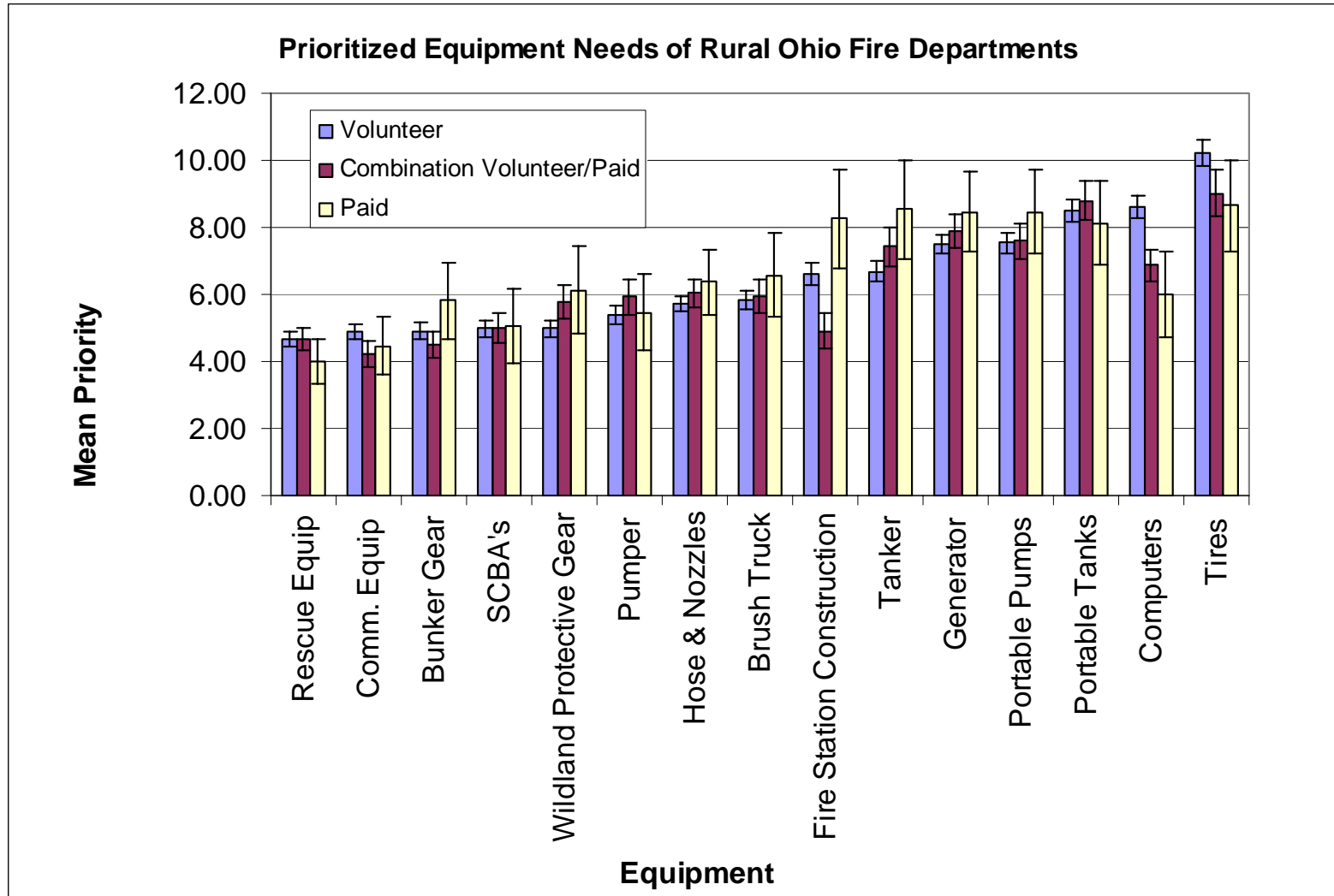
The top three equipment needs of volunteer and partially volunteer/partially paid fire departments, in terms of rated priority, were rescue equipment, communications equipment and bunker gear (Table 16). Paid fire departments tended to rate rescue equipment, communications equipment and SCBA's as their top three equipment needs. On average, all three groups prioritized wildland protective gear as being a greater need than hoses and nozzles, brush trucks, tankers, and a number of other types of equipment.

**Table 16: Equipment Needs of Rural Ohio Fire Departments.**

Mean Prioritized Equipment Needs (1 = Greatest Need)*	Fire Department Type		
	Volunteer	Comb. Volunteer/Paid	Paid
Rescue Equipment	4.7	4.7	4.0
Communications Equipment	4.9	4.3	4.5
Bunker Gear	4.9	4.5	5.8
SCBA's	5.0	5.0	5.1
Wildland Protective Gear	5.0	5.8	6.1
Pumper	5.4	5.9	5.5
Hose & Nozzles	5.7	6.0	6.4
Brush Truck	5.8	6.0	6.6
Fire Station Construction	6.6	4.9	8.3
Tanker	6.7	7.4	8.5
Generator	7.5	7.9	8.5
Portable Pumps	7.5	7.6	8.5
Portable Tanks	8.5	8.8	8.1
Computers	8.6	6.9	6.0
Tires	10.2	9.0	8.6

\* Omits "0" or blank responses

**Figure 7: Average Equipment Needs of Rural Ohio Fire Departments, Based on Priority.**



## Regional Results

### *Regional Analysis*

Following the statewide analysis of the survey results, the data were divided into five regions (according to counties, Appendix B): northwest, northeast, central, southeast and southwest Ohio. The data were then analyzed in terms of funding and membership characteristics, impact of emergency responses and departmental issues, vehicle and equipment needs and training activities and needs.

