

**STATE AND LOCAL AIR POLLUTION TRAINING NEEDS AND TRENDS:
AN ANALYSIS FOR DEVELOPING RECOMMENDATIONS TO EPA
FOR STRATEGIC PLANNING AND SUPPORT**

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Prepared for
State and Territorial Air Pollution Program Administrators (STAPPA)/
Association of Local Air Pollution Control Officials (ALAPCO)
Training Committee
Mary Boyer (STAPPA), Robert Fulp (ALAPCO), Co-Chairs
Ron Townsend, Chair, STAPPA/ALAPCO/EPA Joint Training Committee
Mark S. Siegler, Technical Advisor

Prepared by
Joel Ann Todd
The Scientific Consulting Group, Inc.
Gaithersburg, MD

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EXECUTIVE SUMMARY

Purpose and Objectives

The purpose of this study was to identify near-term training needs and future training trends for state and local air pollution agency personnel, and to incorporate these findings into recommendations to EPA for strategic planning and support. The results were consistent with previous studies, indicating that EPA has a crucial role to play in training state and local agency personnel and stressing the need for EPA to (1) build training into the development of new regulations, (2) develop, update, and document high priority training courses and materials, and (3) provide a stable, long-term funding base for training activities.

Methodology

Phase I: Written Survey. The first phase of this study was a written survey of state and local air pollution control agencies. The survey was conducted by the STAPPA/ALAPCO Training Committee, with technical assistance from OAQPS and AED, U.S. EPA. The survey was sent to all state and local air pollution agency directors in August 1995. A total of 73 responses was received, 42 from local agencies and 31 from state agencies. All ten EPA regions were represented.

Phase II: Telephone Interviews. This phase of the study was intended to provide more in-depth information on emerging trends and the implications of those trends for training. The study consisted of telephone interviews with representatives of 11 state air pollution control agencies and representatives of 5 local air pollution control agencies. All had responded to the written survey. These respondents were selected to represent a range of agencies in terms of location and size. Interviews were conducted during June and July 1996. The interviews lasted from 30 - 45 minutes each.

Training Committee Review. In July 1996, the STAPPA/ALAPCO Training Committee and the STAPPA/ALAPCO/EPA Joint Training Committee met together in Minneapolis, MN to discuss the results of the study and to develop recommendations for the future. Committee members reviewed draft reports on Phases I and II. In addition, briefings on the results were presented at the meeting. In September 1996, the Committees met again in Raleigh, NC to review and approve the final recommendations.

Findings

Near-Term Training Priorities. Training topics that were cited most often as high or medium priority for FY96 by state and local agency respondents in the written survey and telephone interviews are presented below. Because of the relatively small sample size, the difference in priority between the first and last topics in the exhibit should not be considered significant.

State and Local Agency Training Priorities

Air Toxics (including MACT)-Basic/Advanced
Title V Operating Permits
Permits-Basic/Advanced
Advanced Inspection
Enforcement and Case Development-Advanced
Field Enforcement-Basic
Continuous Emissions Monitors-Basic/Advanced

Emissions Inventory
Pollution Prevention
Control Measures for O₃, CO, and xNO -Basic/
Advanced
Visible Emissions
Fundamentals of Enforcement - Multimedia
Multimedia/Cross-program Training

Future Trends and Training Priorities. Respondents to the telephone survey were asked to consider issues and training needs that will become more important over the next five years.

Emerging Issues and Trends. Respondents to the telephone survey noted that many current issues, such as Title V and MACT standards, would continue to be important in the future and would require training. They also noted emerging issues that they thought would be important and would create new training needs in the future. They stressed that there is a need for EPA to build training into the regulation development process so that state and local agency staff who will be responsible for implementing and overseeing these new regulations will have the knowledge and skills they need.

Most respondents predicted a shift in the levels of training that will be needed in the future, away from basic training to more intermediate or advanced training, although they acknowledged that there will always be a need for basic training to address turnover and new staff. In addition, they noted that some basic cross-program training will be needed.

Role of the Inspector. There was widespread consensus that the role of the inspector is expanding to include increased levels of compliance assistance in addition to the traditional enforcement role and, in some agencies, multi-media responsibilities. These new responsibilities increase the complexity of the job and the areas in which technical expertise is required. This new role also requires more “people” skills.

Many respondents noted that it is increasingly difficult to conduct good inspections given all of the new rules and, as a result, the need for inspection training continues to be high. If anything, agencies might need more inspector training since more responsibility is being placed on inspectors along with their new roles. Further, the emphasis on inspection-related training might need to be increased to create "super inspectors" for multi-media approaches.

Multi-Media Trends. While there has been considerable discussion of multi-media approaches to inspections, permitting, and other activities, few agencies have actually implemented multi-media efforts. Fewer than half of the respondents in the telephone survey said that their agencies were moving toward multi-media approaches. Respondents said that multi-media teams are more realistic than individual "super inspectors." Many respondents were skeptical of multi-media approaches primarily because the regulations are too complex and are separate.

