Local, County and Regional Needs and Preparedness for Incidents Involving Weapons of Mass Destruction in the Commonwealth of Kentucky

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Local, County and Regional Needs and Preparedness for Incidents Involving Weapons of Mass Destruction in the Commonwealth of Kentucky

Introduction

During its 2002 legislative session, the Commonwealth of Kentucky's General Assembly passed the Antiterrorism Act of 2002 which, in part, calls for an annual report on the state's needs and level of preparedness for responding to terrorist incidents involving weapons of mass destruction (WMD) and other potential terrorist acts. An extract from the legislation can be found in Appendix A. The first annual report is due to the Governor of Kentucky and the Legislature by December 31, 2002; the Kentucky Division of Emergency Management (KyEM) is responsible for preparing it, with assistance from other state agencies. KyEM had previously concluded that, in addition to being important in its own right, increasing the capability across the state for effective response to incidents involving hazardous materials (Hazmat) may also play a key role in responding to the WMD triad of biological, chemical and radiological weapons.

OAI, Inc., formerly affiliated with DePaul University, is a non-profit organization based in Chicago that has been providing Hazmat training in Kentucky for several years. Under its Worker Education and Training Program funded by a cooperative agreement grant from the federal National Institute of Environmental Health Sciences (NIEHS), OAI offers training to several state agencies in Kentucky as well as other employers and non-profit entities in the Midwest and other regions of the country. The training, which includes advanced "technical level" content, is based on federal Occupational Safety and Health Administration standards (see the Code of Federal Regulations 1910.120).

Shortly after September 11, 2001 and the anthrax incidents, Congress provided additional funds for NIEHS to further advance the nation's preparedness for potential future WMD attacks. After successfully competing for a portion of these funds, OAI opened discussions with Commonwealth officials on how OAI might assist the Commonwealth in its WMD preparedness. This quickly led to the joint conclusion that local, county and regional response to WMD incidents will be critical, and that an independent survey of needs and preparedness as perceived at the local level, while not specifically called for in the new state law, would be an important addition to KyEM's knowledge base, not only for inclusion as appropriate in the first annual report, but in KyEM's broader actions as well.

The Survey Process

The detailed survey process is described in the body of this report. In essence, the plan, jointly designed by OAI and KyEM, called for OAI to develop a written survey covering the main issues in WMD preparedness: **communication**, **command structure**, **on-scene capability** (emphasizing equipment and supplies), and **off-site capability** (primarily medical care and laboratory facilities). The survey would obtain quantifiable information as well as opinions, observations and suggestions. A preliminary test of the survey form on KyEM's fourteen (14) Area Managers, in addition to providing useful information from a statewide

perspective, revealed that no changes were needed in the content of the survey; a copy of the survey form is in Appendix B.

Because of funding and time constraints, it was not possible to distribute the survey throughout the state. Instead, four specific areas were selected that reasonably represent the entire state: 1) the far southwestern corner, 2) the far eastern edge, 3) a central portion of the state, and 4) the northern Kentucky region. The specific counties included in each area can be found in Appendix C.

The KyEM Area Managers for the selected regions distributed the survey to individuals in appropriate agencies (public and private) within their respective regions; responses were returned to OAI from late August to mid-September. As hoped, the respondents included individuals affiliated with local, county, and multi-county agencies, private corporations, and others. It included people with emergency management, police, fire, medical and health and other expertise and responsibilities. To encourage frankness, the confidentiality of all responses was guaranteed.

Summary of Quantitative Results

In this Executive Summary, a synopsis of the major quantitative and qualitative results is presented. Overall, at the local and county level, the needs are seen as great indeed, across the board. With a few exceptions, the level of preparedness is seen as quite low. For comparison with statewide data, selected results of the survey of the 14 KyEM Area Managers are also included.

For clarity and consistency, the survey often asked for a judgment as to whether a specific need (e.g., more equipment) was "very high," "high", "medium", "low", or "no need at all." A value of 1-5 was assigned to these categories, that is, a need judged "very high" was given a value of 1, "high" a value of 2, etc. Thus the closer an overall score is to 1.00, the higher that need is seen (or, conversely, the lower the level of preparedness).

The table below shows the average for all 14 KyEM Area Managers compared to the average for all local responses.

Table 1. Summary Comparison of State and Local/County Responses

Issue	KyEM Responses	Local Responses
Communication	1.99	2.00
Command Structure	2.04	2.11
On-Scene Needs	1.50	1.88
Off-Site Needs	1.71	1.82

For two of the overall categories, **communication needs** and **understanding of incident command** systems, the results of the two groups were basically identical, and for a third, **off-site needs** such as hospitals and labs, the perceptions were very close. The overall need in all three of these areas was jointly seen as "high" by both state and local/county respondents.

However, for **on-scene needs** (covering a full range of equipment and supplies), there was a major difference. At the local level, overall the need in the four areas was clearly seen as "high" (1.88). However the need across the entire state, as seen by the KyEM Area Managers, was seen as significantly greater, exactly halfway between "very high" and "high" (1.50). The data themselves do not explain this difference. One possibility is that KyEM Area Managers used as their yardstick the comprehensive equipment and supply list developed by KyEM and other state agencies (notably the state health agency); this full range of equipment and supplies may not yet be well known at the local and county level. Another possibility is that if additional, more rural areas had been included with the original four, the clearly greater need in such areas might have led to a higher ranking of the need for equipment and supplies. There may be other possible explanations as well, but at the least, the reasons behind this significant difference should be explored further.

An examination of the detailed results from the four specific areas reveals other more detailed patterns, as shown in the full report.

Summary of Qualitative Results

Almost all who responded to the survey added in their own words knowledge, insights, and examples from their own experience. This was particularly valuable for issues that the survey treated qualitatively. Many such observations and even direct quotes from the survey can be found in the main report; here are some overall trends.

- **Training:** this need is virtually unanimously recognized at the local level. Much stress was laid on the need for continuously updating training, and even more on the need for joint training between all agencies and organizations that might respond to WMD incidents. It was also recognized that such cross training for WMD incidents will pay benefits in the local response to the other more expected and common emergencies and disasters. The practical difficulties involved in training volunteers were often cited, along with a call that, to the greatest possible extent, training be provided at local/county locations, rather than in more distant state facilities and out-of-state locations.

  At the same time, there was a good, though not comprehensive awareness, of the relevant training now available, including that offered by or through various state agencies (e.g., KyEM, the State Fire Marshall, the State Health Department, etc.) as well as by federal agencies (e.g., the US Department of Justice, US military installations, etc.). State efforts to publicize available training opportunities have clearly been effective, but may need to be expanded to specifically emphasize training available on WMD topics. A good percentage of respondents had also taken home study courses, and an even greater share was planning to take additional training of all types in the near future. A surprisingly high number were themselves already qualified as trainers in one or more areas (e.g., Hazmat). The need for all types of training was stressed—traditional classroom, tabletop, and especially joint field exercises.

  A fairly frequent observation was that local health organizations (including hospitals, local and county health departments, etc.) had not yet been effectively involved in training specifically related to WMD preparation, and therefore should become involved in these training efforts.

- **Communication:** The importance of the 911 dispatch system was widely recognized. However, some surveys indicated that the competence and skills of dispatch personnel to communicate information accurately between different organizations and disciplines were not adequate, even for more common situations (e.g., between law enforcement or fire agencies and rescue teams). In addition, the problem of incompatible equipment/frequencies was almost universally mentioned. In many parts of the state, this is complicated by topography, which in many areas can render otherwise compatible radio equipment ineffective, as well as decreasing the utility of other communication equipment (e.g., cell phones). In general, communication needs were seen as greatest in the earliest stages of response to a WMD incident (original identification and first response), not only for traditional response agencies (police, fire, emergency medical teams) and also others (hospitals, for example), but not as much of a problem in subsequent stages (e.g., cleanup of a contaminated facility).