### *Funding and Membership Characteristics*

Overall, 89 departments from northwest (20%), 166 from northeast (37.5%), 36 from central (8%), 86 from southeast (19.5%) and 65 from southwest (14.7%) Ohio participated in the survey. Southeastern Ohio, which had the fewest active members (20.7), had the second largest average response area (49.8 square miles) (Table 17). Southwestern Ohio, which had the greatest average number of active members (31.5), reported the smallest average response area (34.0 square miles).

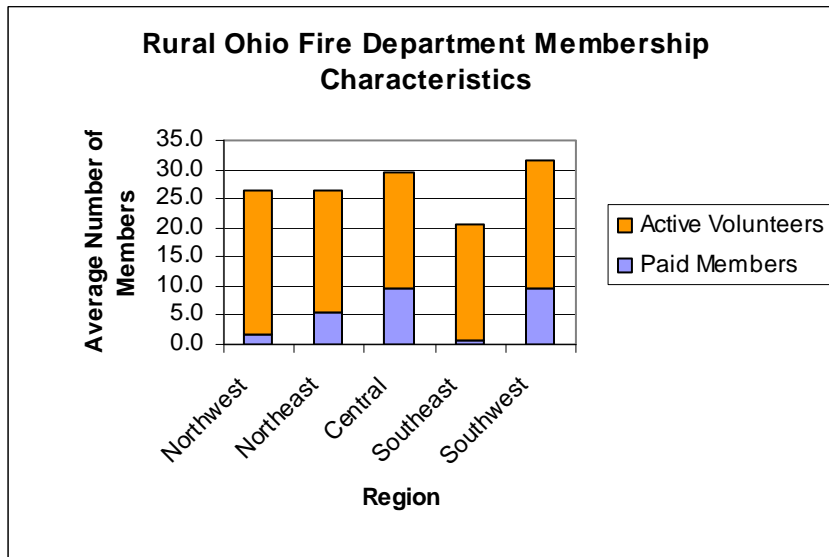
**Table 17: Department and Membership Characteristics of Rural Ohio Fire Department Survey Participants, by Region.**

	Northwest	Northeast	Central	Southeast	Southwest
<b>Total Departments</b>	<b>89</b>	<b>166</b>	<b>36</b>	<b>86</b>	<b>65</b>
Volunteer Fire Departments	80	111	14	81	35
Comb. Fire Departments	7	44	19	4	27
Paid Fire Departments <sup>7</sup>	2	11	3	1	3
<b>Avg. Total Active Members</b>	<b>26.5</b>	<b>26.2</b>	<b>29.3</b>	<b>20.7</b>	<b>31.5</b>
Avg. # Paid Members	1.9	5.6	9.7	0.5	9.7
Avg. # Vol. Members	28.3	22.9	24.7	25.3	22.0
Avg. # Active Members	24.6	20.7	19.9	20.2	21.9
<b>Average Response Area (sq miles)</b>	<b>42.2</b>	<b>34.8</b>	<b>55.2</b>	<b>49.8</b>	<b>34.0</b>

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<sup>7</sup> Because the sample sizes for paid departments from all five regions of the state are so small, it is unlikely that analyses of data from these groups are representative. However, it is likely that the data do provide an indication of the differences that exist across the three department types, regardless of regional location.

**Figure 8: Rural Ohio Fire Department Members**



Southeastern Ohio rural fire departments of all types, on average, operate on budgets that are a great deal smaller (\$59,426) than those departments in other regions of the state (Table 18) (it is worth noting, however, that the *median* budget for northwest Ohio (along with the median budget of southeast Ohio) is also relatively small compared to the median budgets of departments in the other three regions of the state). Volunteer fire departments in the southeastern region also operate on the smallest budgets, on average, of all volunteer fire departments in the state of Ohio.

**Table 18: Budget Characteristics of Rural Ohio Fire Departments, by Region.**

BUDGET*	Northwest	Northeast	Central	Southeast	Southwest
<b>Overall Average</b>	\$232,531	\$338,430	\$658,577	<b>\$59,426</b>	\$480,432
<b>Overall Median</b>	<b>\$47,500</b>	\$100,000	\$347,500	<b>\$35,000</b>	\$100,000
<b>Standard Error</b>	\$100,168	\$50,270	\$156,830	\$9,590	\$115,648
<b>Volunteer Fire Departments</b>	\$166,319	\$117,909	\$108,571	\$42,352	\$70,298
<b>Partially Paid/Partially Vol.</b>	\$638,833	\$615,967	\$832,063	\$271,108	\$775,666
<b>Paid</b>	\$1,000,000	\$979,778	\$1,016,667	\$261,000**	\$2,950,000**

\* Omits all "0" values.