Training Delivery. Several questions in the interviews were intended to gather information that will be helpful in improving training delivery systems and enhancing their responsiveness to state and local agency needs. Respondents were asked how current training courses could be modified to make them more helpful. Responses include:

- Offer more classroom, face-to-face training in addition to satellite and self-study courses
- Bring training to the agencies since travel is very difficult
- Keep courses up to date to reflect the rapid changes in regulations, technology, and processes
- Provide timely training on new regulations and programs
- Provide more coordination among providers so that agencies can identify appropriate courses more easily
- Provide more advanced training
- Provide a better distribution of training nationally

Industry Training. Most of the respondents thought that it was very important to provide training (including information dissemination and outreach) for industry as well as agency staff. As one respondent said, "training industry makes the agency's job easier." They thought that this is very important and that Title V success was due largely to training provided before implementation. It was noted, however, that time and money limit how much can be done.

Federal, State, and Local Agency Roles. Most of the respondents thought that EPA was trying to provide needed training but that resources were inadequate. Suggestions by one or more respondents for improving the roles and responsibilities of EPA, state, and local agencies in training included the following:

- EPA should focus on training that the state and local agencies cannot provide, such as training on national programs and regulations.
- EPA should provide training of trainers so that state and local agencies can train their own staff, particularly on basic and intermediate topics.
- EPA should stay on top of breaking issues and new mandates and provide timely information and training.
- EPA should focus on developing and presenting advanced courses using national experts.
- EPA should try to do fewer things and do them better--EPA is currently spread too thin.

Recommendations

The Training Committees developed recommendations for EPA for strengthening the Agency's support for training state and local air pollution control officials. Additionally, recommendations were developed to improve the effectiveness of the Training Committees.

Recommendations for EPA

EPA should reemphasize its leadership role in the technical training area, and assume greater responsibility for training State and Local Air Program Staff.

1. EPA should build training into the regulation development and rule promulgation processes, so that resources and schedules allow each new rule to be accompanied by an appropriate training program for the state and local agency staff who will ultimately be responsible for implementing and enforcing the rule. Specifically, EPA should:
 - Incorporate a training strategy into the rule-making process; training should occur concurrently with the development of a final rule.
 - Include a reference to this EPA-developed training program in each Federal Register notice that announces a new rule.

2. EPA should play a major role in developing and updating high priority courses and course materials so that they can be made available to other providers of training.
 - a. APTI and NETI should update existing courses as needed and make these revised materials available to other providers.
 - b. EPA should develop or support development of new courses on emerging topics that are cited as high priority by state and local agencies, and make these courses and course materials available to other providers, preferably in electronic formats.
 - c. EPA should emphasize documentation of training programs, through instructor manuals and participant materials, to facilitate replication or adaptation of these courses to state and local agency needs.
3. EPA should include long term funding for training in its strategic plans.

Recommendations for STAPPA/ALAPCO and Training Committees

1. The Training Committees should develop a process to facilitate better coordination and integration of providers.
2. STAPPA/ALAPCO should conduct the annual written needs survey to provide information needed by providers.
3. STAPPA/ALAPCO should endorse a "training curriculum" or "training guidelines" for staff that are based on the skills required for various jobs or functions. This could include number of days or hours of training required in addition to topics. (Note that this does not eliminate the need for training needs assessment.)

Following the July 1996 meeting in Minneapolis, MN, work groups were established to initiate action on these recommendations. Reports on progress were presented at the Joint Training Committee meeting in Raleigh, NC in September 1996.

The recommendations were transmitted from STAPPA and ALAPCO to Mary Nichols, EPA Assistant Administrator for the Office of Air and Radiation, and Steve Herman, Assistant Administrator for the Office of Enforcement and Compliance Assurance. Copies of these October 15, 1996 letters are included in Appendix F.

INTRODUCTION

Purpose and Objectives

The purpose of this project was to (1) identify near-term training needs and future training trends for state and local air pollution agency personnel, (2) incorporate these findings into recommendations to EPA for strategic planning and support, and (3) indicate areas in which the STAPPA/ALAPCO Training Committee should focus its attention.

The results of the project were consistent with previous studies, indicating that EPA has a crucial role to play in training state and local agency personnel and stressing the need for EPA to (1) build training into the development of new regulations, (2) develop, update, and document high priority training courses and materials, and (3) provide a stable, long-term funding base for training activities. It also affirmed the importance of training to the accomplishment of state and local air pollution agency missions.

Methodology

The two surveys included in this project were conducted by the State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO), with guidance and direction from the STAPPA/ALAPCO Training Committee and technical assistance from EPA (Office of Air Quality Planning and Standards and Air Enforcement Division).

Membership in the STAPPA/ALAPCO Training Committee includes interested representatives from state and local air pollution control agencies. In 1989, the STAPPA/ALAPCO/EPA Joint Training Committee was formed in an effort to improve communication on training needs between EPA and STAPPA/ALAPCO. The two committees have considerable overlap in membership. The Joint Committee includes the STAPPA/ALAPCO Training Committee as well as representatives from EPA headquarters and regional offices. Training providers affiliated with state/local agencies or EPA were also included. (A list of the current members of the Committees is included in Appendix A.)

Phase I: Written Survey

The first phase of this study was a written survey of state and local air pollution control agencies. The survey form was developed by the members of the STAPPA/ALAPCO Training Committee. Most of the questions were fill-in-the-blanks and rating or ranking of listed items; there were only a few open-ended questions. The survey was sent to all state and local air pollution agency directors in August 1995. A copy of the survey form is included in Appendix B.

