RECOMMENDATIONS FOR ENHANCING EPA'S COMPLIANCE ASSISTANCE PROGRAM

Report of the Second Compliance Assistance Advisory Committee

National Advisory Council for Environmental Policy and Technology

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EXECUTIVE SUMMARY

The second National Advisory Council for Environmental Policy and Technology (NACEPT) Compliance Assistance Advisory Committee (CAAC) appreciates this opportunity to provide advice to the United States Environmental Protection Agency (EPA) on enhancing compliance assistance (CA) across the Agency and the national CA network. Since the creation of EPA's Office of Enforcement and Compliance Assurance (OECA) in 1994, much progress has been made in improving the effectiveness of EPA's enforcement and compliance assurance efforts. The CAAC is hopeful that its recommendations will assist EPA in its efforts to further enhance CA and to improve the environmental performance of the regulated community.

The CAAC consists of representatives from state, tribal and local governments, compliance assistance providers, regulated commercial, industrial and federal facilities, community-based environmental organizations, and consultants and provides a multi-stakeholder perspective to EPA regarding compliance assistance issues.

Compliance Assistance is defined by EPA as activities, tools or technical assistance which provide clear and consistent information for 1) helping the regulated community understand and meet its obligations under environmental regulations; or 2) compliance assistance providers to aide the regulated community in complying with environmental regulations. Compliance assistance may also help the regulated community find cost-effective ways to comply with regulations and/or go "beyond compliance" through the use of pollution prevention, environmental management practices and innovative technologies, thus improving their environmental performance. CA includes activities that are commonly described as technical assistance, environmental assistance, environmental management assistance, and pollution prevention assistance within the Agency and the stakeholder community.

The first CAAC was established in 2000, within the EPA under the NACEPT charter approved pursuant to the Federal Advisory Committee Act (FACA) by the Administrator and the General Services Administration. The final report of the first CAAC, "Maximizing Compliance Assistance: Recommendations for Enhancing Compliance Assistance Opportunities at EPA and Through Other Providers," was submitted to the Administrator in August 2001.

The second CAAC was established in 2002 to advance the work done by the first CAAC. The original charge to the second CAAC was to provide recommendations to EPA: (1) for strengthening the national compliance assistance (CA) network by promoting collaborations in CA planning and tool development; (2) for developing and testing performance measurement systems to demonstrate the effectiveness and environmental outcomes of compliance assistance; (3) acting as a sounding board to provide feedback to EPA on compliance assistance issues; and (4) formulating the agenda for the agency's third annual Compliance Assistance Forum. However, the charge was modified to focus on three key areas: (1) the EPA-wide integration of CA into the Agency's mission, goals and activities; (2) the development of parameters which will enable EPA to successfully measure CA results; and (3) the optimization of the CA network across EPA and other environmental assistance providers.

This report is organized into chapters which reflect the thoughts and CA recommendations of this second CAAC in these areas. At the end of each chapter, examples and practical tools are provided to assist EPA in implementing the recommendations herein.

Key recommendations in this report include:

1. Ensuring that CA is an integral part of EPA's mission in its entirety and in its component parts, as recommended by the previous CAAC. No single internal entity should be expected to carry sole responsibility for these activities. Rather, from the Administrator's Office and throughout the entire chain of command, EPA must ensure that CA becomes a critical component of every Program Office's and Region's approach to its responsibilities as well as a key performance measure of its success. To accomplish this in a coordinated manner EPA should utilize an organizational management system approach to plan, implement, measure, review and continuously improve its CA program agency-wide.

   Further, the CAAC recommends that the Administrator establish a permanent coordinating group of senior representatives across the Agency (i.e. Offices and Regions) to ensure that CA is fully integrated into the Agency's mission, goals and activities, and that reports of these efforts to integrate CA into the Agency's activities be transmitted to the Administrator on a regular basis.

2. Aligning EPA's priority-setting, budgeting and planning processes in a way that fosters a collaborative approach to CA implementation across all media and programs and which is reflective of the value of CA in achieving the Agency's mission and goals. EPA must approach its environmental protection mission in a manner that recognizes the collective importance of research, regulatory development, CA, monitoring, and enforcement all being utilized strategically in a balanced manner to affect desired environmental and public health protection outcomes. This will require the Agency to make coordinated decisions on allocation of resources across these Agency functions. Implementing these CAAC recommendations will require a commitment of resources by EPA.

3. Developing and optimizing a CA delivery network that leverages the myriad of organizations and entities to which the regulated community turns for information and assistance. Assistance should be provided based upon the needs of the end-user, with the recognition that these needs may differ between types of regulated entities, and even within groups of similar entities. EPA should also draw upon recognized behavioral models to improve the effectiveness of CA.

4. Developing an effective way to track and report compliance trends and rates nationally as key measures of the effectiveness of both CA and enforcement. Such measures would provide an improved way of determining the extent to

which CA and enforcement are impacting compliance rates and would also improve the ability of the Agency to ascertain where to focus its limited resources.

The CAAC requests that the Agency report back to NACEPT Council on the implementation of these recommendations.

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INTRODUCTION

Authority

The National Advisory Council for Environmental Policy and Technology (NACEPT) Compliance Assistance Advisory Committee (CAAC) is established within the United States Environmental Protection Agency (EPA) under the NACEPT charter approved pursuant to the Federal Advisory Committee Act (FACA) by the Administrator and the General Services Administration.