\*\*Only 2 paid fire departments in southwest Ohio and 1 from southeast Ohio provided their budget information; therefore, these numbers do not represent averages.

***Impact of Emergency Responses and Departmental Issues***

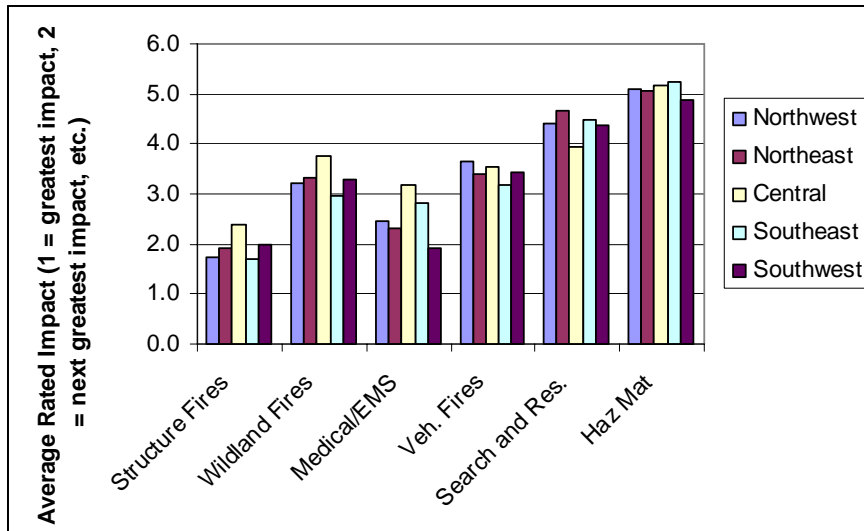
In terms of emergency response situations, structure fires, medical/EMS emergencies, vehicle fires and wildland fires were reported to have the greatest impact on rural Ohio fire departments (Table 19). Wildland fires appear to affect volunteer fire departments more so than partially paid/partially volunteer or paid departments, falling among the top three emergencies that impact fire departments across 4 of the state's 5 regions (Figure 9).

**Table 19: Top Three Emergency Response Situations that Impact Rural Ohio Fire Departments, by Region.**

	<b>Volunteer Fire Departments</b>	<b>Partially Paid/Partially Vol. Depts.</b>	<b>Paid Fire Departments</b>
<b>Northwest</b>	Structure Fires Medical/EMS Wildland Fires	Structure Fires Medical/EMS Vehicle Fires	Medical/EMS Structure Fires Vehicle Fires
<b>Northeast</b>	Structure Fires Medical/EMS Wildland Fires	Medical/EMS Structure Fires Vehicle Fires	Medical/EMS Structure Fires Vehicle Fires
<b>Central</b>	Structure Fires Medical/EMS Vehicle Fires	Medical/EMS Structure Fires Vehicle Fires	Structure Fires Medical/EMS Vehicle Fires
<b>Southeast</b>	Structure Fires Medical/EMS Wildland Fires	Medical/EMS Structure Fires Vehicle Fires	Structure Fires* Search and Rescue* Vehicle Fires*
<b>Southwest</b>	Medical/EMS Structure Fires Wildland Fires	Medical/EMS Structure Fires Vehicle Fires	Medical/EMS Structure Fires Vehicle Fires

*\*There was only one paid department represented in the surveys received from the southeast region of Ohio; therefore, these values do not represent an average.*