A total of 73 responses was received, 42 from local agencies and 31 from state agencies. Follow-up telephone calls were placed in an effort to increase the initial response rate. All ten EPA regions were represented. The maps in Exhibits 1, 2, and 3 depict the geographic distribution of respondents. A list of respondents is included in Appendix C.

Responses were summarized for each region and for all responses received. This was the largest response to a STAPPA/ALAPCO needs survey and is the best compilation of needs information available. A preliminary report that compiled data from the survey was prepared and presented to the STAPPA/ALAPCO/EPA Joint Training Committee in Reno, NV. A final report was submitted in July 1996. The information from the preliminary report was used by EPA's Air Pollution Training Institute, the California Air Resources Board, and

WESTAR in their 1996-97 planning processes.

Phase II: Telephone Interviews

This phase of the study was intended to provide more in-depth information on emerging trends and the implications of those trends for training.

The study consisted of telephone interviews with representatives of 11 state air pollution control agencies and representatives of 5 local air pollution control agencies. All had responded to the written survey. A list of respondents is provided in Appendix D. These respondents were selected to represent a range of agencies in terms of location and size. Exhibit 4 presents a map indicating location of respondents. An effort was made to talk with the agency director, although in some cases the director asked a well-informed staff member to handle the interview.

The STAPPA/ALAPCO Training Committee developed a list of questions to guide the interviews. All were open-ended and the interviewer did not prompt the respondents with specific alternatives. These questions are included in Appendix E. The interviews were conducted by a third party in an effort to reduce any bias that might be introduced by the interviewer's opinion. Interviews were conducted during June and July 1996. The interviews lasted from 30 - 45 minutes each.

A report summarizing the results of the interviews was submitted in July 1996 and the results were presented to the STAPPA/ALAPCO/EPA Joint Training Committee in Minneapolis, MN.

Training Committee Review

In July 1996, the STAPPA/ALAPCO Training Committee and the STAPPA/ALAPCO/EPA Joint Training Committee met in Minneapolis, MN to discuss the results of the study and to develop recommendations for the future. Committee members reviewed draft reports on Phase I and Phase II. In addition, briefings on the results were presented at the meeting. Based on the study findings as well as the experience of the Committee members, the Committee developed a series of recommendations for EPA and for its own activities. The recommendations were discussed further and revised at a meeting of the Joint Training Committee in September 1996 in Raleigh, NC.

After review by STAPPA/ALAPCO, the final recommendations for EPA were transmitted from STAPPA/ALAPCO in letters to OAR Assistant Administrator Mary Nichols and OECA Assistant Administrator Steven Herman on October 15, 1996.

The recommendations for Committee activities were implemented in August 1996 and progress reports were presented at the September 1996 meeting in Raleigh, NC.

exhibit 1

exhibit 2

exhibit 3

exhibit 4

FINDINGS

Respondents to both surveys thought that training was very important to the overall success of their agencies' air quality programs. In the written survey, 52% of respondents considered training as "vital" and an additional 37% considered training extremely important, for a total of 89%. None of the respondents indicated that training was of no significance to the success of the program.

Near-Term Training Priorities

Respondents to the written survey were asked to rate a list of potential training topics as high, medium, or low priority for Fiscal Year 1996-1997. The data in exhibits 5, 6, 7, and 8 are taken from these responses.

State Agency Responses

Training topics that were cited most often as high or medium priority for FY96-97 by state agency respondents in the written survey are presented in Exhibit 5. This exhibit presents the number and percentage of states rating these topics as high or medium priority as well as the number and percentage of local agencies for comparative purposes. Note that all of these topics were considered very important and that, since the differences in percentages are often due to a difference of only one respondent, these differences are not statistically significant.

Exhibit 5: State Agency Training Priorities (Written Survey 1995)

Training Topic	No./% States (n=31)	No./% Locals (n=42)
Air Toxics (including MACT) - Basic	28/90%	34/81%
Air Toxics (including MACT) - Advanced	28/90%	36/86%
Control Measures for O ₃ , CO, and NO _x	27/87%	24/57%
Title V Operating Permits	27/87%	37/88%
Continuous Emissions Monitors (CEMs) - Advanced	26/84%	27/64%
Air Pollution Control Orientation - Advanced	25/81%	22/52%
Advanced Inspection	25/81%	35/83%
Continuous Emissions Monitors (CEMs) - Basic	25/81%	26/62%
Emissions Inventory	24/77%	26/62%
Enforcement and Case Development - Advanced	24/77%	31/74%
Pollution Prevention	24/77%	33/79%
Control Measures for O ₃ , CO, and NO _x - Basic	23/74%	22/52%
Permits - Basic	23/74%	27/64%
Permits - Advanced	23/74%	29/69%

Local Agency Responses

Priority training topics cited by local agencies differed somewhat from those cited by state agency respondents. As above, the state agency responses for these topics are also presented for comparative purposes. Note that all of these topics should be considered very important and, since the differences in percentages are often due to a

difference of only one respondent, these differences are not statistically significant.