- **Command Structure** and **Training:** Firefighting organizations were often cited as the most familiar with incident command/unified command procedures, in addition to other pockets of knowledge and even experience with these matters. However, many individuals stressed the need for improved knowledge of command structure protocols, including specifically the need for agencies not only to train together, but to decide in advance "who will be in charge", and at what stage, during any terrorist event, or, for that matter, other emergencies.

- **On-Scene Equipment and Supplies** and **Training:** This was also often specifically recognized, often as a "chicken and egg" issue. Some stated that training should not be provided until equipment was available in the locality or region; others suggested that since equipment might be available from adjacent regions, training should proceed even before equipment was available within a given region. A number of respondents specifically recognized that the regionally staffed and equipped Hazmat teams, that KyEM is working to establish in several locations, would play an important role in WMD response. By the same token, surveys from the areas that already have one or more Hazmat teams in place almost universally recognized these teams as an essential element in WMD response activities.

- **Off-Site Response Needs and Capabilities:** In addition to the points already made on the need to involve medical installations more fully in all phases (e.g., advanced planning, training exercises, the communications loop, etc.), survey responses from all four areas noted that a WMD event involving even dozens of exposed individuals would quickly overwhelm existing medical installations unless other contingencies (for example, decon, field medical facilities, etc.) were put in place in advance. A specific need for improved regional plans and mutual aid agreements between medical institutions was often cited.

- **Laboratories:** Those who commented specifically on labs generally endorsed the idea of regional labs, as opposed to local laboratory capability. Several individuals specifically supported the current State Health Department efforts to increase the number and broaden the distribution of qualified labs across the state.

Conclusion

The survey, while not comprehensive, nonetheless gives an informed first picture of the needs and level of preparedness as seen by a diverse, knowledgeable and dedicated group of individuals who would be on the front line if there ever were to be any type of WMD incident within the borders of the Commonwealth of Kentucky. Originally KyEM and OAI had hoped for a "snapshot" as the result of this process. The detailed numerical results, the qualitative information obtained, and the trends identified suggest that instead of a snapshot, the result is the start of a detailed photo album—not yet complete, to be sure, but providing more insights than originally expected.

At the same time, neither OAI nor KyEM is aware of any other openly published results of any other statewide effort that has specifically attempted to identify WMD needs and levels of preparedness as perceived at the local and county level. Until other such work is completed, it appears that this report, conducted in a state with a diverse mix of urban, suburban, and rural population zones, industrial and agricultural areas, major land and water transportation corridors, air transportation hubs, and diverse public and private utility installations—in short, a state that is like many others in the nation—provides important insights not only about Kentucky, but about the nation as a whole.

Full Report:
Local, County and Regional Needs and Preparedness for Incidents Involving Weapons of Mass Destruction in the Commonwealth of Kentucky

*Glenn Paulson, Ph.D.**

Introduction

Earlier this year, the Commonwealth of Kentucky's General Assembly passed emergency legislation, the Antiterrorism Act of 2002. One specific feature calls for the preparation by the Kentucky Division of Emergency Management (KyEM) of an annual report on the needs and level of preparedness at the state level for responding to terrorist incidents involving weapons of mass destruction (WMD) and other potential types of terrorist acts. An extract from the legislation can be found in Appendix A; the first annual report is to be submitted to the Governor of Kentucky and the Legislature by December 31, 2002.

Previous analysis by KyEM had led to the conclusion that, in addition to being important in its own right, increasing the capability and competence for local and county response to incidents and accidents involving hazardous materials (Hazmat) can play a key role in developing a more comprehensive, state-wide capability for response to the now-well recognized WMD triad of biological, chemical and radiological weapons. While other parts of the country, and indeed the federal government, are beginning to adopt the same position, Kentucky is clearly one of the first states to explicitly recognize this.

For several years, OAI, Inc., a non-profit organization based in Chicago, has been providing Hazmat training assistance to the Commonwealth of Kentucky, first initiated through the State Fire Marshall's office. OAI, which has been in existence for 26 years, was originally affiliated with Northern Illinois University and later operated under the auspices of DePaul University for five years. To better serve its constituents in the Midwest and other parts of the country, OAI was reconstituted in 2000 as a freestanding non-profit corporation. Currently OAI works with several Kentucky state agencies to provide advanced "technician level" Hazmat training to appropriate target audiences in the state, including first responders, and to develop a cadre of trainers within Kentucky who can, in turn, train others. OAI has conducted similar efforts in other states as well. Its Hazmat effort has been federally funded by the National Institute of Environmental Health Sciences (NIEHS), and in particular, the NIEHS Worker Education and Training Program. The training courses OAI has conducted in Kentucky and elsewhere are delivered in accord with federal requirements established by the US Occupational Safety and Health Administration, which can be found in the Code of Federal Regulations (CFR) 1910.120.

In the aftermath of the September 11, 2001 terrorist attacks and the anthrax incidents of September and October 2001, Congress provided additional funds for NIEHS to further advance the nation's preparedness for potential future attacks involving WMD. OAI successfully sought a portion of these additional funds, and opened discussion with

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* The author, a member of the Board of Directors of OAI, Inc., a lso serves as an advisor to governmental and non-governmental organizations on WMD, Hazmat, and other issues. Appendix E provides contact information for those who wish more details on the results of this survey.

Commonwealth officials on how OAI might further assist the Commonwealth as it grappled with the new potential of use, within the US itself, of WMD agents and devices.

These discussions quickly led to the joint conclusion that local, county and regional response to WMD incidents will be critical, and that an independent survey of needs and preparedness as perceived at the local level, while not specifically called for in House Bill 258, would be an important addition to KyEM's knowledge base, not only for inclusion as appropriate in the first annual report, but in KyEM's broader actions as well.

The Survey Process

The plan, jointly designed by OAI and KyEM, was for OAI to develop and conduct a written survey covering four main issues in WMD preparedness: communication, command structure, on-scene capabilities (emphasizing equipment and supplies), and off-site capabilities (primarily medical care and laboratory facilities). The survey would obtain information that could be quantified, as well as self-generated opinions, observations and suggestions originated by those taking it. The survey was then field tested by providing it to KyEM's 14 Area Managers, both to determine if the survey itself needed revisions and also to obtain a statewide picture of the local/county level of needs and preparedness. This first step was completed in late August; the results of the first group of surveys are also included in this report. The KyEM/OAI consensus was that no revisions were needed in the survey before it was used more widely; a copy of the survey form is in Appendix B.

Because of time and funding constraints, OAI and KyEM determined that conducting a detailed survey in all areas was not possible. Instead, four areas were selected that reasonably represent the entire complexity of the state. These are: 1) the far southwestern corner of the state (Area 1), 2) the far eastern edge of the state (Area 9), 3) a central portion of the state (Area 13), and 4) the northern Kentucky region (Area 7). The specific counties included in each Area, along with a thumbnail description of each Area can be found in Appendix C, along with a map showing where they are.

The four appropriate KyEM Area Managers circulated the survey beginning in late August to individuals in appropriate agencies (public and private) in each region. Written responses were to be returned via regular mail, e-mail, fax, and by hand either to Area Managers for forwarding to OAI or directly to OAI. To help increase the response, to gather additional information first-hand, and to make available preliminary results, the author (who is knowledgeable about WMD issues) attended a meeting organized by KyEM Area Managers in each of the four areas the week of September 9. These meetings, though organized on short notice, were attended by a diverse group of individuals, many of whom had already submitted their surveys to OAI. The discussions of these groups both confirmed the overall patterns of the preliminary results and provided useful additional insights regarding local perceptions and concerns. Surveys that were received by OAI on or before September 20 are included in the results.

A total of fifty-three (53) responses were received, a relatively good response number given the short schedule for this effort. Fifty (50) of the 53 responses contained individually added comments and suggestions, often quite extensive. A few respondents attached technical references, relevant publications, information on activities in other states, etc. The breakdown of responses by Area can be found in Appendix D. As hoped, the respondents included

individuals affiliated with local, county, and multi-county agencies, private corporations, and others. It included people with emergency management, police, fire, medical and health and other expertise and responsibilities. Both the author and OAI wish to acknowledge with thanks the diligent work of the four Area Managers and the dozens of individuals who responded to the survey and attended the meetings held in their Area.