**Figure 9: Impact of Emergency Situations on Rural Ohio Volunteer Fire Departments, by Region.**



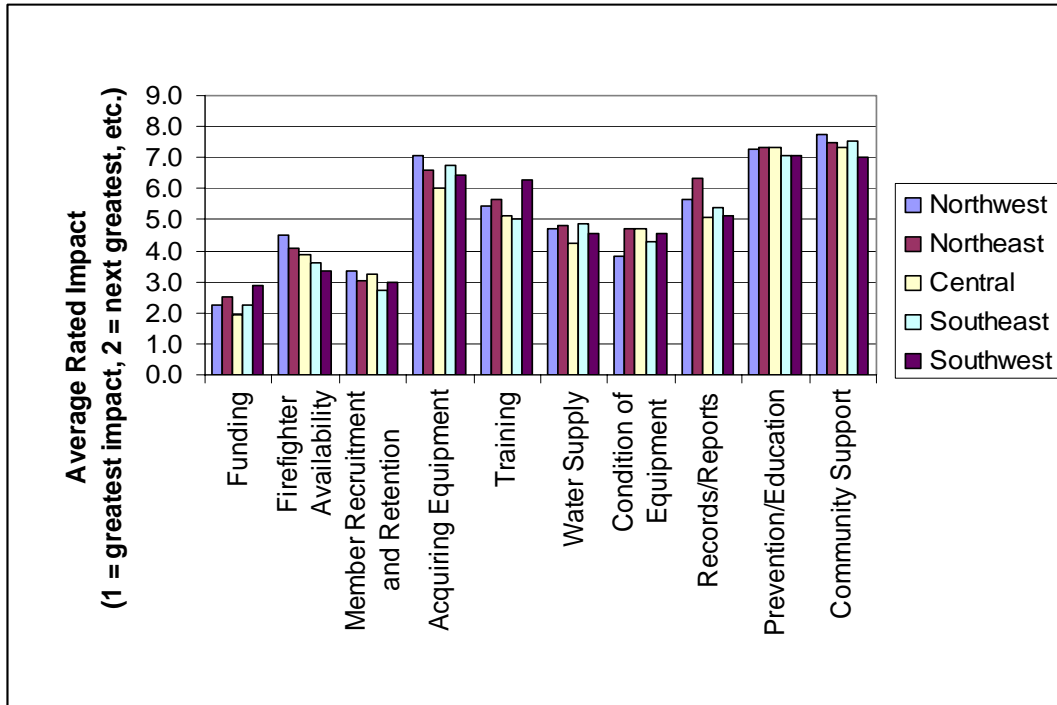
For the most part, a few departmental issues stood out as having the greatest impact on rural Ohio fire departments across all five regions: funding, member recruitment and retention and firefighter availability (Table 20). When just volunteer fire departments were considered, there appeared to be very little variation across the state in how the responding volunteer fire departments rated the impact of various departmental issues (Figure 10).

**Table 20: Top Three Departmental Issues Affecting Rural Ohio Fire Departments.**

	<b>Volunteer Fire Departments</b>	<b>Partially Paid/Partially Vol. Depts.</b>	<b>Paid Fire Departments</b>
<b>Northwest</b>	Funding Member Recruitment and Retention Condition of Equipment	Member Recruitment and Retention Funding Firefighter Availability	Funding Water Supply Prevention/Education
<b>Northeast</b>	Funding Member Recruitment and Retention Firefighter Availability	Funding Member Recruitment and Retention Firefighter Availability	Water Supply Funding Condition of Equipment
<b>Central</b>	Funding Member Recruitment and Retention Firefighter Availability	Funding Member Recruitment and Retention Firefighter Availability	Funding Member Recruitment/Retention Water Supply
<b>Southeast</b>	Funding Member Recruitment and Retention Firefighter Availability	Funding Member Recruitment and Retention Firefighter Availability	Funding* Condition of Equipment* Records/Equipment*
<b>Southwest</b>	Funding Member Recruitment and Retention Firefighter Availability	Funding Firefighter Availability Member Recruitment and Retention	Funding Condition of Equipment Water Supply

*\*There is only one paid department represented in the surveys received from the southeast region of Ohio; therefore, these values do not represent an average.*

**Figure 10: Impact of Departmental Issues on Rural Ohio Volunteer Fire Departments by Region.**



### **Training**

There was little variation regionally in the training characteristics of rural Ohio fire departments. As was found in the statewide analysis, less than 100% of the sample from all five regions reported participating in a firefighter certification program, despite the fact that Ohio has statewide qualification standards for firefighters (Table 21). Again, this discrepancy is most likely due to both non-response to the question and lack of clarity regarding what Ohio's "firefighter certification" standards are.

Also as was found statewide, regionally, most departments do not participate in wildland firefighter training programs but support the inclusion of this training in Ohio's advanced firefighter certification standards.

**Table 21: Training Characteristics and Preferences of Rural Ohio Fire Departments, by Region.**

		% of sample that Participate in a FF Certification Program	% of sample that participate in the NWCG "Red Card" Program	% of sample that support including NWCG wildland fire courses in Adv FF certification
<b>Northwest</b>	<b>VFDs</b>	91.1%	0.0%	70.9%
	<b>Comb. FDs</b>	100.0%	0.0%	71.4%
	<b>Paid FDs</b>	100.0%	0.0%	100.0%
<b>Northeast</b>	<b>VFDs</b>	84.7%	2.7%	81.1%
	<b>Comb FDs</b>	77.3%	4.5%	70.5%
	<b>Paid FDs</b>	72.7%	0.0%	63.6%
<b>Central</b>	<b>VFDs</b>	71.4%	14.3%	78.6%
	<b>Comb FDs</b>	84.2%	0.0%	57.9%
	<b>Paid FDs</b>	100.0%	0.0%	66.7%
<b>Southeast</b>	<b>VFDs</b>	82.7%	8.6%	75.3%
	<b>Comb FDs</b>	75.0%	0.0%	75.0%
	<b>Paid FDs*</b>	100.0%	0.0%	100.0%
<b>Southwest</b>	<b>VFDs</b>	80.6%	2.8%	72.2%
	<b>Comb FDs</b>	77.8%	3.7%	59.3%
	<b>Paid FDs</b>	66.7%	0.0%	33.3%

*\*There is only one paid department represented in the surveys received from the southeast region of Ohio.*

As might be expected, all paid departments (regardless of region) spend more time on in-house training than their volunteer counterparts (Table 22). Southeastern Ohio fire departments send their personnel less frequently to additional, outside fire training courses than do fire departments in other parts of the state. In every region, a greater percentage of paid fire departments have a library of International Fire Service Training Association (IFSTA) manuals than do volunteer and partially volunteer/partially paid fire departments.