In 1994, EPA sought to improve the effectiveness of its compliance monitoring and enforcement operations at headquarters by consolidating these operations into one office—the Office of Enforcement and Compliance Assurance (OECA). A number of Regions implemented similar reorganizations. These reorganizations resulted in changes, both in substance and structure, to EPA's enforcement and compliance assurance program. EPA recently undertook a five-year review to assess how well the reorganization improved its effectiveness. This assessment included soliciting input from EPA's state partners and stakeholders on how EPA can further improve public health and the environment through its compliance assurance efforts.

The first CAAC was established in 2000. The CAAC consists of representatives from state, tribal and local governments, compliance assistance providers, regulated commercial, industrial and federal facilities and community-based environmental organizations and consultants, and provides a multi-stakeholder perspective to EPA regarding CA issues. The final report of the first CAAC, "Maximizing Compliance Assistance: Recommendations for Enhancing Compliance Assistance Opportunities at EPA and Through Other Providers," was submitted to the Administrator in August 2001.

Charge

The purpose of the second CAAC was to create a multi-stakeholder working group that can provide advice to the Administrator (through the NACEPT Council) on improving the Agency's CA program. The charge to the second CAAC addressed four activities:

1. for strengthening the national CA network by promoting collaborations in CA planning and tool development;

2. for developing and testing performance measurement systems to demonstrate the effectiveness and environmental outcomes of CA;

3. acting as a sounding board to provide feedback to EPA on CA issues; and

4. formulating the agenda for the agency's third annual Compliance Assistance Forum.

However, the charge was modified to focus on three key areas: (1) the EPA-wide integration of CA into the Agency's mission, goals and activities; (2) the development of parameters which

will enable EPA to successfully measure CA results; and (3) the optimization of the CA network across EPA and other environmental assistance providers.

The second CAAC conducted open meetings on June 4-5, 2002, in Washington, D.C. and December 3, 2002, in San Antonio, Texas. Working with OECA, the CAAC also convened the third *National Compliance Assistance Providers' Forum 2002* in San Antonio, Texas during December 2002.

IMPROVING INTEGRATION OF COMPLIANCE ASSISTANCE THROUGHOUT EPA'S ENVIRONMENTAL PROTECTION EFFORTS

Current State:

EPA has developed a number of CA initiatives that are being implemented in various parts of the Agency and has improved its management of CA through the annual Compliance Assistance Activity Plan. CA is identified in EPA's Strategic Plan (Goal 5), and the Office of Compliance in OECA has played a leadership role in managing and coordinating EPA's CA activities. However, the recommendations of the first CAAC Report (August 2001) that EPA address CA holistically and establish an Agency wide commitment to CA in the strategic plan have not yet been realized. The CAAC believes that there are significant opportunities to improve EPA's integration of CA, but the ability to promote and develop CA holistically within EPA is limited unless explicitly supported by the Administrator.

Recommendations:

The CAAC provides the following recommendations for integrating CA in the Agency's programs and mission. In addition, the CA Self Assessment Tool (Appendix A) is provided for use by EPA to assist in implementing an organizational management system approach for its CA program and assessing progress in its CA program development.

Compliance Assistance needs to be recognized and better used as a "preventive" approach to environmental protection

> Maximizing the ability of the regulated entities to voluntarily comply with regulations is critical if EPA wishes to obtain the maximum environmental benefits from the regulations it enacts. To work towards optimal use of CA, the EPA should implement "in-reach" for CA to support its outreach for CA. "In-reach" here means that EPA should reach into all offices which develop, interpret, implement, enforce, publicize, and explain regulations (including those who develop CA), to build EPA staff understanding of the regulated community, especially small entities.
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> To support this in-reach, EPA should also improve analysis of the cost of the time and effort needed by regulated entities to become aware of and to understand the applicability of new (and existing) requirements. This information will point to needs and priorities for compliance assistance. Understanding obstacles to compliance (including the costs of discovering what and how rules apply) will assist EPA to improve the strategic use of CA throughout the Agency, and maximize self-initiated compliance.

EPA must recognize that CA activities are occurring throughout the Agency and provide structure, support and accountability for Agency-wide CA implementation

Successful compliance assistance is a complex process. It is developed and delivered at many different points in the regulatory system. It demands a variety of tools addressing a wide diversity of environmental challenges, levels of understanding and available resources. EPA should view CA not as a tactical tool, but rather a strategic mission. It must become the proverbial thread woven through the fabric of environmental stewardship.

Accordingly, CA must be an integral part of EPA's mission in its entirety and in its component parts. No single internal entity should be expected to carry responsibility for these activities. Rather, from the highest levels, EPA must ensure that CA becomes a critical component of every program's approach to its responsibilities as well as a key performance measure. To address the currently fragmented state of EPA's CA efforts, the CAAC recommends that the Administrator establish a permanent coordinating group of senior representatives across the Agency (i.e., Offices and Regions) to ensure that CA is fully integrated into the Agency's mission, goals and activities, and that reports of the efforts to integrate CA into the Agency's activities be transmitted to the Administrator on a regular basis.