To encourage frankness in the responses, all respondents were informed that their answers would be confidential. The written survey forms, with any personal identification removed, and the computer spreadsheets used to analyze the data, also without any such identification information, are being kept in the OAI offices in Chicago for potential future use.

Summary of Survey Results

In this section, summaries of the major quantitative results are presented. Complete quantitative results can be found in Appendix D.* At the local and county level, the needs are seen as great indeed, across the board. With a few exceptions, the level of preparedness is viewed as quite low. Strictly speaking, comparing the overall average response for the state as a whole (as judged by the 14 KyEM Area Managers) to the responses from the four areas surveyed in depth is only partially justified. Nonetheless, such a comparison, more like "red apples to green apples" than "apples to oranges", did yield one major surprise.

For clarity and consistency, the survey frequently asked each respondent to provide a judgment as to whether the need in their region on a given topic (improved communication, more equipment of a specific type, etc.) was "very high", "high", "medium", "low", or "no need at all." This is a common approach for surveys of this type. For quantitative analysis, a value of 1-5 was assigned to these categories, e.g., a need that was classified as "very high" was given a score of 1, "high" a score of 2, etc. Thus the closer a number is to 1.00, the higher is that need or, conversely, the lower the level of preparedness.

Before explaining the details, some of the most important survey results can be expressed using both these terms as well as numbers. The table below provides the overall results.

Table 1. Summary Comparison of State and Local/County Responses

Issue	KyEM Responses	Local Responses
Communications	1.99	2.00
Command Structure	2.04	2.11
On-Scene Needs	1.50	1.88
Off-Site Needs	1.71	1.82

For two of the overall categories, **communication needs** and **understanding of incident command** systems, the results of the two groups were basically identical, and for a third, **off-site needs** such as hospitals and labs, the perceptions were very close. The overall need in all three of these areas was jointly seen as "high."

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* A preliminary statistical analysis of the data revealed that it was not appropriate or meaningful to conduct such analyses in depth because of the size of the sample. A much more extensive (and expensive) project would be needed to justify advanced statistical evaluations. Instead, as a rule of thumb, a difference of 0.30 between two averages was judged to be an important difference that, at the least, deserves detailed evaluation and analysis in the future.

However, for **on-scene needs** (covering a full range of equipment and supplies), there was a major difference. At the local level, overall the need in the four areas was clearly seen as "high" (1.88). However the need across the entire state, as seen by the KyEM Area Managers, was seen as significantly greater, exactly halfway between "very high" and "high" (1.50). The data themselves do not explain this difference. One possibility is that KyEM Area Managers used as their yardstick the comprehensive equipment and supply list recently developed by KyEM and other state agencies (notably the state health agency); this comprehensive range of equipment and supplies may not yet be well known at the local and county level. Another possibility is that if additional, more rural areas had been included with the four surveyed, the clearly greater need in such areas might have led to a higher ranking of the need for equipment and supplies. There may be other possible explanations as well, but at the least, the reasons behind this significant difference in perceived needs should be explored further.

Examination of the pattern of overall results for the four major issues for each of the four areas reveals some additional differences on needs/preparedness across the state, as shown in Table 2.

Table 2. Overall Comparison on Major Issues by Area

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
Communications	1.99	2.00	1.94	1.99	1.95	2.24
Command Structure	2.04	2.11	2.00	2.37	1.86	2.15
On-Scene Needs	1.50	1.88	1.90	2.20	1.55	1.96
Off-Site Needs	1.71	1.82	1.44	2.57	1.40	1.69

Regarding **communications**, three areas are quite close together in judging their need to be high, while Area 13, the only one of the four that is part of the Chemical Stockpile Emergency Preparedness Program (CSEPP) program, perceives itself to be slightly better off. Perhaps not surprisingly, regarding **command structure,** the two more urban areas (7 and 13), with a lower reliance on volunteer first responders, perceive their knowledge base to be somewhat better than the two more rural areas. More dramatic, one of the rural areas sees its needs for **on-scene equipment and supplies** as serious as do the KyEM managers for the state as a whole, while the other three see themselves as somewhat better prepared. Finally, **off-site needs** demonstrated the widest spread across the four areas. The two rural areas saw themselves least prepared, and judged their situation much more serious even than the state-wide average, and even one urban area saw its needs as between high and very high. Area 7, the remaining urban area, which covers northern Kentucky, saw itself as having by far the lowest level of need, that is, the highest relative level of preparedness of any of the four areas.

Communications: Detailed Quantitative and Qualitative Results

Recalling that the overall judgment of the Area Managers and the local/county responses on communications was basically the same, it is worth examining to see if any differences exist regarding needs and capabilities in this area across the entire range of communications needed in response to WMD incidents. The survey (see Appendix B) asked for views on several specific stages of communication during an incident: original identification, between

first responders, and with later responders (e.g., cleanup workers), general planning for communications with the public during a suspected or actual WMD incident, and the overall current state of communications between local and state agencies. Table 3 restates that overall result and shows that differences exist across the state.

For interpretation, recall that Area 1, the southwestern corner, and Area 9, the far eastern edge, are predominantly rural, though with some pockets of industry, significant transportation corridors, and some urban centers. Area 7, the northern Kentucky area (a significant portion of the greater Cincinnati metropolitan area) and Area 13 in the central part of the state, are much more developed with many urban centers, significant industrial concentrations, transportation corridors and installations, etc.

Table 3. Detailed Summary for Communication Issues

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
Overall Communications	1.99	2.00	1.94	1.99	1.95	2.24
Original Identification	1.79	2.00	1.94	1.96	2.06	2.00
First Response	1.93	2.07	2.00	1.95	2.21	2.13
Later Response	2.14	2.13	2.57	2.10	1.72	2.57
Public Information Plan	2.29	1.95	1.64	2.10	1.71	2.38
Communication from Local to State Agencies	1.79	1.89	1.57	1.74	2.08	2.13

The consensus regarding communication at the stage of *original identification* of a potential incident and communication among *first responders* is fairly uniform across all four areas (scores generally all near 2.00)—the need for improvement is high, but not very high, an opinion shared overall by the KyEM Area Managers across the state. However, there is a divergence of opinion regarding communications among *later responders*, such as cleanup workers. Two areas (one rural, one more urban) indicated the situation was relatively good, a need for improvement that was closer to a medium need, while the other two saw more need for improvement. There was different spread, regarding the status for local plans for providing information to the public. One urban area saw itself as better prepared than the other three on this score. Perhaps the CSEPP activities in that area are a major reason for this, and this could be a source of useful advice for other parts of the state.

It is worth noting that the need for improved communication from the local/county level to state agencies was seen as very important in two areas (one rural, one urban), and the average across all areas (1.89) showed this as one of the highest ranking specific communication needs—an opinion shared by the Area Managers.

Qualitatively, several responses noted that both for original identification and first response to an incident, incompatible radio systems between different agencies were clearly a hindrance to effective, timely response. The survey defined "first responders" to be law enforcement, firefighters, and emergency medical teams, and then asked who else should be in the "communications loop" at that stage. Even with the definition of first responders implying the inclusion of 911 dispatch centers, several forms specifically mentioned the need to explicitly include the 911 system.