**Table 22: Training Characteristics and Capabilities of Rural Ohio Fire Departments, by Region.**

		Avg. # of hrs/month spent on in-house training	Avg. % of Personnel that attend other fire trainings per year	% of Departments that have an IFSTA Library
Northwest	VFDs	5.4	12.0%	32.9%
	Comb. FDs	6.8	17.0%	71.4%
	Paid FDs	14.0	11.5%	50.0%
Northeast	VFDs	6.5	8.9%	25.2%
	Comb FDs	19.8	15.2%	61.4%
	Paid FDs	9.7	15.0%	72.7%
Central	VFDs	7.1	9.7%	14.3%
	Comb FDs	12.9	14.3%	57.9%
	Paid FDs	16.0	16.3%	100.0%
Southeast	VFDs	5.8	7.3%	22.2%
	Comb FDs	6.0	6.0%	75.0%
	Paid FDs*	20.0	5.0%	100.0%
Southwest	VFDs	6.8	10.4%	25.0%
	Comb FDs	14.6	12.7%	48.1%
	Paid FDs	17.3	19.7%	100.0%

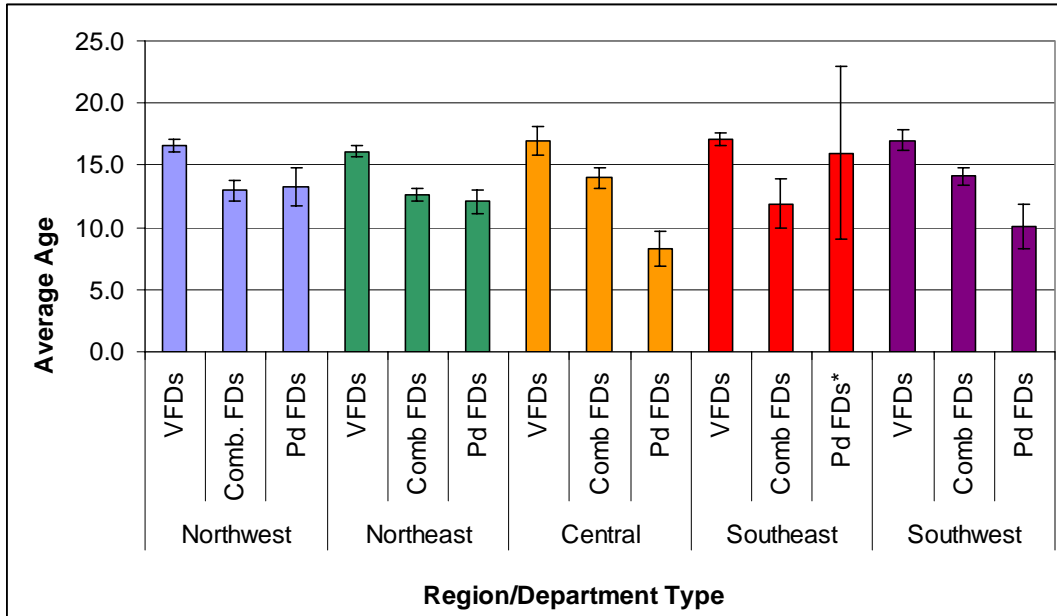
\*There is only one paid department represented in the surveys received from the southeast region of Ohio.

### ***Vehicles and Equipment***

In all five regions of the state, paid departments, on average, reported having newer fire vehicles than did volunteer departments (Figure 11). Paid fire departments from central and southwest Ohio have the newest fire vehicles (8.3 and 10.1 years old, respectively) while volunteer departments from southeast, southwest, and central Ohio have the oldest vehicles (17 years old, on average).

Because most of the region's fire departments are eligible for the Federal Excess Personal Property program, southeastern Ohio volunteer and partially paid/partially volunteer fire departments reported the greatest percentage of fire vehicles from the FEPP program (12.4% and 10%, Table 23). Southwestern Ohio (of which most departments are not eligible for the FEPP program) has the smallest percentage of FEPP loaned fire vehicles.

**Figure 11: Average Age of Rural Ohio Fire Departments' Fire Vehicles, by Region.**



\*There is only one paid department represented in the surveys received from the southeast region of Ohio; therefore, these values do not represent an average.

**Table 23: Percentage of Fire Vehicles from FEPP Program, by Region.**

		% of Vehicles that are FEPP Loaned
Northwest	VFDs	7.4%
	Comb. FDs	5.8%
	Paid FDs	0.0%
Northeast	VFDs	9.5%
	Comb FDs	4.0%
	Paid FDs	1.5%
Central	VFDs	3.9%
	Comb FDs	5.0%
	Paid FDs	0.0%
Southeast	VFDs	12.4%
	Comb FDs	10.0%
	Paid FDs*	0.0%
Southwest	VFDs	0.0%
	Comb FDs	1.9%
	Paid FDs	0.0%

\*There is only one paid department represented in the surveys received from the southeast region of Ohio; therefore, these values do not represent an average.