Exhibit 6: Local Agency Training Priorities (Written Survey 1995)

Training Topic	No./% Locals (n=42)	No./% States (n=31)
Title V Operating Permits	37/88%	27/87%
Air Toxics (including MACT) - Advanced	36/86%	28/90%
Advanced Inspection	35/83%	25/81%
Air Toxics (including MACT) - Basic	34/81%	28/90%
Pollution Prevention	33/79%	24/77%
Enforcement and Case Development - Advanced	31/74%	24/77%
Field Enforcement - Basic	29/69%	18/58%
Visible Emissions	29/69%	21/68%
Permits - Advanced	29/69%	23/74%
Fundamentals of Enforcement - Multimedia	28/67%	18/58%
Multimedia/Cross-program Training	28/67%	17/55%

Total Responses

The course topics that were given highest priority overall are presented in Exhibit 7 on the following page. This exhibit also presents regional ratings for these course topics to indicate the variation among regions. As with the previous exhibits, due to the small number of entries in each cell, differences in percentages may not be statistically significant.

Exhibit 7: Highest Training Priorities by Region (Written Survey 1995)

Training Topic	Total n=73	Reg 1 n=3	Reg 2 n=3	Reg 3 n=6	Reg 4 n=17	Reg 5 n=10	Reg 6 n=4	Reg 7 n=5	Reg 8 n=6	Reg 9 n=13	Reg 10 n=6
Air Toxics (including MACT)-Advanced Title V Operating Permits	88% 88%	100% 100%	100% 100%	83% 83%	88% 88%	90% 100%	75% 75%	100% 100%	83% 100%	77% 77%	100% 67%
Air Toxics (including MACT)-Basic	85%	100%	100%	83%	77%	90%	100%	80%	83%	85%	83%
Advanced Inspection	82%	100%	67%	100%	77%	80%	100%	100%	83%	77%	67%
Pollution Prevention	78%	67%	100%	67%	88%	80%	50%	80%	67%	77%	83%
Enforcement and Case Development	75%	100%	33%	83%	59%	90%	75%	60%	83%	92%	67%
Continuous Emissions Monitors(CEMs)- Advanced	73%	100%	100%	67%	70%	60%	50%	100%	83%	62%	83%
Permits-Advanced	71%	100%	67%	67%	77%	80%	50%	100%	50%	54%	83%
Control Measures for O ₃ , CO, and NO _x - Advanced	70%	100%	67%	100%	65%	70%	50%	80%	83%	42%	83%
Continuous Emissions Monitors-Basic	70%	33%	100%	83%	65%	60%	75%	60%	83%	77%	67%
Emissions Inventory	69%	67%	100%	67%	77%	90%	50%	20%	67%	54%	83%
Visible Emissions	69%	33%	33%	83%	71%	60%	50%	80%	67%	77%	83%
Permits-Basic	69%	100%	67%	67%	71%	80%	75%	60%	67%	54%	67%

* Note that due to small sample size in many cells, these data should be used with caution. Differences among cells that appear significant based on the percentages might actually have no statistical significance due to the small number of respondents.

Exhibit 8 presents course topics that were considered high priority by less than 25% of the total respondents. State and local agency ratings are also provided. These course topics are lowest priority for the respondents. In some cases, the respondents and their agencies might not have responsibility for the functions covered by these topics.

Exhibit 8: Lowest Training Priorities (Written Survey 1995)

Training Topic	Overall No./% n=73	States No./% n=31	Locals No./% n=42
Radiation Programs/Radon	5/7%	2/5%	3/10%
Woodstove Inspection/Certification	7/10%	6/14%	1/3%
Environmental Management Systems (ISO 14000)	14/19%	6/14%	8/25%
Hazardous Waste Incineration	15/21%	7/17%	8/26%
Environmental Statistics-Advanced	15/21%	6/14%	9/29%
SO ₂ SIP Development	15/21%	6/14%	9/29%
Mechanics Training	15/21%	4/10%	11/36%
Acid Rain Program	18/25%	3/7%	15/48%

Future Trends and Training Priorities

The telephone survey made an effort to go beyond the near-term (FY 96-97) priorities identified in the written survey, asking respondents to identify issues and trends that will be emerging over the next five years and will have implications for training. Respondents were not presented with a list of topics from which to choose; instead, they were asked an open-ended question and were allowed to answer as they perceived the question.

Emerging Issues and Trends

There was little consistency or consensus among telephone respondents on the issues that will gain importance during the next five years for air pollution control agencies with the exception of two training needs.

- Almost all of the respondents (15) said that training for staff in "people skills" (e.g., handling difficult people or negotiation skills) is very important. This training is needed to assist staff in conducting an effective public hearing, diffusing hostility in a public meeting, encouraging voluntary compliance, and negotiations. Nine of the respondents said that such training is available locally and 3 said that training in "people skills" is not available locally. Several noted that this training should be related to the specific situations encountered in the air program and should not be generic training.
- The respondents were unanimous in their agreement that training in computer and information technology skills is important. Nine of the respondents said that such training is available locally and 3 said that training in computer or information technology skills is not available locally. Specific areas cited by respondents included air-specific computer applications, such as modeling, data analysis, and QA as well as Internet training.

Exhibit 9 presents the issues cited by respondents to the telephone survey; those that were also noted as important

topics for FY 96-97 in the written survey are indicated with an asterisk (*).