EPA should utilize an *organizational management system* approach to plan, implement, measure, review, and continuously improve its CA program agency-wide

Although CA – whether characterized as such or by other names, such as pollution prevention, technology transfer, performance track, or integrated strategies—is a strong presence and pervasive force in the Agency, its function and importance has not always been well-defined, it is not generally a funding priority and, at times, has lacked a coherent focus or a comprehensive recognition of methods and objectives. CA is an important part of a systematic approach necessary to the achievement of the Agency's objectives, and its role in that system should be optimized—particularly, in this era of stringent resource limitations.

An organizational management system that establishes a process for CA policy development, implementation, review, and program adjustment while also drawing upon the critical principle of *continuous improvement* will drive CA programs toward ever increasing levels of effectiveness. This approach is a systematic way of managing the CA effort as an integral part of EPA's overall program. To this end the CAAC has developed a Compliance Assistance Self-Assessment Tool (Appendix A).

EPA should clearly communicate its CA program internally and to external CA stakeholders; CA stakeholders need to be involved in EPA's CA program

Often, CA is developed without its end customer in mind. While CA can be delivered in a vacuum, it achieves environmental benefit only if it is adopted and

shared by the users. In order to be effective, CA must be easily understood, useful and relevant to the users. Often, EPA staff does not 'speak the user's language.' In order to learn to speak the user's language, as well as better understand their needs and priorities, EPA needs to work with affected stakeholders. Communication is the first and most important step in achieving stakeholder involvement in EPA's CA program.

Communication within EPA is equally important if the EPA's CA program is to be effective. If the CA program continues to work as an island within the agency, it will fail to be properly integrated into the program offices as they develop, promulgate, and enforce regulations. Similarly, without the input of the program offices, EPA's CA may not focus on the areas of highest need. Communication is the first and most important step in achieving program office involvement in EPA's CA program.

EPA should better educate the public, the regulators, and the regulated community regarding the improved environmental protection benefits and cost-efficacy of self-initiated or willing compliance, versus enforced compliance

By providing CA that makes the regulated community aware of compliance requirements, EPA can eliminate the most significant recurring root cause of noncompliance ("EPA/CMA Root Cause Analysis Pilot Project: An Industry Survey" EPA 305 R 99 001). The environmental impacts caused by facilities that are willing to comply but don't know what to do would be avoided, and the environment would be better protected. By recognizing compliance and beyond compliance performance as environmental protection goals, EPA can better support CA necessary for facilities to be able to willingly and voluntarily comply. Enforcement resources could then be targeted "smartly" at facilities that require government intervention to address the environmental impacts caused by their noncompliance. The environmental benefits of willing compliance and the importance of providing CA should be better recognized.

EPA should balance its current use of mass media and direct mail to more effectively advance CA

EPA regularly utilizes the mass media to publicize enforcement actions. Whenever EPA informs the media or others about compliance problems, it should, simultaneously, provide current websites and/or phone numbers where members of the affected industry can obtain compliance assistance (and note whether it is a confidential source). This same information should be included in EPA's Enforcement Alerts and in other compliance-related material. In addition, EPA should begin to regularly issue press releases on the success of CA actions.

To inform businesses in sectors with the highest and/or most toxic emissions that they are in a high emitting industry and may be an Agency focus, EPA should identify and use existing sector-based communication networks (both CA-focused

and others), as well as the medium of direct mail, to deliver appropriate CA information. The Agency should provide an opportunity for stakeholder involvement when planning initiatives focused on particular sectors.

These changes to EPA's current mass media and direct mail policies will increase the likelihood of regulatory awareness and source compliance for better environmental protection.

Development of an effective CA program will provide future benefits in supporting self-initiated and cooperative, non-regulatory environmental protection efforts that will be required for the next generation of environmental protection issues

It is imperative that EPA recognize the diversity of sources that can contribute to stress on the environment, and the importance of information and assistance to effect changes in their environmental performance. In order to achieve its goals and objectives, EPA will need to address not only traditional point sources, but also non-point sources of pollution; not only must large oil refineries and waste management facilities be engaged, but smaller area sources and waste generators, facilities with stormwater runoff, other businesses and even communities and individuals must also be part of the approach. In 1999 EPA released a Task Force Report, "*Aiming for Excellence: Actions to Encourage Stewardship and Accelerate Environmental Progress*," that addressed environmental problems that had yet to be solved through the current system. In the report EPA expressed its belief that "a system that promotes stewardship, in addition to compliance with environmental requirements, has the greatest potential for advancing environmental management capabilities and solving environmental problems." Development of EPA's CA program is critical to the establishment of a system that promotes voluntary and cooperative efforts.

IMPROVING COMPLIANCE ASSISTANCE MEASUREMENT

Current State:

The compliance assistance community lacks adequate systematic capabilities across all levels to collect and analyze information to demonstrate the impact of compliance assistance activities.

Significance of Measurement

There are a number of reasons that effective measurements are critically important for compliance assistance (CA):

- Publicly-supported CA programs need to demonstrate that they are delivering value for their clients and the taxpayers.

- Policy makers need a way to effectively assess CA and understand what programs work for use in setting priorities and program goals and objectives.

- CA programs need to evaluate their progress toward achieving their program goals.

- CA program managers need measurement tools that enable them to target resources in a way that enables them to constantly improve the management of their activities.