Statewide, fire departments of all types have enough, or almost enough, bunker gear to outfit their entire fire department (Table 24). Southeastern Ohio volunteer and partially paid/partially volunteer fire departments are the best equipped in terms of wildland fire

protective gear; only 63% and 45% of these departments do not have wildland fire protective gear<sup>8</sup>.

**Table 24: Rural Ohio Fire Departments' Equipment, by Region.**

		Mean % of FD with no Bunker Gear	Mean % of FD with no Wildland Fire Protective Gear
Northwest	VFDs	1.3%	84.6%
	Comb. FDs	14.3%	69.5%
	Paid FDs	0.0%	100.0%
Northeast	VFDs	4.1%	84.5%
	Comb FDs	0.8%	74.0%
	Paid FDs	2.9%	72.7%
Central	VFDs	0.0%	81.4%
	Comb FDs	3.9%	92.0%
	Paid FDs	0.0%	100.0%
Southeast	VFDs	5.9%	62.9%
	Comb FDs	0.0%	45.1%
	Paid FDs*	0.0%	100.0%
Southwest	VFDs	9.3%	84.8%
	Comb FDs	2.9%	84.1%
	Paid FDs	0.0%	66.7%

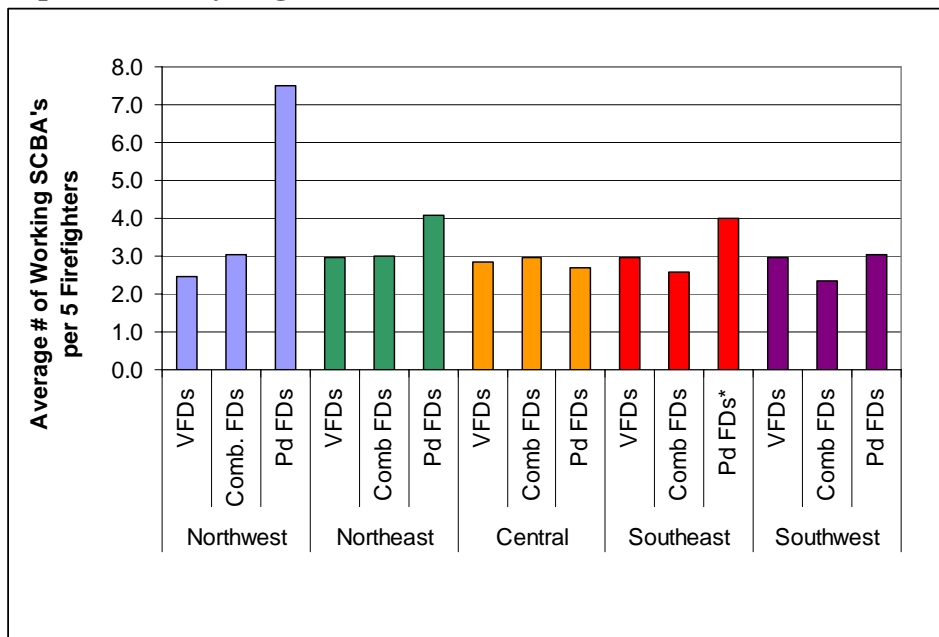
*\*There is only one paid department represented in the surveys received from the southeast region of Ohio; therefore, these values do not represent an average.*

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<sup>8</sup> This can most likely be partly attributed to ODNR's Division of Forestry's innovative efforts to provide, via federal grant funding, wildland fire protective equipment free of charge to volunteer fire departments falling in the Division of Forestry's wildland fire protection area.

There was very little difference in the ratio of working SCBA's to total number of firefighters, regardless of region or department type. Overall, most fire departments were well equipped with SCBAs, though paid departments, on average, did tend to have a greater ratio of working SCBA's per 5 firefighters than did volunteer and partially paid/partially volunteer departments (Figure 12).

**Figure 12: Average Number of Working SCBA's per 5 Firefighters, Rural Ohio Fire Departments, by Region.**



***Equipment and Training Needs***

When fire equipment needs of all three types of fire departments from the five regions of Ohio were considered, little regional variation was apparent (Table 25). However, there did appear to be five equipment needs that were shared commonly across the state. Rescue equipment was, on average, in the top four priorities of nearly all types of fire departments from all five regions. Other equipment that were among the leading needs of all rural Ohio fire departments included SCBAs, bunker gear, communications equipment, and wildland fire protective gear. Meanwhile, tires, portable tanks, computers and portable pumps were of the lowest priority across all five regions.