A vast majority of the forms identified a diverse array of public agencies and, less often, private organizations, that should be informed, depending on the specific type of incident. These included (no priority is implied in this list) all those in the following table:

Table 4. Agencies, Organizations Identified As Necessary to Inform Early

▪ Local, county, regional and state emergency management agencies	▪ Local, county, regional and state health and agencies; coroners	▪ Medical institutions (medical centers, hospitals, clinics, etc.); primary care physicians
▪ City, county and state street/highway departments (for traffic control)	▪ Transportation companies (for transporting victims, response personnel, others at risk, such as the home-bound)	▪ Public and private utilities (water supply and treatment and electric utilities in particular)
▪ The Red Cross and similar organizations	▪ US Military installations in the vicinity	▪ Private companies (especially those with Hazmat teams and equipment)
▪ Schools (for potential use of buses as well as facilities)	▪ Ambulance companies (public and private)	▪ Elected officials (mayors, county officials)
▪ Ham radio operators	▪ Regional Hazmat Team (where one exists)	▪ Agribusiness organizations

Regarding communication during a later phase of the incident (e.g., cleanup of contaminated structures), the few who commented on communication needs saw this as a fairly routine aspect, handled by normal on-site communication equipment, such as walkie-talkies, often used in non-WMD situations. Even though no specific question was asked about this, one respondent specifically identified the need to have available a list of companies/contractors and workers pre-qualified and already equipped to respond to various types of WMD agents/incidents.

Many responses, from both urban and rural areas, noted that good communication systems currently exist between local and county law enforcement agencies, fire agencies, and emergency medical response units. Other reactions were at the opposite end of the spectrum, for instance, "If there are agencies or organizations in my area with very high communication skills, I am not aware of them" (from a rural area). The observations on links to and from emergency dispatch centers (i.e., 911 centers) were mixed—good in some areas, not good in others. In a few areas, the KY State Police Post played a major role in inter-agency communications. Many commented that in their part of the state, the local topography interfered with the smooth operation of even the most modern radio equipment. Several observed that in their region, all types of communication (not just radio) were substantially better than in the past based on direct personal interaction (including training together, serving on regional emergency planning task forces, etc.) between people from various agencies; one individual specifically noted that "no egos were allowed." Budget constraints were often mentioned as a reason that communication equipment was not up-to-date.

In one of the urban areas, all the acute care hospitals have single radio frequency on which they can communicate in any disaster situation. This was the only example in the survey of this capability. Another response wove communications into a broader fabric by stating: "the key to excellent communications is good communications training, exercises, and a well established command and control system."

The need for improved plans for communicating with the public during a WMD event resulted in what was the most diverse group of responses, ranging from the need being identified from "very high" to "low" (that is, ranging from a value of 1 to 4—even within the same area). Overall, it does not appear that this feature has yet been a significant feature of specific local/county attention, not surprising given the very recent recognition that WMD agents may be used within the state's borders.

Given the fact that there are clearly some excellent examples of communication systems in operation in parts of the state, it appears that a specific project to define the successful "lessons learned" in these areas could be of great benefit in other parts of the state The detailed questions on the understanding of command structure and incident command systems, both between traditional first responders (firefighters, law enforcement personnel, and emergency medical technicians) and between those three groups and other responders (e.g., medical personnel, cleanup contractors) are shown in the next table.

Command Structure: Detailed Quantitative and Qualitative Results

The detailed questions on the understanding of command structure and incident command systems, both between traditional first responders (firefighters, law enforcement personnel, and emergency medical technicians) and between those three groups and other responders (e.g., medical personnel, cleanup contractors) are shown in the next table.

Table 5. Detailed Summary for Command Structure Issues

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
Command Structure	2.04	2.11	2.00	2.37	1.86	2.15
First Responders	2.07	2.10	2.00	2.26	1.83	2.38
Other Responders	2.00	2.13	2.00	2.47	1.89	1.93

The variation among the four areas can generally be attributed to the rural/urban difference between them. The two more rural areas (1 and 9), which generally rely more on volunteers than the other two, see a greater need for training and practice in incident command skills, but even the two urban areas see their future need on this score as closer to "high" than "medium".

Qualitatively, in both rural and urban areas, firefighting agencies were regularly cited as having the best understanding of command structure/incident command systems in a given area, though areas that relied on volunteers have difficulty keeping their ever-changing roster of personnel all trained. Not surprisingly, individuals with prior military experience often noted that this experience was valuable preparation for their current duties that required multi-agency response. Many respondents to the survey observed that joint training on command and control, and also the real-world multiple agency response experience during the anthrax scare of autumn 2001, showed that even the most fundamental training and exercises, if done with different agencies/disciplines participating, paid very rapid dividends. Regarding command structure training, one respondent stated: "We have just started training in this area and it's easy to realize that if we work together, it gets better and better. This is just something we did not work on in the past." Said another: we need "more team training designed toward

providing knowledge of the capability and limitations of other agencies." And yet a third: "if anyone individually is not getting enough training in this area (of command structure), they are living under a rock. More inter-agency training is always useful, for understanding your counterparts' roles."

Several people commented on the critical importance of having a central command post that is consistently and continuously occupied by senior officials from all responding agencies. Others, in this context, noted that there was no mobile command post available to them, and that fixed command locations (e.g., at 911 dispatch centers) might not be as effective as would be needed.

One hospital noted that recently instituted drills that also involve outside response agencies had helped all understand each other's roles, though formal command structure responses seem not to have been explicitly involved. Many others, however, noted that medical facilities in their regions were not yet well linked to incident preparation planning of any sort, including command structure knowledge and training.

There was a wide-spread recognition that improvements across agencies in the understanding of command structure, triggered by the current focus on the potential of WMD attacks, would also pay immediate benefits in the effectiveness of multi-agency response in more traditional incidents, such as fires, floods, tornadoes, chemical spills, and other emergencies that are, unfortunately, already features of Kentucky life. In other words, on this specific issue, improvements triggered by any single concern will bring broad benefits to the state.

With all that said, a number of successful examples of inter-agency command structure responses in both urban and rural situations were identified in the survey, with Hazmat incidents and fires being the most common types. However, most of these did not involve the full range of agencies that were identified earlier as being needed in a WMD event. This may be another area where careful selection and publicizing past "success stories" from within the state could help other localities quickly improve their competence on command and control strategy and practice.

On-Scene Equipment and Supplies: Detailed Quantitative and Qualitative Results

Overall, of the four major areas covered in the survey, this is the one where the statewide perception (as expressed by the overall view of all KyEM Area Managers) differed most dramatically from that at the local/county level, as the detailed in table 6.

Recall that from a state-wide perspective, the overall need, calculated at 1.50, is dead center between "high" and "very high", while the overall need seen in the four areas is much closer to "high" (at 1.88). The numbers themselves do not explain the reason for this difference. One possibility is that KyEM Area Managers used as their yardstick the comprehensive equipment and supply list developed by KyEM and other state agencies (notably the state health agency); the full range of equipment and supplies identified at the state level as necessary may not yet be well known at the local and county level. Another possibility is that if additional rural areas had been included with the chosen four, the clearly greater need in rural areas of the state might have led to a higher ranking of the need for equipment and supplies. There

may be other possible explanations as well, but at the least, the reasons behind this significant difference should be explored further.

Table 6. Detailed Summary for On-Scene Equipment and Supplies

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
On-Scene Equipment & Supplies	1.50	1.88	1.90	2.20	1.55	1.96
Personal Protective Equipment	1.21	1.69	1.57	2.00	1.28	2.00
Decontamination Equipment	1.36	1.94	1.86	2.37	1.44	2.14
On-scene Communication Equipment	1.86	2.06	2.43	2.05	1.89	2.14
On-scene Medical Equipment	1.79	2.06	2.50	2.42	1.71	1.86
Field Monitoring Equipment	1.29	1.64	1.17	2.16	1.41	1.67

Note the wide range among the five specific sub-categories as judged by the Area Managers and the Local/County average. Both groups, as a whole, see the needs as greatest for **personal protective equipment** (PPE) and **field monitoring equipment**, and both agree that the level of need is relatively lower for **on-scene communication equipment** and **on-scene medical equipment**. However, the two groups differ on the relative need for **decontamination equipment**; Area Managers see this need on a par with PPE and monitoring equipment, while local/county respondents see this need relatively lower, close to that of communication and medical equipment. This may reflect better availability of decon equipment in some localities than is known at the state level, or it may reflect a lack of knowledge at the local level of the range and type of decon that is needed across all types of WMD agents. This specific difference in perception merits attention as preparedness efforts advance.

It is noteworthy that one rural area saw its overall equipment and supply needs (1.55) as virtually identical to the state estimate (1.50), while one urban area (which has a functional Hazmat response capability in place) judged its overall readiness to be the best of the group (2.20).