Exhibit 9: Emerging Issues and Training Needs (Telephone Respondents 1996)

Emerging Issues and Training Priorities	Total n=16	State n=11	Local n=5
Title V*	6	3	3
Fine particulates	5	4	1
Air toxics*	4	3	1
MACT standards*	4	4	
Pollution prevention*	3	2	1
Enhanced monitoring and CEM*	2	2	
New standards for PM ₁₀ and ozone	2	2	
Compliance assistance	2	2	
Data systems, data management, recordkeeping	2	1	1
Outreach and education of industry and the public	2	1	1
Title III*	1		1
Audit procedures, self-audits, ISO 14000 oversight	1		1
Landfills, brownfields, composting facilities	1		1
Ozone non-attainment (re-emerging)	1		1
Industry-specific training	1	1	
Accidental releases (plans and coordination)	1	1	
Health risk assessment	1	1	
Safety refresher	1	1	
Attainment demonstration	1	1	
Market incentives and their implications	1	1	

The STAPPA/ALAPCO Training Committee noted that many of the issues cited by the telephone respondents were not really "new" or "emerging" but were instead continuing issues of importance. They suggested that it might be difficult for many agency directors and staff to look into the future, given the uncertainties of EPA's and Congress' future actions and the immediacy of current problems. The Training Committee suggested that future implications for staff training could include:

- Increased emphasis on ecosystem management and multi-media approaches; staff will need an understanding of a broader range of environmental programs and issues as well as integrative and "people" skills.
- Continuing emergence of tribal issues and a need to plan training to support tribal roles and responsibilities as well as interactions among tribes and other government entities.
- A need for EPA to build training into the regulation development process and provide a budget for this training. State and local agency staff who will be responsible for implementing and overseeing these new regulations need timely training from an authoritative source.

In addition to the "emerging topics" noted in Exhibit 9, respondents to the telephone survey described the following training priorities for the future that are based on current issues and responsibilities (the number of respondents citing each topic is indicated in parentheses):

Exhibit 10: Ongoing Training Priorities (Telephone Survey 1996)

Ongoing Training Priorities	Total n=16	State n=11	Local n=5
Basic courses for new staff	5	5	
Compliance and inspection training	4	3	1
Technical training and industry-specific training	4	3	1
New programs and regulations	3	2	1
New Source Review	2		2
Modeling	2	2	
Permit processing	2	2	
Pollution prevention	2	2	
Emissions inventory	1		1
Multimedia approaches	1	1	
Safety	1	1	

Most respondents predicted a shift in the levels of training that will be needed in the future, to include a greater emphasis on intermediate or advanced training. Respondents noted, however, that there will always be a need for basic training to address turnover and new staff. (In the written survey, 70% of the respondents had turnover rates of less than 10%; another 25% had turnover rates of 10%-19%. These turnover rates do not necessarily reflect staff who have moved from one job to another, thus creating a need for training. During the telephone interviews, respondents anticipated that implementation of Title V will increase turnover, as companies hire agency staff with experience in the Title V program.) Respondents estimated that basic training will only constitute 25% or less of future needs. Estimates for intermediate training ranged from 35% to 50% and estimates for advanced training ranged from 25% to 50%.

Approximately one half of the respondents (8) thought that there a need for basic orientation in the area of environmental quality for agency staff, industry, or the public, although 2 of these said that it was not a high priority. Six said that basic orientation was not needed. One respondent said that something above basic orientation was needed for new staff in the agency due to overall success in implementing environmental education programs. He said that staff enter the agency with a higher level of environmental awareness than in the past. Another respondent said that basic orientation would give new staff a broad overview, noting that they come into the agency with a specialty and get more specialized.

Role of the Inspector

There was widespread consensus, among telephone respondents and Training Committee members, that the role of the inspector is expanding to include compliance assistance and, in some agencies, multi-media responsibilities. These new responsibilities increase the complexity of the job and the areas in which technical expertise is required. This new role also requires more people skills.

Respondents were asked if they would favor a decrease in the emphasis on training courses related to inspection activities to permit an increase in other types of courses? Seven (5 state and 2 local respondents) said they would favor a decrease in emphasis on inspection-related courses and 7 favored maintaining the current balance. One respondent emphasized that a decrease in emphasis on inspection-related training should not include a decrease in training related to health and safety.

Those respondents who thought the balance between inspection-related training and other types of training should remain as it is currently noted that it is increasingly difficult to conduct good inspections given all of the new rules and, as a result, the need for inspection training continues to be high. If anything, agencies might need more inspector training since more responsibility is being placed on inspectors along with their new roles. Further, the emphasis on inspection-related training might need to be increased to create "super inspectors" for multi-media approaches.

Multi-Media and Industry Sector Trends

While there has been considerable discussion of multi-media approaches to inspections, permitting, and other activities, few agencies have actually implemented multi-media efforts. Fewer than half of the respondents in the telephone survey said that their agencies were moving toward multi-media approaches (4 state and 2 local respondents). Five respondents (all from state agencies) said that their agencies were looking at multi-media approaches but had taken no action yet. Another five respondents (2 state and 3 local agency respondents) said that their agencies were not moving toward multi-media approaches, noting that multi-media efforts were too difficult given the separate laws and regulations currently in effect and the complexity of those laws and regulations. One local agency respondent also noted that there were no local counterparts in other media to collaborate with the air office in multi-media activities.