**Table 25: Top Four Equipment Needs (on average) of Rural Ohio Fire Departments, by Region.**

	<b>Volunteer Fire Departments</b>	<b>Partially Paid/Partially Vol. Depts.</b>	<b>Paid Fire Departments</b>
<b>Northwest</b>	Communications Equipment	SCBAs	Rescue Equipment
	Rescue Equipment	Hose/Nozzles	Wildland Fire Protective Gear
	Bunker Gear	Portable Pump	Bunker Gear
	Wildland Fire Protective Gear/Pumper	Communications Equipment	Portable Tanks
<b>Northeast</b>	Bunker Gear	Communications Equipment	Communications Equipment
	SCBAs	Rescue Equipment	Rescue Equipment
	Rescue Equipment	Bunker Gear	SCBAs
	Communications Equipment	Facilities/Construction	Bunker Gear/Pumper
<b>Central</b>	SCBAs	Rescue Equipment	Computers
	Communications Equipment	Bunker Gear	Bunker Gear
	Rescue Equipment	Wildland Protective Gear	Facilities/Construction
	Pumper	Communications Equipment	Wildland Fire Protective Gear
<b>Southeast</b>	Wildland Protective Gear	SCBAs	Pumper
	Rescue Equipment	Bunker Gear	Communications Equipment
	Pumper	Rescue Equipment	Wildland Fire Protective Gear
	Wildland Fire Protective Gear/Pumper	Facilities/Construction	Rescue Equipment
<b>Southwest</b>	SCBAs	Communications Equipment	SCBAs
	Bunker Gear	Bunker Gear	Wildland Fire Protective Gear
	Rescue Equipment	SCBAs	Rescue Equipment
	Wildland Fire Protective Gear/Pumper	Rescue Equipment	Computers/Tanker

Fire departments from across the state also shared common training needs (Table 26). Basic and advanced structural firefighting and Incident Command System (ICS) training were the top priorities among fire departments from across the state. Southeastern Ohio volunteer fire departments also tended to rate basic wildland firefighting training as a high priority, as did paid departments from southwest and northwest Ohio. Despite these similarities, there were some more general differences in the needs of the three department types. For example, volunteer departments appeared to have a greater need for more technical training (i.e., structural firefighting, incident command system, basic wildland firefighting), while more specialized, administrative training (e.g., fire department organization and maintenance, officer development) were more frequently among the top priorities of partially paid/partially volunteer and paid fire departments.

**Table 26: Top Four Training Needs of Rural Ohio Fire Departments, by Region.**

	<b>Volunteer Fire Departments</b>	<b>Partially Paid/Partially Volunteer Depts.</b>	<b>Paid Fire Departments</b>
<b>Northwest</b>	Adv. Structural Firefighting	Wildland Urban Interface	Adv. Structural Firefighting
	Basic Structural Firefighting	Wildland Fire Behavior	First Aid/First Responder
	SCBAs	Basic Wildland Firefighting	Basic Wildland Firefighting
	Incident Command System	Adv. Wildland Firefighting	Adv. Wildland Firefighting
<b>Northeast</b>	Adv. Structural Firefighting	Adv. Structural Firefighting	Adv. Structural Firefighting
	Basic Structural Firefighting	Basic Structural Firefighting	Search and Rescue Ops
	Incident Command System	Incident Command System	Pump Operations & Maintenance
	Safety & PPE	Officer Development	Basic Structural Firefighting
<b>Central</b>	Basic Structural Firefighting	Adv. Structural Firefighting	Officer Development
	Adv. Wildland Firefighting	Basic Structural Firefighting	Wildland Urban Interface
	Adv. Structural Firefighting	Pump Ops and Mgt	Incident Command System
	Wildland Fire Behavior	Incident Command System	Water Delivery/Tanker Shuttle
<b>Southeast</b>	Adv. Structural Firefighting	Basic Structural Firefighting	Search and Rescue Ops
	Basic Structural Firefighting	SCBAs	Fire Dept Organization and Admin
	Incident Command System	Safety & PPE	Pump Operations & Maintenance
	Basic Wildland Firefighting	Fire Prevention	Hazardous Materials
<b>Southwest</b>	Adv. Structural Firefighting	Adv. Structural Firefighting	Basic Structural Firefighting
	Basic Structural Firefighting	Basic Structural Firefighting	Adv. Structural Firefighting
	Incident Command System	Officer Development	Hazardous Materials
	SCBAs	Incident Command System	Officer Dev./Basic Wildland Firefighting

## 1984, 1994 & 2003 STUDIES

In 1984 and 1994, the Division of Forestry conducted similar, smaller studies of Ohio's rural volunteer fire departments. When the findings of these two studies are considered collectively with the results from the 2003 survey, greater insight into past, present and future direction of Ohio's rural fire departments can be gained<sup>9</sup>.

### **Volunteer Fire Department Funding, Response Area and Membership**

Three factors that can quickly and easily characterize fire departments' capabilities and limitations are funding, response area and membership. Rural fire departments, particularly those that are strictly volunteer, often operate on meager budgets and limited resources despite being regarded as crucial response units that respond to various types of emergencies across a large geographic area. In the case of rural Ohio areas, fire department resources are often stretched even thinner during those times of the year (namely, spring and fall) when wildland fire becomes a significant threat.