Within the specific categories of equipment and supplies, there are some intriguing differences among the four local areas. Some may be the result of the relatively small sample size, but others may reflect real differences across the state. For example, the two more urban areas (7 and 13) see themselves as significantly better prepared than the two rural areas on **personal protective equipment** (PPE) and **decontamination equipment** (decon), though neither ranked their remaining needs as "low". This is not surprising; a typical comment from a response from a rural area is "We have no decon equipment in our county."

However, one of the rural areas gave itself scores that showed a relatively lower need for on-scene communication equipment (2.43) and on-scene medical equipment (2.50) than all the

other areas, in some cases by a very large margin. Perhaps there are mechanisms and approaches in place in that specific area that could be adopted in other rural areas of the state.

Before turning to very specific observations, many responders, both in this section of the survey and others, recognized the overall major importance of now-traditional Hazmat approaches in dealing with WMD incidents. The strikingly perceptive observation was this: "In my area we have a great Hazmat team. I look at terrorist incidents as hate-filled Hazmat calls. Our current teams need more training in the terrorist part of the Hazmat call."

Specifically regarding **PPE**, even some parts of the more urban areas report a great need. From one county in an urban area came the observation: "There is very little if any PPE to protect first responders in the first hour of an incident", and from another county in the same area: "Some minimum level of PPE should be issued to first responders"— implying that the first responders do not currently have any at all. Approximately half of the responses contained a specific observation or comment along these same lines.

The relationship between PPE and training, and also the difference between a typical Hazmat incident and a major WMD incident, was recognized in this response: "Access to proper PPE is vital. However, without proper training on how to use the PPE, when to use the PPE and the limits of the PPE, the equipment is useless. Currently there are two fully equipped Hazmat teams in the county. These teams have enough equipment for limited incidents but would be quickly overwhelmed in a WMD incident."

Observations on the need for and current availability of **decon equipment** mirror the picture for PPE. From a survey from one of the two rural areas: "Currently there is only enough decon equipment to support Hazmat technician operations for the Hazmat teams. We are currently working on mass emergency decon procedures for fire departments who initially respond to an incident where numbers of people have been exposed to a substance, but there is no definitive decon system for large numbers of people." From another survey, this observation: "Not aware of any decon equipment or supplies. Local hospital has water hose and kiddie pools."

A few responders showed that they had given considerable thought to this issue. The most detailed example is this: "Mass decon of contaminated patients must be done outside of a hospital. Equipment to set up expedient decon on nearby parking lots or close to the incident scene is needed. Being able to decon 200 persons should be a benchmark minimum. Also needed are inflatable shelters (to do the decon in and provide privacy), portable water heaters (cold tap water would cause some victims to refuse decon, I'm afraid), and a portable water source (hydrants aren't always available, and a large number of fire departments use class A foam already mixed in the tanks on fire apparatus)."

The situation regarding **on-scene communication equipment** will not surprise the reader because of the earlier analysis on communication in general, where it was reported that many localities do not have or even have ready access to a mobile command center. Incompatible radio frequencies in the various responding agencies that arrive with their own equipment were often cited. The current role of mobile/portable radios and cellular phones (and their limitations) was recognized by several people. But there are some bright spots—one brief response from a rural county agency demonstrated both what they had and what they were

looking forward to: "Currently we have adequate equipment for on scene response locally. However, other technologies for incident management such as field fax and internet are only now becoming available."

Another responder, from a relatively well-equipped urban county, provided a general prescription for what is needed: "Ideally (on-scene communication equipment) should be mobile and come with trained personnel. (This is) critical for focusing on the incident without other competing distractions, and coordinating activities of diverse agencies with competing roles." Note the specific recognition of having not only the right physical equipment but also the right people to operate it.

The current need for **on-scene medical equipment and supplies**, seen generally as high, was emphasized in several responses. Among them: "Our needs exceed what we have access to", a point made by many respondents. Several recognized the need for regional medical assistance specifically for WMD incidents, as in the comment: "Medical support equipment for normal response is adequate. However, in a large scale incident, medical support equipment and personnel will be needed from other agencies, including mutual aid counties."

Regarding **field monitoring equipment**, by far the typical response was "none available". The notable exception was from a single response from one urban area, which stated "We are fortunate to have much of this available in our area." Some even doubted whether appropriate equipment for the quick measurement in the field of chemical and biological agents even existed. Though many recognized that devices did exist for field detection of radiological agents, their availability in most areas ranged from very low to not at all. In a theme familiar by now, many responses noted that even if such equipment were available in their region, training to use it properly was just as important as the equipment itself.

Off-Site Response Capabilities: Detailed Quantitative and Qualitative Results

For this area, which focuses on medical facilities (such as major medical centers, regional hospitals, etc.) and laboratories capable of detailed analysis for chemical, biological and radiological agents, the overall perception of the needs was very similar between the Area Managers and local/county people. However, there were noteworthy differences among the four areas. Both aspects are shown in the detailed table below.

Table 7. Detailed Summary for Off-Site Response Capabilities

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
Off-Site Response Capabilities	1.71	1.82	1.44	2.57	1.40	1.69
Medical Institutions	1.71	1.87	1.71	2.67	1.35	2.00
Laboratories	1.71	1.78	1.17	2.47	1.44	1.38

Overall, the level of need for improvement for both types of **off-site** facilities is seen as very similar. However, one of two more urban areas saw the need for improved response both in

its **medical facilities** and **laboratories** as lower by far than other areas, about mid-way between medium and high (2.57 and 2.47 respectively). It is interesting that the other urban area did not see itself as well prepared with lab capability (very similar to the two rural areas) even though this is the area where the primary state lab is located. In a now-familiar pattern, the two rural areas see both of these specific needs as being at least as great, if not significantly greater than those of the urban areas.

Qualitatively, a small number of responses noted that **medical institutions** in their area were active participants in joint planning, exercises, etc., and that some had developed decon facilities, obtained PPE, etc.; far more common was the observation that the hospitals were not yet actively involved. The necessity for such involvement was widely recognized; one specific comment recognized this need for a two-way relationship: "I think both hospitals (in our county) should assist with our planning and we with theirs. They need to be more involved in a large response, with a triage team that can go to a scene, should the need arise." Many responses noted that the area medical institutions would be quickly overwhelmed if there were truly a major incident involving hundreds or even dozens of people, and specific observations about inadequate PPE and facilities for decon were also common.

Some recognized that with improvements, hospitals could offer other services, such as lab analysis for biological agents. A response from one urban center reported that hospital pharmacies, retail pharmacies and others had formed an Anti-Terrorism Task Force to consider issues such as location and distribution of pharmaceuticals that might be needed in response to a WMD incident, such as antibiotics for anthrax or vaccine for smallpox.

Because of the experience with the anthrax scares that many in the survey had in the last few months of 2002, **laboratory capabilities** garnered many comments. One of the pithiest, from a far corner of the state: "We need a lab closer than Frankfort", a sentiment shared by many. More generally, many observers endorsed the idea of increased regional laboratory capabilities, rather then extensive local ones. Several specifically commented on and strongly endorsed the current efforts of the State Department of Public Health to bring several existing labs in the state which are technically capable of analyzing for biological agents, but which are not officially "certified" to do so, up to the standards necessary to become part of the state WMD response capability. These could include government, university, and private labs. There was some suggestion that one or more mobile labs be developed and available for use in more remote areas of the state, and the recognition that local response personnel would need to be trained in proper field sampling techniques. Finally, there was a general call for an overall increase in the capacity for lab analysis and especially for more rapid turnaround times.

The Importance of Training; Qualitative Results

Almost all who responded to the survey in their own words added knowledge, insights, and examples from their own experience on the subject of **training**. This was particularly valuable for issues that the survey treated qualitatively. The need for training on WMD response in particular is virtually unanimously recognized at the local level. Said one responder from a rural area: "Individuals must be trained and understand their role in a terrorist or WMD incident. Individuals must also understand the overwhelming need to prepare for these types of incidents. There exists in some elements a sense of apathy in preparing for this type of incident; these elements almost always say 'it won't happen here.'"