There may not be a single measurement system that can assist CA professionals in addressing all of these. Different systems may be needed to address each one. For example a measurement system designed to help improve CA project/program management will be different from one focusing on the measures needed for communicating behavioral or environmental results to the public.

There are two good measures of the value of CA to clients and taxpayers:

(a) Did the client gain an understanding of his/her impact on the environment and of what is required to comply with applicable regulations? One goal of CA is to ensure that people know that there is an environmental impact associated with a process or system they are using. Since most people do not wish to harm the air, land, or water, this step is important to achieving compliance. People also need to know which regulations affect them and how to comply.

(b) Did the client change their behavior or implement a technology or processes in a way that proactively reduced or eliminated their emissions, discharges, and wastes? When the person applies cleaner technologies, they reduce their compliance burden and their impacts on the environment and public health. In the near future the most feasible compliance assistance measures should focus on changes in compliance behavior at regulated entities.

A third measure that is sometimes suggested for successful CA is whether or not the physical environment improved as a result of CA. Such a measure can be misleading because effective CA may or may not equate to improvements in the environment. Compliance with record keeping requirements, for example, does not, in and of itself, result in decreased emissions to the environment. Hazardous waste generators must maintain their hazardous waste generation and shipment records on site for three years in order to be in compliance with regulations; such record keeping has no quantifiable beneficial environmental impact. The benefit is associated with helping to assure that the company has an effective hazardous waste management system in place. As such, accurate recordkeeping is an essential aspect of regulatory compliance. It is a task with which people frequently require assistance to ensure that it is done correctly and completely. CA efforts frequently rely on the rule itself as a measure of the impact that compliance will have on the physical environment. Rule development staffs frequently quantify the amount of emission reductions they expect from a certain category of rules. The assumption is that the emissions inventory or other characterization of environmental impact and improvement from which the rule writers are working is accurate and that the control measures are effective. In many instances, CA that emphasizes pollution prevention and best management practices as cost effective ways of achieving or exceeding minimum compliance requirements may have direct and measurable environmental benefits. Finally, the cost of measuring the direct impacts of rules and CA on the environment can be substantial.

Barriers to Measurement

Generally EPA has not appreciated that the primary goal of CA activities is to motivate and assist the regulated community to comply with regulation. Traditionally the Agency has focused on counting enforcement actions and penalty assessments as the primary measures of enforcement and compliance assurance program effectiveness. This is not an effective way to evaluate the overall success of the Agency in promoting environmental compliance. Often EPA lacks baseline information regarding compliance rates among regulated entities, and this creates a significant barrier to measuring the changes in those rates, which is the focus of CA and other Agency activities. Developing effective CA measures that provide data that can be aggregated on a nationwide basis requires a substantial commitment of resources, significant coordination across programs and types of CA providers, and a consensus-building process. If EPA is committed to implementing a national CA measurement system for state and local programs, resources will have to be provided for this function. This is because many state and local CA programs have experienced significant budget reductions in the past few years, and these programs should not have to trade off resources devoted to delivery of service with those needed for measurement.

There is presently no methodology or systematic program in place for collecting a consistent set of data on compliance assistance activities and their outcomes performed by non-EPA state or local government-based assistance providers, nationwide. Other cultural and institutional barriers and challenges to measurement include:

Lack of Agreement on What to Measure

- A lack of consensus among environmental assistance providers on what is important to measure.
- Lack of strong and supportive national leadership on CA measurement and inconsistent management support for measurement.
- Lack of buy-in among affected parties.
- An historical focus on delivery of service and a lack of integration of measurement into the service delivery process.
- Insecurity on the part of CA programs about what to measure to satisfy their funders' perceptions that money is well spent.

Inadequate Resources

- Costs of conducting effective CA measurement.
- Lack of incentives for programs to invest staff and other resources to develop and maintain effective measurement systems.
- Uncertainty over how the measures will be used—a failure to connect positive benefits to the effort of information collection.

Lack of CA Measures & Framework for Data Collection

- Complexity of CA measurement.
- A lack of a structured method, framework, and process for non-EPA entities to manage and combine data, and lack of baseline data.
- Difficulty separating the behavioral and other impacts of compliance assistance from enforcement presence and activities.
- Lack of consistency in reporting CA activities and their outcomes among CA providers.
- Lack of widespread use of performance measures to demonstrate CA effectiveness.
- Lack of the understanding and use of environmental and behavioral indicators to demonstrate CA effectiveness.

Inadequate CA Measurement Capabilities Among Providers

- Inadequate training and capability in data collection, management, and analysis among environmental assistance providers.

Despite these barriers, the CAAC believes that it is possible to develop a high quality measurement system that focuses on EPA, state, tribal, and appropriate local government CA providers. However, to be successful in developing and implementing a system that will be used nationally, there needs to be strong and supportive national leadership and buy-in from affected parties, a commitment to provide adequate resources for CA generally, and recognition that performance measurement does not come without cost.