When asked whether there would be a need for multi-media inspectors or permit writers now or in the future, seven respondents said that there would be such a need, further commenting that teams are more realistic than individual "super inspectors." The reasons for the shift would include the need to correct air problems without shifting problems to other media; recognition that if there is an air problem, there are probably other problems as well; and a need to use resources more efficiently as funds are reduced. Three respondents said that there would not be such a need, primarily because the regulations are too complex and are separate. Six respondents were not sure, due primarily to the complexity of the regulations and doubt that individuals could actually learn everything needed to become a multi-media inspector. One respondent also noted that multi-media inspections might actually be harder for industry to deal with because the environmental manager has to think of everything at once.

Nine respondents (6 state and 3 local agency respondents) said that their agencies were conducting activities focused on one or more specific industry sector(s).

Training Delivery

Several questions in the interviews were intended to gather information that will be helpful in improving training delivery systems and enhancing their responsiveness to state and local agency needs.

Respondents were asked whether they prefer training that is offered to their state alone, in combination with other states in the region, or on a national basis and whether this response differed by topic? Three respondents said that they preferred training for their state alone for state-specific topics, such as Title V procedures and for enforcement and monitoring. Five said that they preferred training within their region because it makes travel easier and the training is more relevant. One respondent noted that out of state travel is difficult because of public image as well as funding. Eight respondents said that they preferred training with other states in general or on a national basis:

- for topics of national scope such as new regulations

- to enable them to obtain ideas from other states
- to have an opportunity to network with other agency staff

One respondent also noted that for some topics, such as modeling, there were not enough staff in any one state to warrant a training program so it made sense to offer this type of training to a national audience. Two respondents said that they had no preference, but one of these respondents added that some training that is offered on a national basis is not applicable to individual state or local agencies, due to different climate and meteorology, industry, etc.

Training Providers

Air pollution control agencies use a wide variety of providers to obtain training for staff. The choice of provider is affected significantly by agency location--most agency staff find it difficult to travel out-of-state for training so providers located within the state and those who can come to a state to offer a course were favored.

Exhibit 11 summarizes information on the use of training providers by agencies responding to the written survey. Respondents to the written survey were asked to estimate the percentage of staff within the air agency who had received training from listed providers in FY95. It should be noted that providers offering primarily classroom training have more limited geographic audiences due to travel constraints. As a result, utilization within the surrounding geographic area might be very high but the national utilization might be lower.

**Exhibit 11: Percentage of Agency Staff Receiving Training from Specific Providers in FY95
(Written Survey 1995)**

Provider	Total n=73	State n=31	Local n=42	Regional Variation
In-house programs	42%	42%	42%	High: Regions 7 (68%) and 5 (63%) Low: Region 1 (28%)
EPA/APTI Distance Learning (Satellite) Network	29%	31%	27%	High: Region 7 (74%) Low: Regions 6 (5%) and Region 1 (>1%)
Other State or Local Programs	15%	8%	20%	High: Regions 6 (37%), 5 (34%), and 8 (30%)
EPA/APTI Self-Study Courses	14%	11%	16%	High: Region 7 (46%) Low: Regions 10 (9%), 1 (7%), and 9 (4%)
California Air Resources Board (CARB) 200 Series	11%	8%	13%	High: Regions 9 (33%) and 7 (23%) Low: Regions 3, 5, 6 (each 0%); 1 (2%), 2 (3%)
Air and Waste Management Association (AWMA)	11%	7%	13%	High: Region 7 (56%) Lower: Region 9 (12%); all others less than 10%
Private/commercial programs	11%	11%	10%	High: Region 5 (19%) Low: Region 8 (4%)
California Air Resources Board (CARB) 100 Series	10%	9%	10%	High: Region 7 (29%) Low: Regions 3 (>1%), 5 (3%), and 1 (4%)
EPA Regional Offices	9%	5%	12%	High: Region 7 (37%) Mid: Region 6 (20%) Low: all others less than 10%
Regional consortia (NESCAUM WESTAR, MARAMA, etc.)	7%	10%	5%	High: Regions 8 (25%), 10 (20%), and 2 (18%) Low: Regions 6 and 7 (0%), 4 and 5 (>1%)
EPA Area Training Centers	5%	3%	6%	High: Region 10 (17%) Low: others less than 6%
California Air Resources Board (CARB) 300 Series	4%	4%	4%	High: Region 9 (17%) Low: others 5% or less; Regions 1, 3, 5, 6, and 7 indicated 0%
University of Cincinnati Training Academy	4%	2%	5%	High: Region 5 (14%) Mid: Regions 7 (7%), 4 (2%), and 3 (2%) Low: others indicated 0%
University of Texas Training Academy	4%	2%	5%	High: Regions 6 (24%) and 7 (20%) Low: all others less than 5%; four indicated 0%
National Enforcement Training Institute (NETI)	2%	2%	2%	High: Regions 2 (8%) and 5 (6%) Low: Regions 3, 4, 6, 7, 10 indicated 0%
Rutgers/EOHSI Training Academy	2%	4%	>1%	High: Region 2 (21%) Mid: Regions 3 (7%) and 1 (5%) Low: others 1% or less

*Note: Classroom programs generally draw from a more limited geographic region; national utilization may not appear high but regional utilization might be very high.