Much stress was laid on the need for continuously updating training, and just as much on the need for joint training (including mock exercises) between all agencies and organizations that might respond to WMD incidents. Many also noted that such cross training for WMD incidents will pay benefits in the local response to the other more expected and common emergencies and disasters. Often cited were the practical difficulties involved in training volunteers with a call that more training be provided at the local level, at times and places convenient for volunteers.

At the same time, there was a good, though not comprehensive awareness of the relevant training now available, including that offered by or through various state agencies (e.g., KyEM, the State Fire Service, the State Public Health Department, etc.) as well as by federal agencies (e.g., the US Department of Justice, US military installations, etc.). State efforts to date to publicize available training opportunities have clearly been effective, but may need to be expanded to specifically emphasize training available on WMD-related topics.

A good percentage of respondents had also already taken home study courses; an even higher percentage, even before taking the survey, had scheduled additional WMD and other training for themselves in the near future, primarily to fill gaps in their current knowledge. The courses ranged across the entire spectrum of issues covered in the survey, though courses on command structure and Hazmat were the most common. A substantial number of responders were themselves already qualified as trainers in one or more areas (e.g., Hazmat). The need for all types of training was stressed time after time—traditional classroom, tabletop, home study, etc, but especially joint field exercises. A fairly frequent observation was that local health organizations (including hospitals, local and county health departments, etc.) had not yet been effectively involved in training specifically related to WMD preparation, and therefore should become involved in these training efforts.

Regarding **communication and training**, while the importance of the 911 dispatch system was widely recognized, some surveys indicated that the competence and skills of dispatch personnel to communicate information accurately between different organizations and disciplines were not adequate, even for more common situations (e.g., between law enforcement or fire agencies and rescue teams). A number of surveys specifically recommended better training for those who staff the dispatch centers.

Regarding the interface between **command structure** and **training**, firefighting organizations were often cited as the most familiar with incident command/unified command procedures, and there were other pockets of knowledge and even experience with this area. However, many individuals stressed the need for improved knowledge of command structure protocols, including specifically the need for agencies not only to train together, but also to decide in advance "who will be in charge" and at what stage during any terrorist event, or for that matter, in other emergencies.

The interface between **on-scene equipment and supplies** and **training** was also often specifically recognized, often as a "chicken and egg" issue. Some stated that training should not be provided until equipment was available in the locality or region; others suggested that since in an actual incident equipment might be available from adjacent regions, training should proceed even before equipment was available within a given region. A number of respondents specifically recognized that the regionally staffed and equipped Hazmat teams, that KyEM is working to establish in several locations, would play an important role in WMD response. By the same token, surveys from the areas that already have one or more trained Hazmat teams

in place almost universally recognized these teams as an essential element in WMD response activities.

On the relationship of **off-site response needs and capabilities** and **training**, the point has already been made regarding the need to involve medical installations in advanced planning, including training exercises. There appear to be several successful examples that could be used to inspire improvements in other parts of the state.

Conclusion

The survey, while not comprehensive, nonetheless gives an informed first picture of the needs and level of preparedness as seen by a diverse, knowledgeable and dedicated group of individuals who would be on the front line if there ever were to be any type of WMD incident within the borders of the Commonwealth of Kentucky. KyEM and OAI had originally hoped for a "snapshot" as the result of this project. The detailed numerical results, the qualitative information obtained, and the trends identified suggest that instead of a snapshot, the result is more like a photo album—not yet complete, to be sure, but far more illustrative than a single photo. In addition to helping KyEM and other state agencies in their preparations, there is a diverse set of local/county success stories that can serve as educational if not inspirational examples for other parts of the state.

The survey revealed a dedicated and knowledgeable infrastructure of people already at work to prepare for and protect the Commonwealth from WMD and terrorist incidents. Collectively they know what they now have—in the way of equipment, training, solid inter-agency relationships, and the rest—and even more important, they know what they need, often very precisely. There is a high degree of sophistication—for example, that properly equipped and trained Hazmat teams (important for other reasons) form the bedrock for properly responding to WMD incidents, a recognition that egos need to be managed, a clear vision that already existing collaborations between agencies and organizations (and their personnel) need to be broadened for more effectiveness, and that preparation for WMD/terrorist incidents should be done seamlessly with preparation for other emergencies and disasters in their communities. The quotes used so often in this report demonstrate both that knowledge and sophistication.

At the same time, neither OAI nor KyEM is aware of any openly published statewide effort that has specifically attempted to identify WMD needs and levels of preparedness as perceived at the local and county level. Until other such work is completed, it appears that this report, conducted in a state with a diverse mix of urban and rural population distribution, industrial and agricultural areas, major transportation corridors and installations—in short, a state like many others—provides useful insights not only about Kentucky, but about the nation as a whole.

Below is an extract from House Bill 258, passed in the summer of 2002 by the General Assembly of the Commonwealth of Kentucky; this is also known as the Antiterrorism Act of 2002.

Section 5. The Adjutant General, as executive head of the Department of Military Affairs and the Division of Emergency Management, utilizing federal funds and existing agency funds, shall:

(1)   Establish and chair an interagency working group…to help identify risks and needs and make a complete assessment of the preparedness of the Commonwealth to respond to acts of war or terrorism, including nuclear, biological, chemical, agro, eco, electromagnetic pulse, or cyber terrorism;

(2)   Collaborate with state and participating private agencies to submit a written preliminary report prior to December 31, 2002, to the Governor, the Legislative Research Commission and the Interim Joint Committee on Seniors, Military Affairs, and Public Safety regarding the findings of the assessment of the preparedness of the Commonwealth to respond to acts of war or terrorism, including nuclear, biological, chemical, agro, eco, electromagnetic pulse, or cyber terrorism;

The balance of Section 5 calls for the development and implementation of statewide strategies for dealing with these threats, providing information on the preparation for and response to incidents of this sort, and for annual updates of the report called for in Section 2.

Note: the Survey Form was introduced by a one page Introduction explaining the purpose of the survey, where to return it (by fax, mail or e-mail), and similar information. The introduction also stressed that responses would be kept confidential. To save paper, the Introduction has not been included with this report, and the space for individual comments dramatically reduced.

Part 1. General Needs and Level of Preparedness

In general, what geographical area will your answers be based on?

( ) Local (city, town)   ( ) County   ( ) Region (several counties)

This first part of the survey covers general issues, not dependent on the specific nature of the actual type of weapon or type of attack used.

A. Communication

In your area (local, county, region), what is the need for improved communication between organizations that would be involved in the *original identification* of an actual or suspected terrorism incident?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; communication is already excellent on this aspect

Within your area, what is the need for improved communication between organizations that will be involved in the *first response* (generally police, fire and emergency medical personnel) to a terrorism incident?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; communication is already excellent on this aspect

Are there other agencies/organizations in addition to police, fire, and emergency medical personnel that should be part of the communications loop at this stage, and if so, what are they? Your answer (use back of this page if necessary):

Within your area, what is the need for improved communication between organizations that would be involved in *later responses* to a terrorism incident (for example, teams that would actually clean up a building in which a biological or chemical agent had been released several days earlier)?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; communication is already excellent on this aspect

In your area, do you think there is a need for a better communication plan for informing the general public regarding potential or actual terrorism incidents?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; communication is already excellent on this aspect

At the present time, are there some agencies/organizations in your area where the level of communication is already very high, and which you would recommend as models for improving communications by others who are not as effective? This might be communications

from agency to agency, agency to other organizations, agency to the general public, or any other combination. If so, what agencies/organizations are they? What techniques do you think make them especially effective? Your answer (use back of this page if necessary):

Considering for a moment the current communications system between your area and state-level agencies, do you think there is a need for better communication between agencies/organizations in your area and the relevant state agencies?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; communication is already excellent with state agencies

Are there any specific state agencies with which you believe the communications to be excellent at this point in time? If so, what are they? Your answer (use back of this page if necessary):

In your own past, have you been involved with other agencies or organizations of any type where in your opinion the communication capabilities were excellent, and which could be a good source of information on how to improve the preparedness of communication systems in your region? If so, what are they? Your answer (use back of this page if necessary):

Later the survey includes questions about which are designed to cover all types of equipment, including communication equipment, but since you have been thinking generally about communications for the last few minutes, do you have any additional points to make on communication needs and level of preparedness?