Recommendations

The CAAC recommends that US EPA pursue the development and implementation of a high quality, long-term measurement framework that will provide CA practitioners nationwide with tools and resources for collecting, aggregating, and presenting CA outcomes. This is a long-term goal that the Agency should aggressively pursue. To achieve this goal, the CAAC offers these recommendations which complement and reinforce the recommendations made by the previous CAAC and outline a number of interim steps that are necessary to achieve this goal. In developing and implementing such a system, the CAAC feels it is critical that:

- The system emphasizes clear, simple measures, such as whether entities are in compliance with environmental requirements;

- The measures should be used as a complement to counting the number of non-CA related enforcement actions or the amount of penalties collected; thus enabling the evaluation of environmental progress to focus on compliance success and more accurately target areas of failure for which CA could be an effective tool;

- EPA must commit the resources necessary to produce effective CA measurement if CA is to be used as a long-term strategy for developing continuous environmental improvement;

- EPA must aggregate information provided by local, state, tribal, and regional CA providers, as well as EPA to produce effective tools and analysis of CA activities.

The CAAC recommends the following specific actions on the part of EPA to pursue the objectives described above:

<u>Keep Measurement Simple & Universal</u>

- The Agency needs to take the necessary steps to ensure that all organizations within EPA that are involved in providing CA services institute adequate and

appropriate CA performance measures. While EPA has identified state and tribal partnerships among the cross-goal strategies in its Strategic Plan, the Agency needs to identify cross-program, sector-based performance goals and focus on implementing the necessary partnerships with identified sectors to ensure that all programs offices work together to achieve those goals.

- The Agency should focus on establishing baseline data and evaluating compliance trends and using compliance changes and improvements as key measures of CA success.

- EPA should work with state, tribal, and local CA providers to develop a set of simple measures that focus on the types of activities and programs that they undertake. The Agency should focus resources toward research that evaluates the effectiveness of compliance assistance methodologies, rather than asking each program to independently and continuously measure the effectiveness of each approach. This research should underpin recommended approaches to delivering CA at the state and local level.

- EPA should examine the wealth of experience and information that is available from other agencies that have not had the coexistence of an enforcement approach, e.g., energy efficiency, tobacco consumption, nutrition, food safety, AIDS prevention, auto safety, consumer awareness, and others. The USDA cooperative extension program is grounded in methodology to diffuse new technologies. EPA should review and identify the best management practices in public education at other federal agencies and in some successful private sector efforts to learn from and adopt those approaches that others have tried and found effective.

- EPA needs to rigorously examine the measurement data that is currently available and analyzed and clearly communicate the limits of the information that is collected. If CA measurements are to be credible, they should not be done piecemeal but should be made as a joint priority for EPA, and other scientific and economic entities as are appropriate. There is an important unrealized opportunity for EPA, in association with other federal agencies, to research, test, and evaluate the effectiveness of various CA techniques/ practices so that this information could be shared across all CA programs to assist them in more efficiently delivering their services. Some programs may tend to broadly claim affects beyond the actual measurable results of an activity, e.g., tons of non-emissions due to the delivery of a fact sheet. Too often, project managers are seeking environmental result measures from activities that have no direct causal relationship with those impacts. This does not mean that such activities do not contribute to environmental improvements, but the influence of these activities cannot be easily measured.

- EPA should adopt and promote the "logic model" (Appendix B) as the basis for developing outcome measures, and educate its staff on its use. EPA should

require a completed logic model for all substantially large grants, contracts, and external program funding in support of CA.

- The Agency needs to start by investing in the implementation of a set of relatively straightforward ways of assessing whether regulated entities are generally in compliance with environmental requirements and the prevalence of various categories of violations and sectors where chronic non-compliance tends to be high, particularly associated with the potential for environmental harm. Furthermore, EPA should use its Agency-wide measurement capacity to identify areas of greatest need for protection of human health and the environment, and CA programs should prioritize efforts to focus on those top needs.

- EPA should develop a tiered approach to reporting/measurement for CA projects dependent on the level of funding received from the Agency. As discussed by the previous CAAC, we support a monetary threshold for mandatory measurement activities to reduce the overburdening of CA programs with operating budgets below the threshold.

- As recommended by the previous CAAC, a request for follow-up information from the regulated entity receiving assistance should be made from the compliance assistance provider regarding resulting impacts on environmental performance (e.g., waste/emissions/discharge reductions); however, we feel the requests for information should be voluntary and correlated to the level of assistance provided. Environmental outcome measures may be appropriate for in depth consultations and hands on assistance; however, the majority of compliance assistance activities being provided would not create the data this recommendation is seeking. Again, improvement in compliance and improvement to the environment are not generally synonymous. Mandatory requests for information could have a negative impact on the number of companies seeking assistance if it is seen as burdensome or intrusive.

Focus on Compliance Behaviors & Trends in the Regulated Community

- EPA should use a consistent and systematic approach to measurement to help identify the mix of CA activities that is most effective in promoting and producing increased compliance; measures that can differentiate preferred approaches that deliver prioritized outcomes would serve to improve the effectiveness of service delivery both within and external to the Agency.

- CA providers need improved ways to track and measure compliance improvement as a result of CA activities; examples of possible measures are provided in Appendix C.

- While CA efforts do not always result in measurable environmental impacts, efforts should be made to measure and document improvements when they occur.

- Recognition should also be given to effectiveness of maintaining compliance with regulations as a measure of CA.

- EPA should research and study which activities induce educational and behavioral changes that have causal impacts on the environment; where the success of the activities has been demonstrated, continued demonstration should not be needed. For example, if, after a number of high quality studies of the results of compliance assistance activities (i.e., workshops, one-on-one assistance, or publications) targeted toward a particular sector or regulatory requirement have found that a certain percentage of the participants in that activity implemented compliance improvements, the Agency should allow CA programs to utilize that rate for extrapolating the results of other, similar activities with the sector or regulatory requirement. This would enable the programs to avoid having to extensively measure the results of similar activities each time they are conducted.