In an effort to identify those features of training programs and training providers that respondents found

particularly effective and attractive, a question was included in the interview concerning preferred providers. The providers cited and the reasons that they were preferred follow:

Provider	Preferred Features
APTI/Distance Learning Network	<ul style="list-style-type: none"> ● cost effective ● reaches large audience ● on target ● good technical information ● minimal travel required ● can tape broadcast and show later to new staff ● provides "national" perspective and a common baseline for all agencies
California Air Resources Board	<ul style="list-style-type: none"> ● good interaction ● down to earth and practical with good examples ● presented in the state or locality ● reasonable price and high quality ● experienced and well-prepared instructors ● up-to-date ● gives an idea of what the future might bring since California is ahead of many other states
WESTAR	<ul style="list-style-type: none"> ● fills gaps in a timely fashion ● trains on issues relevant to western states ● provides western perspective
NESCAUM	<ul style="list-style-type: none"> ● provides regional perspective
University of Texas at Arlington	<ul style="list-style-type: none"> ● free ● quality of trainers is high ● trainers use practical examples ● face-to-face classes
No provider specified	<ul style="list-style-type: none"> ● Instructors with field experience ● Instructors who are real experts ● Face-to-face classroom or hands-on training ● Use of air examples that relate to participants' jobs ● Satellite training (cost, access to national experts) ● Training tailored to the state

Respondents were asked how current training courses could be modified to make them more helpful? Responses include:

- Offer more classroom, face-to-face training
- Bring classroom training to the agencies
- Provide more coordination among providers to facilitate identification and access to relevant courses
- Keep courses up to date--regulations, technology, and processes are changing rapidly
- Tailor courses to states or encourage states to have on-site facilitators to do this with satellite courses
- Build in more interaction in satellite courses (exercises, questions)
- Training should be available when new regulations or programs are implemented

- Improve presentation skills of trainers
- Put materials and videos on the Internet
- Provide more advanced training
- Provide a better distribution of training centers nationally
- Schedule farther in advance and stick to schedules

Respondents were asked whether they foresee a role for the Internet in future training and whether their staff currently have access to the Internet (or will in the future). Eight said that they thought the Internet could play a role in future training activities. Potential uses include:

- Internet-based training could be offered at one's desk or at home ("just-in-time" training and self-study)
- Internet-based training could be structured similar to computer-based training with an instructor checking periodically for questions and providing answers to those questions

Four respondents said that they did not foresee a role for the Internet in future training. The primary reason was that the Internet is too slow. One respondent said that staff do not have access, probably will not get access, and already have the TTN as an information resource.

Industry Training

Most of the respondents (15) thought that it was very important to provide training for industry as well as agency staff. As one respondent said, "training industry makes the agency's job easier." Several respondents said that they advertise and invite industry to APTI broadcasts and other training events. They thought that training for industry is very important and that Title V success thus far was due largely to outreach and training provided before implementation. It was noted, however, that time and money limit how much can be done.

There was some discussion of whether industry needs to be "informed" or "trained" (e.g., workshops on new regulations as opposed to courses on new regulations).

Respondents had differing opinions on whether it was preferable to train industry with agency staff or separately. Two respondents thought that industry should be trained separately and 3 thought that they should be trained together, citing the benefits of interaction and agreement on appropriate approaches.

Federal, State, and Local Agency Roles

Most of the respondents thought that EPA provides very useful training and is trying to meet all training needs but that resources were inadequate. Several applauded the STAPPA/ALAPCO Training Committee's ongoing efforts to maintain and increase resources for training. Suggestions made by respondents for improving the roles and responsibilities of EPA in its relationship with state and local agencies in training included the following:

- EPA should focus on training that the state and local agencies cannot provide, such as training on national programs and regulations.
- EPA should provide training of trainers so that state and local agencies can train their own staff, particularly on basic and intermediate topics.
- EPA should stay on top of breaking issues and new mandates and provide timely information and training.
- EPA should focus on developing and presenting advanced courses using national experts.

- EPA should do less oversight and more training.
- EPA should try to do fewer things and do them better--EPA is currently spread too thin.

CONCLUSIONS AND RECOMMENDATIONS

The results of this project indicate that training is very important in the accomplishment of state and local agency missions. Training is particularly crucial when new programs or regulations are promulgated, when staff roles expand to encompass new responsibilities, and when new staff join the agencies. Thus, high priority training needs include specific topics such as *air toxics*, *Title V operating permits*, and *advanced inspections* as well as more generalized areas such as “*people skills*” and *use of computers* and computer software.

The surveys also indicated that state and local agencies cannot spend large amounts of money or time on training, so training programs that are lower-cost and require the *minimum amount of time or travel* are favored. Other features of training programs that were preferred included a high degree of *interaction*, through discussion or question/answer sessions, and instructors who had *real-world experience* in the field they were teaching.

The results of the two surveys were used by the STAPPA/ALAPCO Training Committee to develop recommendations for improving training efforts in the future. The Committee developed recommendations for EPA consideration as well as recommendations to guide its own activities.

Recommendations for EPA

STAPPA and ALAPCO strongly believe that **EPA should reemphasize its leadership role in the technical training area, and assume greater responsibility for training state and local air program staff.** Over the years, air pollution control activities have evolved into a more diverse and technically complex field. EPA’s Office of Air and Radiation and Office of Enforcement and Compliance Assurance have recognized the agency’s responsibility for training under the Clean Air Act as well as the importance of training in program implementation. However, while EPA has provided support for the Air Pollution Training Institute (APTI), the National Enforcement Training Institute (NETI), and other training programs for state and local air pollution control personnel, there is still a need for EPA to provide additional training. State and local agencies are taking the initiative to develop training for their own staff, but EPA has a major role to play in two areas.