As would be expected, funding has been a consistent concern of rural volunteer fire departments; the 1994 survey report named funding one of the top three issues facing Ohio's fire service. In 1984, the Ohio Department of Natural Resources study found that the majority of the state's rural fire departments (the majority of which were most likely volunteer) had operating budgets between \$5,000 and \$15,000 per year. In 1994, it was estimated that the typical volunteer fire department budget had risen to approximately \$47,000. While the 2003 study found the average volunteer fire department budget to be approximately \$76,704, when examined more closely, it was found that this number was largely influenced by large outliers. A more accurate measure of rural Ohio volunteer fire departments' 2003 budgets may in fact be the median, which was approximately \$48,948.

A second important factor to be considered alongside funding is the geographic area for which a department is responsible for serving. Overall, the average response area of rural Ohio volunteer fire departments has appeared to decrease. In 1984, it was estimated that the majority of rural Ohio volunteer fire departments served two townships, or, approximately 72 square miles. However, the results of the 2003 survey indicated that this number had fallen to an average of 42.9 square miles (no figures for this particular issue were available in the 1994 report).

Fire department membership is another important factor to consider when examining funding and response area. For the most part, rural Ohio volunteer fire department membership levels have remained constant throughout the past twenty years. In 1984, ODNR reported that the majority of rural Ohio fire departments operated with twenty to twenty-five members. The 1994 survey report stated that this number had largely remained the same, with most departments having approximately twenty-five active

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<sup>9</sup> Because the scope and intent of the three studies were varied, only a few issues overlapped across all three reviews: funding, response area, department membership, vehicles and training.

firefighters. As of 2003, the average rural Ohio volunteer fire department operated with approximately twenty-three active firefighters.

The impacts of member recruitment and retention challenges have been felt consistently over time by Ohio's rural volunteer fire departments. The report on the 1994 Division of Forestry study identified this particular issue as a top priority; as of 2003, membership recruitment and retention remained among the top three departmental issues that impact rural Ohio volunteer fire departments.

Whereas volunteer fire departments appear to have made strides in terms of providing more resources over a smaller area (as of 2003, a median budget of \$48,948 with 23 active members covering 43 square miles), when contrasted with these same characteristics of paid departments (in 2003, a median budget of \$1,275,294 with 28 active members covering 23 square miles), it becomes clear that volunteer fire departments still have many persistent challenges to overcome in terms of being able to provide the same level of response offered those communities protected by paid departments.

### **Vehicles**

Effective fire vehicles are a vital component of fire protection, particularly in more rural or remote areas and among departments that are responsible for serving large areas. However, rural volunteer fire departments continue to operate with the oldest fire vehicles in the state. In 1984, the Division of Forestry reported that the majority of all fire vehicles were over eleven years old, with most falling between the ages of 11-15 years. In fact, only approximately 30% of the state's rural fire protection vehicles were under 10 years old. As of 1994, nearly half of Ohio's fire vehicles were over 10 years old and 30% were over 15 years old. The 2003 study suggests that rural Ohio volunteer fire departments continue to operate with aging vehicles. According to the survey responses, the average age of rural Ohio volunteer fire departments' fire vehicles was 17.

### **Training**

A key to the success of any fire department is successful and consistent training. In response to the Division of Forestry's 1994 survey of rural fire departments, Ohio's fire service leaders named increased and improved training as a critical need. Training needs persist among Ohio's rural fire departments today; in addition to structural firefighting, Incident Command System, wildland firefighting and wildland fire behavior training are at the forefront of rural fire departments' training needs.

The 1994 survey also identified the need for performance-based firefighter training standards to replace the existing training requirements that were based on the minimum hours of completed training. The minimum-hours-completed standards continue to be the training requirements for Ohio's firefighters, and in the 2003 survey, most rural Ohio fire departments reported participating in this certification program.

## APPENDICES

**Appendix A:** The Ohio Department of Natural Resources, Division of Forestry's "Wildland Fire Protection Area".

**Appendix B: Ohio Regions, by County.**

<b>Northwest</b>	<b>Northeast</b>	<b>Central</b>	<b>Southeast</b>	<b>Southwest</b>
Williams	Erie	Marion	Muskingum	Darke
Fulton	Lorain	Morrow	Guernsey	Miami
Lucas	Cuyahoga	Knox	Belmont	Champaign
Ottawa	Lake	Licking	Monroe	Clark
Defiance	Ashtabula	Delaware	Noble	Preble
Henry	Geauga	Union	Morgan	Montgomery
Wood	Huron	Madison	Perry	Greene
Sandusky	Medina	Franklin	Ross	Fayette
Paulding	Summit	Pickaway	Washington	Butler
Putnam	Portage	Fairfield	Hocking	Warren
Hancock	Trumbull		Athens	Clinton
Seneca	Mahoning		Vinton	Highland
Van Wert	Richland		Meigs	Hamilton
Allen	Ashland		Pike	Clermont
Hardin	Wayne		Jackson	Brown
Wyandot	Stark		Gallia	
Crawford	Columbiana		Adams	
Mercer	Holmes		Scioto	
Auglaize	Coshocton		Lawrence	
Shelby	Tuscarawas			
Logan	Carroll			
	Harrison			
	Jefferson			