- EPA should develop and implement a single, consistent set of measures for assessing the outcomes and impacts of all four components of its integrated compliance assurance program (monitoring, CA, incentives and enforcement).

- EPA needs to develop improved baseline data on compliance rates for targeted sectors or regulations to help evaluate the effectiveness of CA (see Appendix D for one example of a state that has undertaken such as effort).

Provide the Necessary Support & Resources

- Quantifying the value of CA activity is resource intensive; EPA must ensure that adequate resources are allocated to CA measurement. EPA should budget measurement funding within programs commensurate with expectations of measurement objectives. Service delivery may be impacted as much more emphasis is placed on measuring outcomes and on measurement. This should be understood and communicated to stakeholders and collaborating CA programs. The infrastructure necessary to accomplish compliance assistance measurement must be in place at the initiation of CA activities so that the measures can be implemented throughout the CA project or program.

- EPA should use cost-effective, statistically valid measurement systems that demonstrate the outcomes and impacts of efforts, rather than attempting complete measurement of every aspect of every program. By using agency resources to test and recommend best practices instead of requiring each program to verify the results of each activity, resource utilization can be extended. In instances where the Agency is able to gather statistically valid per-

formance data for CA activities, the Agency should allow individual CA programs to use this performance data as a surrogate for actual performance measurement.

Training CA Managers & Providers in Implementing Measures is Critical

- EPA needs to continue to develop and deliver training to CA program staff on basic measurement techniques and strategies, including the use of logic models described in Appendix B. EPA must take the necessary steps to provide measurement training for all staff involved in providing CA services. Such training should focus in particular on effective data collection, data management, and data reporting techniques and skills.

- EPA should develop a strategic planning and performance measurement training component for CA mangers with an orientation on the development and use of strategic planning and program performance measurement.

CA Measurement Clearinghouse

EPA should support and improve CA program measurement through its web-based Compliance Assistance Clearinghouse by identifying effective CA measurement techniques that can help CA programs determine:

- Which CA techniques are better suited for short-tem vs. long-term outcome shifts in a target audience.

- Which techniques are more suited for individual target audiences or individual environmental contexts, e.g., non-point source v. point source pollution sources.

- If it can devise a list of techniques or a matrix to help CA programs best develop an outcome-oriented CA plan.

- If there is a specific set of techniques that most effectively leads target audiences through the "Stages of Change" (Appendix B).

- If retail CA programs (those that deliver compliance assistance directly to end-clients) are accountable for environmental outcomes.

- If these programs set outcome priorities for which CA is a useful tool.

- What data is it logical to expect from retail CA programs.

- Where a CA provider seeks only to bring the target audience into regulatory compliance, if there is a logical and/or causal linkage to environmental performance.

- If there is a link between regulatory compliance and environmental impact.

- The resources CA programs need to achieve their goals and focus their efforts on the top needs.

There are many examples of useful and interesting CA measurement projects that have been undertaken by regional and state CA programs around the country. Examples of case studies of effective performance measures that were described at the Compliance Assistance Providers Forum in 2003 are the following:

- Hazardous waste - tracking pounds reduced through a voluntary reporting program.

- Small business - track how much assistance people are getting, how many took advantage of visits, and the results of follow-up visits.

- Texas has developed a performance measurement system that evaluates the impact of EMS and Regulatory Flexibility programs - based on self-reported information.

- Clean Texas 2000—voluntary program involving 200 industries. Tracked regulatory measurements under TRI and hazardous waste generation reports (e.g., tons of emissions reduced, off- site disposal).

- Auto dealers - track money saved in reduced disposal costs and reduced product costs from product substitutions. Track benefits to the bottom line. Relate money to reduced emissions through disposal costs.

- Used the Web as a tool for gathering measurement information, but there were challenges, including: tracking who uses your site, surveying users, and how to measure sector performance from various sources.

- Environmental outcomes from CA and other activities including the EPA Region 1-NE Charles River initiative that focused on tracking improvements in water quality, a Minnesota project that tracked changes in VOC emissions from waste a MA DEP Environmental Results Projects project that focused on a set of specific environmental outcome results and changes in compliance rates, and an initiative in Maryland that targeted marinas and tracked the changes in behavior associated with compliance.

EPA should examine the measures used in these and many other examples and promote their greater utilization and catalog them in the online national compliance assistance measurement clearinghouse.

IMPROVING THE COMPLIANCE ASSISTANCE NETWORK

Current State:

The present compliance assistance (CA) network does not adequately deliver the types of assistance needed by the regulated community to attain compliance with environmental regulations. In general, the methodologies used by EPA and other providers across the CA network fail to reach significant portions of the regulatory community because the delivery strategies (1) often do not identify and adequately address all the barriers to behavioral change in the target communities, (2) generally do not identify and incorporate the most effective communication channels to reach their target communities, and (3) occasionally send inconsistent or conflicting messages regarding what is expected of the target communities to attain compliance. Finally, additional organizational support and training will be required for Agency staff to address the recommendations herein to properly deliver the assistance needed.