First, **EPA should build training into the regulatory development process, so that resources and schedules allow each new rule to be accompanied by an appropriate training program for the state and local agency staff who will ultimately be responsible for implementing and enforcing the rule.** As regulations are developed by EPA, implementation and enforcement of these regulations are increasingly delegated to state and local agencies. It is essential that state and local air personnel receive training on the new rules as they are promulgated. If this training is not provided, experience has demonstrated that state and local staff will be less knowledgeable about the regulations than the regulated community. This will undermine the program, the regulation, and the credibility of the state and local air agencies. Just as the agency has become increasingly concerned with the issue of providing enhanced public access and “fair notice” to industry on new or changing regulations, so too should EPA be concerned with providing information and training to state and local agencies.

Two specific suggestions for implementing this recommendation are offered by STAPPA and ALAPCO:

- Incorporate a training strategy into the rule-making process; training should occur concurrently with the development of a final rule.
- Include a reference to this EPA-developed training program in each Federal Register notice that announces a new rule.

Second, **EPA should play a major role in the development and updating of high priority courses and course materials so that they can be made available to other providers of training.** EPA is in a unique position to serve as a resource for all providers of air pollution training. The agency's APTI, a leader among training providers since its inception, could play a major role in providing training materials to other providers. The numerous other training providers, such as NETI, state agencies, universities, and regional consortia, who have developed specific areas of expertise, could benefit from the coordination, development, and sharing of core materials. Specific suggestions to implement this recommendation include:

- APTI and NETI should update existing courses as needed and make these revised materials available to other providers.
- EPA should develop or support development of new courses on emerging topics that are cited as high priority by state and local agencies, and make these courses and course materials available to other providers, preferably in electronic formats.
- EPA should emphasize documentation of training programs, through instructor manuals and participant materials, to facilitate replication or adaptation of these courses to state and local agency needs.

Finally, to make the preceding recommendations possible, **EPA should include long term funding for training in its strategic plans.** In this new era of environmental protection, with new approaches and policies emphasizing economic incentives, market based approaches, and customer service excellence, the need for training is magnified. Over the years, these programs have demonstrated that the return on investment in training is high.

The recommendations were transmitted from STAPPA and ALAPCO to Mary Nichols, EPA Assistant Administrator for the Office of Air and Radiation, and Steve Herman, Assistant Administrator for the Office of Enforcement and Compliance Assurance. Copies of these letters (dated October 15, 1996) are included in Appendix F.

Recommendations for STAPPA/ALAPCO and the Training Committees

The Training Committees should develop a process to facilitate better coordination and integration of providers. Coordination should focus on needs and should include:

- better communication of needs to providers
- better communication of what is available to users
- opportunities to do joint projects

- making sure there are no "gaps" or needs that are not being addressed by someone
- sharing of information on courses to other providers so one provider can bring in another provider when that is the most cost-effective way to meet a need
- joint funding of course development when a course is needed by many users
- use of each delivery mechanism to its best advantage (such as satellite, classroom, workshop, self-study)
- notification and coordination of schedules and use of instructors to avoid conflicts.

Methods for consideration include monthly telephone calls plus two working meetings per year.

STAPPA/ALAPCO should conduct the annual written needs survey to provide information needed by providers. The survey instrument should be revised to make it easier for respondents to complete.

STAPPA/ALAPCO should endorse a "training curriculum" or "training guidelines" for staff that are based on the skills required for various jobs or functions. This could include number of days or hours of training required in addition to topics. (Note that this does not eliminate the need for training needs assessment.) Several models have been developed and these can provide the basis for this effort--for example, Hillsborough County, Pennsylvania, and California have developed such guidelines and the Texas Needs Assessment contains useful information on skills required for different positions. (There are numerous other examples and information sources as well, such as EPA Order 3500.1, curricula developed by training providers such as the Rutgers/EOHSI Training Academy, and others.)

Following the July 1996 meeting in Minneapolis, MN, work groups were established to initiate action on these recommendations. Reports on progress were presented at the Training Committees joint meeting in Raleigh, NC in September 1996.

Appendix A

STAPPA/ALAPCO/EPA Joint Training Committee Members

Committee Co-Chairs

*Mary Boyer (California), STAPPA

*Bob Fulp (Winston-Salem, North Carolina), ALAPCO

Ron Townsend, EPA

Committee Members

*Tom Allen (NESCAUM)

*Theresa Bayoud (Texas)

*Iwan Choronenko (Tampa, Florida)

*Peter Casale (New York)

*Bob Colby (Chattanooga, TN)

*John Core (WESTAR)

Daniel Couturier (NETI)

Tracie Douglas (Reno, Nevada)

*Victor Espinosa (California)

*Shawna Gibson (Minnesota)

Bob Hague (EOHSI)

George Hurt (EPA)

*Jolaine Johnson (Nevada)

*Bruno Maier (Dayton, Ohio)

Mark Siegler (EPA)

*Rick St. Louis (Pennsylvania)

*Darryl Tyler (Delaware)

*Susan Wierman (MARAMA)

Howard Wright (EPA)

*Member of the STAPPA/ALAPCO Training Committee as well as the Joint Committee.

Appendix B

Written Survey Questionnaire