B. Command Structure

In your geographic area, is there a need for a better understanding of the on-scene command structure during the response to a suspected or actual terrorism incident?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; knowledge about command structure is already excellent

In your area, is there a need for better understanding by the various groups of emergency responders (for example, firefighters, police, emergency medical technicians) of the command structures and roles of the other responding groups?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; knowledge about command structure is already excellent

In your area, are there one or more specific agencies or organizations that you think have a particularly good command structure now in place for their own people during the emergencies that the agency generally responds to? If so, what agencies are they, and, if you know, is there a specific name for the type of command structure each uses? Your answer (use back of this page if necessary):

In your area, have there been specific examples of multi-agency emergency responses where you think the command structure was particularly effective? Examples might be a fire where there were also suggestions of criminal activity such arson, or a train wreck where sabotage was suspected. If so, what are the examples, and what would be the best source of information on them? Your answer (use back of this page if necessary):

In your own personal experience in the past, have there been specific examples of multi-agency emergency responses where you think the command structure was particularly effective? If so, what are the examples, and what would be the best source of information on them? Your answer (use back of this page if necessary):

Do you have any other suggestions or observations on how to increase the level of preparedness for command/management of terrorist incidents in your area? Your answer (use back of this page if necessary):

C. On-Scene Response Needs and Capabilities

Later the survey will ask in more detail for your recommendations and suggestions regarding specific equipment needs and capabilities; here the focus is on more general categories. Any detailed comments you may have on each, either strengths or weaknesses, would be very helpful; use the back of this page if necessary.

In your area, do you think there is a need for easier access to *personal protective equipment (PPE)* that may be needed at the actual scene of a suspected or actual terrorist incident?
( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; PPE availability is already excellent in my area

Comments on PPE:

In your area, do you think there is a need for easier access to *decontamination equipment and supplies* that may be needed at the actual scene of a suspected or actual terrorist incident?
( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; availability of decon equipment and supplies is already excellent

Comments on decon equipment and supplies:

In your area, do you think there is a need for easier access to *on-scene communication equipment* that may be needed at the actual scene of a suspected or actual terrorist incident?
( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; appropriate communication devices already available in my area

Comments on on-scene communication equipment:

In your area, do you think there is a need for easier access to *on-scene medical support equipment* that may be needed at the actual scene of a suspected or actual terrorist incident?
( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; the availability of medical equipment is already excellent in my area

Comments on medical support equipment:

In your area, do you think there is a need for easier access to *field monitoring equipment* that may be needed at the actual scene of a suspected or actual terrorist incident?
( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; availability of needed field monitoring equipment is already excellent

Comments on field monitors:

Do you have any additional observations or suggestions regarding needs and preparedness for on-scene activities?

D: Off-Site Response Needs and Capabilities

In your area, do you see a need to enhance the capabilities of off-site medical institutions (hospitals, medical centers, clinics, etc.) in responding to actual terrorism incidents?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; medical facilities in my area are already well prepared

Are there particular strengths that exist in the medical facilities in your area? Your answer:

Do you have other comments on the needs and preparedness of medical facilities in your area?

Your answer:

In your area, do you see a need to create or improve off-site laboratory capability to evaluate the conditions at the site of a terrorist incident?

( ) Very High   ( ) High   ( ) Medium   ( ) Low   ( ) No need at all; lab capability already excellent in my area

Do you have any additional comments or observations regarding laboratory needs or preparedness in your area? Your answer:

Are there any other off-site needs that you think need increased attention in your area? Your answer:

Of these other needs, are there some that could best be met on a regional (that is, multi-county) or even statewide basis, and others that would best be met locally?

Best met on regional or state basis:

Best met on local basis:

Part 2. Specific Needs and Level of Preparedness

A. Specific Equipment Needs and Capabilities

The survey is based on the assumption that standard emergency response equipment, such as firefighting vehicles and equipment, ambulances with standard medical equipment, and so forth is generally available throughout the Commonwealth. However, if you believe that is not the case in your particular region, please identify those needs. Use the back of this page if necessary.

First: please identify the specific area you are commenting on, by city/town, county, or area, and then the needs as you see them. Your answer: my geographic location is _____. The needs I see as greatest in this area are:

For the same geographic area, please briefly list the types of *specialized* equipment you believe is now available that could potentially be used in responding to a chemical, biological

or nuclear radiological terrorist incident. This could include not only specialized equipment available from local, county and state agencies, but also from private companies, and other organizations such as hospitals, military bases, federal government agencies, etc.

Your answer for a chemical incident (for example, a nerve gas, or a terrorist-caused explosion at a chemical storage facility):

Your answer for a biological incident (for example, anthrax):

Your answer for a nuclear/radiological incident (that is, a so-called "dirty bomb"):

The Commonwealth's emergency response planning, including the new state law, also identifies other potential terrorist threats: incendiary and explosive devices, agro-terrorism, eco-terrorism, and electromagnetic pulse and cyber-terrorism. While it is not the main focus of this survey, comments you have on equipment needs and capabilities for these threats will be useful to the Division of Emergency Management. Your answer:

B. Specific Training Needs and Capabilities

Please use the back of this page if necessary when answering the questions below.

Having completed the survey to this point, you have probably thought about your own specific background, including any general or specific training you have had in the past, that would help prepare others for responding to any or all of the potential terrorist threats identified by the Commonwealth.

Please list or describe the specialized training *you have yourself already had* which you consider relevant to responding to potential or actual terrorist acts of any sort. Please underline the training that you consider especially valuable in this context. This should include training under all of the headings in this survey: communication, command structure, on-site response, off-site response, specialized equipment, etc. Your answer--I have already had the following training:

Next, please identify any *additional training you had already planned to have* before taking this survey. Again, please underline the training you think to be particularly important. Your answer: I have already planned to take the following additional training:

For your area, please briefly list the type of training, and who provides it, that you know is *already available to you and others* on terrorist incidents. Note that this can include not only training available in your immediate area, but also training available elsewhere in the Commonwealth or even in other states (for example, at US military installations around the country). Your answer: the following training is potentially already available to me and others in my area:

Finally, please list the types of training that you consider important, but which to the best of your knowledge *are not currently readily available* to you or others in your region. Your answer: critically important training that is not readily available to me and others in my area are:

Part 3. Background Information on You

As noted on the Introduction to this survey, every survey form will be kept confidential. Only summary results and patterns will be reported to the Kentucky Division of Emergency Management. However, it will help to better analyze and understand your answers if we know certain background information about you, your current position, and your background. Therefore we ask that you fill out as much of the information below as you feel comfortable providing.

Your work location. (city/town, county and/or region of the state):

Your current job. Please be as complete as you think appropriate. For example, job title or function, actual employer or type of employer (such as a company name or type of employer, for instance, local government law enforcement agency):

Relevant job duties. For example, an employee at a private company might, in addition to routine responsibilities, also be a member of the facilities emergency response/firefighting squad, or a hospital employee might also be on call as a member of an ambulance crew. Your answer: other duties at my job that are relevant to terrorist incidents are:

Other relevant experience, past and present. For instance, an individual might be a current member of a volunteer fire department or a volunteer emergency medical technician. In the past, the individual may have been in a relevant branch of the US military, or a full-time firefighter for a city fire department. Your answer:

Educational and training background. For example, an individual may have received special military training in chemical, biological and nuclear weapons, a certification as an industrial hygienist, or have a college degree in chemistry. Your answer:

Finally, if we could contact you to clarify or get more detail on any of your answers, please provide us with your name, daytime phone number and, if you have one, e-mail address. We will contact you *only* for this purpose, and will not provide this information to anyone else.