Previous CAAC Recommendations

The August 13, 2001 report of the first CAAC addressed improving the effectiveness of compliance assistance programs. This included recommendations for developing and delivering effective compliance assistance delivery tools. Specifically, the report included a detailed process for establishing a systematic approach to the development of compliance assistance tools. The recommendations in this report build on the first CAAC recommendations and cannot be achieved without first implementing the tool development recommendations. Additionally, as discussed in the first CAAC report, adequate resources at the Federal, State and local levels are needed to conduct a compliance assistance effort that is credible and effective.

Problem:

The wholesale-retail model of CA delivery can be improved to increase its effectiveness in information distribution.

EPA's current CA delivery system is based on the wholesale/retail model. Generally EPA will develop CA materials and other organizations will distribute them. This is not the true way that CA works. For example, Figure 1 (furniture example) shows the sources of information a single facility may need to access. Sources can range from the vendor to sister plants and trade associations. As within any network, the top sources used will depend upon trust, familiarity, and access. However, the quality and reliability of the information provided by the network can vary greatly between the sources. Another issue of importance is how to provide the information to the target audience. Again this will vary greatly between sectors and even within a sector. This was discussed in the first CAAC report.

Figure 2 (Networking Matrix) shows an example of the different sources, delivery mechanisms, and product quality for a targeted sector. As can be seen there is a great range of providers and materials that are available, and EPA is only one of many material providers.

Recommendations:

During the development of any CA delivery program the existing network for the targeted population must be mapped and analyzed.

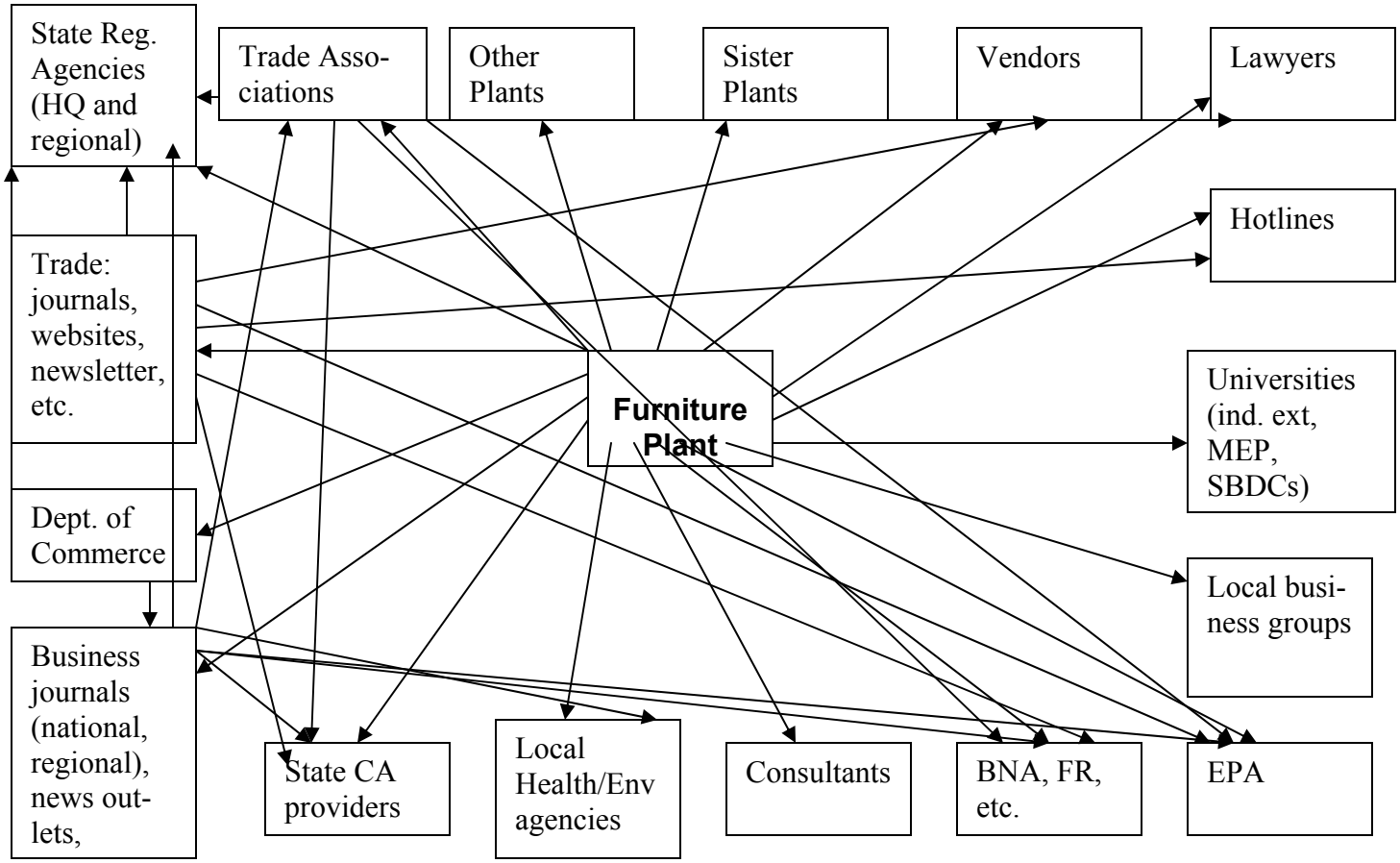
The CAAC recommends that during the development of any CA program the existing network for the targeted population be mapped and analyzed. This will identify the key players in the network, informational needs, effective dissemination tools and the most effective dissimilation process. As discussed in the first CAAC report, a process should be identified and followed which uses these key players in the development and delivery of the CA tools.