Name:

Daytime phone number: E-mail address:

Thank you very much for your help on this important issue

The following four geographic areas, previously established for emergency response planning and activities, were covered in the survey. For the following detailed map, please visit the home page for the Kentucky Division of Emergency Management at http://kyem.dma.state.ky.us and click on Area Offices.

Area 1: far western corner of the state, including Ballard, Calloway, Carlisle, Fulton, Graves, Marshall, and McCracken Counties. Predominantly rural, with a few urban centers (e.g., Paducah), some pockets of industry, and major transportation corridors (e.g., the Ohio River borders several counties.

Area 7: the northern Kentucky region, including Boone, Campbell, Carroll, Gallatin, Grant, Kenyon, Owen, and Pendleton Counties. Heavily populated, urbanized and industrialized; part of the Greater Cincinnati metropolitan area; major transportation corridors (the Ohio River; major interstate highways). The Northern Kentucky/Cincinnati International Airport is located this area.

Area 9: the far eastern edge of the state, including Boyd, Carter, Elliott, Floyd, Greenup, Johnson, Lawrence, Magoffin, Martin, and Pike Counties. Primarily rural with some pockets of substantial industrialization, some major transportation corridors.

Area 13: in the central part of the state, including Bourbon, Clark, Estrill, Fayette, Harrison, Madison, Nicholson, Powell and Scott Counties. Mixed urban and rural, includes Lexington and the state's capital of Frankfort, several major land transportation corridors.

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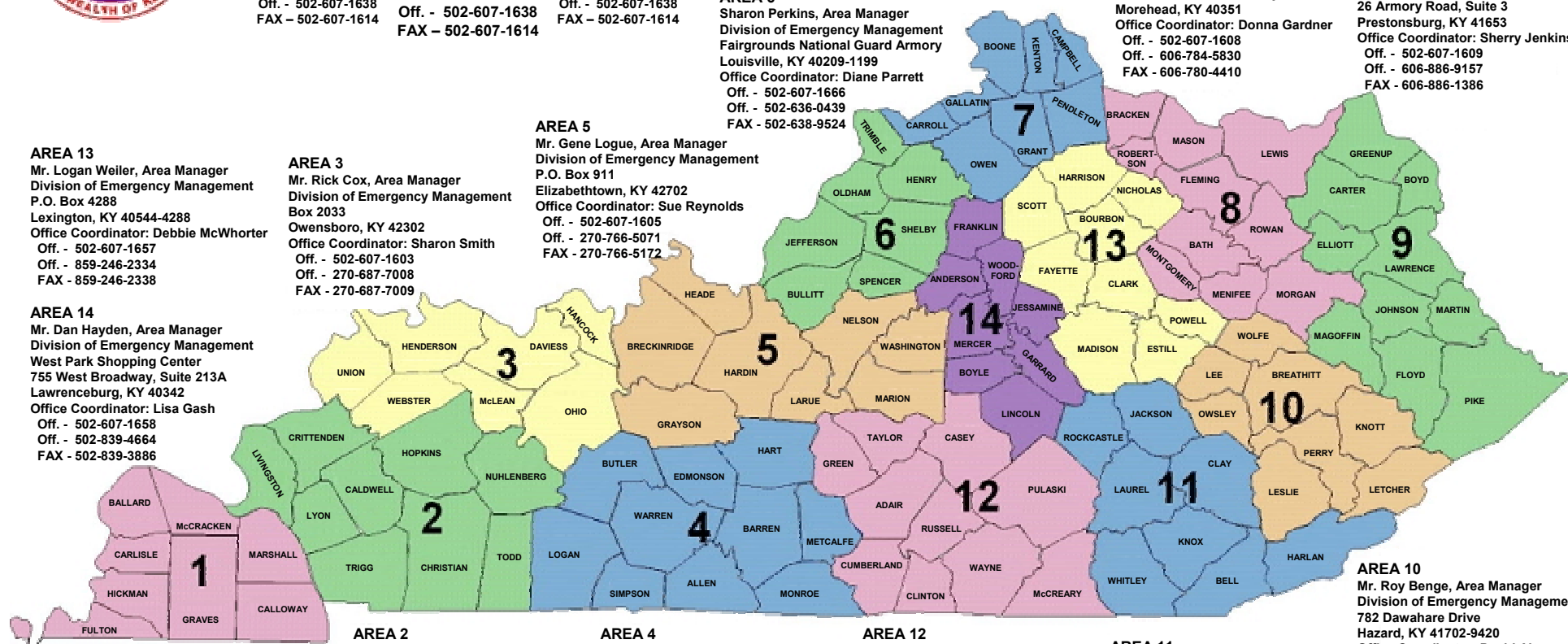FAX – 502-607-1614

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August 1, 2002

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The first table presents the results, for the four major issue areas, for the KyEM Area Managers, the average of all local/county responses, and the average for each of the four specific areas.

Table 8. Summary for All Four Major Issues

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
Communications	1.99	2.00	1.94	1.99	1.95	2.24
Command Structure	2.04	2.11	2.00	2.37	1.86	2.15
On-Scene	1.50	1.88	1.90	2.20	1.55	1.96
Off-Site	1.71	1.82	1.44	2.57	1.40	1.69
Number of Responses	14	53	7	20	18	8

The next four tables present the results for each category and each subcategory under it.

Table 3. Detailed Summary for Communication Issues

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
Communications	1.99	2.00	1.94	1.99	1.95	2.24
Original Identification	1.79	1.97	1.93	1.90	2.06	2.00
First Response	1.93	2.07	2.00	1.95	2.21	2.13
Later Response	2.14	2.13	2.57	2.10	1.72	2.57
Public Information Plan	2.29	1.95	1.64	2.10	1.71	2.38
Improved Area to State Communication Need	1.79	1.89	1.57	1.74	2.08	2.13

Table 5. Detailed Summary for Command Structure Issues

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
Command Structure	2.04	2.11	2.00	2.37	1.86	2.15
First Responders	2.07	2.10	2.00	2.26	1.83	2.38
Other Responders	2.00	2.13	2.00	2.47	1.89	1.93

Table 6. Detailed Summary for On-Scene Equipment and Supplies

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
On-Scene Equipment & Supplies	1.50	1.88	1.90	2.20	1.55	1.96
Personal Protective Equipment	1.21	1.69	1.57	2.00	1.28	2.00
Decontamination Equipment	1.36	1.94	1.86	2.37	1.44	2.14
On-scene Communication Equipment	1.86	2.06	2.43	2.05	1.89	2.14
On-scene Medical Equipment	1.79	2.06	2.50	2.42	1.71	1.86
Field Monitoring Equipment	1.29	1.64	1.17	2.16	1.41	1.67

Table 7. Detailed Summary for Off-Site Response Capabilities

Issue	KyEM Area Managers	All Local/County	Area 1	Area 7	Area 9	Area 13
Off-Site Response Capabilities	1.71	1.82	1.44	2.57	1.40	1.69
Medical Institutions	1.71	1.87	1.71	2.67	1.35	2.00
Laboratories	1.71	1.78	1.17	2.47	1.44	1.38

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Finally, OAI and the author would like to specifically recognize Dennis Decker, a valuable member of the OAI Advisory Board, as well as a key official in the Kentucky Fire Marshall's Office. He has been intimately involved in all of OAI's work in his state for many years, and who played a critical role early in 2002 in launching the discussions that resulted in this report.

The original survey forms and resulting spreadsheets, with all information identifying specific individuals removed, are in the custody of OAI, Inc. in Chicago. If needed, they can be reviewed by contacting Jack Huenefeld, Director of Environmental Health and Safety, OAI, Inc., 180 North Wabash, Suite 400, Chicago, IL 60601, phone (312) 528-3500. Additional copies of this report or its Executive Summary can be obtained from Mr. Huenefeld. It is also accessible from the NIEHS Worker Education and Training Program webpage (http://www.niehs.nih.gov/wetp/).

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