To assist EPA and the network of CA providers in this effort, the CAAC has developed CA-Mapper (Appendix D), a survey-based visualization tool for understanding the CA network. CA-Mapper can be used tactically to identify the most effective pathway(s) for delivering CA to a single end-user or group of end-users, or strategically, for allocating resources across multiple layers and pathways in larger CA networks. CA-Mapper uses a generic survey questionnaire to gather information regarding the accessibility, reliability and influence of CA wholesalers toward CA retailers, and CA retailers toward end-users. The questionnaire also gathers information on "influencers," entities that do not presently deliver CA but significantly impact the environmental decisions of the respondent. Data from the questionnaire can be uploaded into a simple spreadsheet containing the respondent's profile as well as the respondent's assessment of each CA provider and influencer.

EPA needs to recognize the limits of the wholesale-retail model, and make reasonable demands on the education outreach related to it.

The CAAC recommends that EPA recognize the strengths and weaknesses of information-focused, mass-market education campaigns, and build on their strengths while it considers how to compensate for their weaknesses. The strength of the wholesale-to-retail concept is that it can provide an effective awareness building and knowledge creation campaign. It can, with the proper emphasis, create intent to change, which is lacking in some of the current EPA efforts. Providing detailed, comparative information as a reference or resource also aids the target audience in making a decision on *how* to implement a technology or best management practice after they have decided change should be made.

Figure 1 – CA Information Sources for Furniture Plant



To the extent practicable, EPA should implement the recommendations on developing and delivering effective compliance assistance tools presented in the first CAAC report. Implementing these recommendations will result in a systematic approach to the development and deployment of compliance assistance coordinated between OECA, Program and Regional Offices, States and Tribes, pollution prevention and small business assistance providers. This approach will use a standard process to identify the needs of the targeted audience, develop appropriate tools and ensure effective delivery mechanisms.

EPA needs to improve its identification and support of communication methods that create information of use to the regulated community. EPA should apply resources to identify, nurture and deploy best CA practices, tools, and techniques to CA service providers.

EPA needs to implement the recommendations on developing and delivering effective compliance assistance tools presented in the first CAAC report. In addition, the CAAC recommends that EPA measure which CA activities and outputs can reasonably be accomplished with limited resources, as it strives to broaden CA activity for all programs. EPA should fund and test best practices for CA and disseminate the outcomes to all programs for which those practices are most cost effective.

The CAAC recommends that EPA work to develop in-context information for its target audiences. By in-context, the CAAC means that the information should be provided when and where it is needed, at the points where the target audience has the authority to act upon the information or from influential near-peers. This does not mean working with other retailers; it means studying the consumers to determine their current education and behavior status, and identifying what points in the communication continuum are most effective for insertion of information. Compliance occurs by individual decisions that are made throughout an organization. EPA needs to develop tools and messages that can be inserted into existing communication networks at the point of decision.

Problem

Current CA efforts do not adequately recognize the importance of behavioral approaches to promote compliance and environmental performance changes by regulated entities. Consequently, much current CA activity, particularly within EPA, is directed toward widespread deployment of regulatory information. Social marketing and behavioral change approaches that could improve the efficacy and impact of CA efforts are under utilized.

Figure 2 – Networking Matrix

Information sources (wholesale)	Major	Minor	Quality	Dissemination Tools	Effectiveness	Delivery (retail)	Effectiveness	Customers
								Businesses
Public Sector				Federal/state Registers	L	Public Sector		Government Operations
Federal Government				Hotlines	L	Federal Government		Vendors and Suppliers
EPA				Websites	m/l	EPA		Trade Associations
Media Offices	x		h	Listserves	L	Media Offices	L	Environmental agencies
Regions	x		h	Newsletters	M	Regions	I	NGOs
ORD		x	h	Manuals/factsheets/etc	M	ORD	I	Env Assist. Providers
Contractors		x	m	Seminars/Workshops	m/l	Contractors	I	Private Consultants
National Compliance Centers		x	h	trade-shows/conferences	M	National Compliance Centers	m/l	
P2Rx		x	h	Word of mouth	H	P2Rx	m/l	
DOD		x	h	Advertisements	L	DOD	m/l	
				one-on-one	L	DOT	m/l	
State/tribe Government				video/CD's	M	GSA	m/l	
Env. Regulatory Agencies	x		h	Technology demonstrations	L	DOL	m/l	
SBAPs	x		h	Library of tech. Information	M	DOE	m/l	
P2 Programs	x		h	Expert Systems	m/l	SBA	m/l	
SBDC		x	h	Incentive programs	m/l	DOC	m/l	
Dept of Commerce		x		Videoconferences	m/l			
Compliance Assist. Programs	x		h	Educational materials/curriculums	m/l	State/tribe Government		
				Mentoring	L	Regulators	M	
Local/Regional Government				Compliance audits	L	SBAPs	M	
Regulatory Agencies	x		m	SEP's/negotiated	L	P2 Programs	m	

Figure 2 – Networking Matrix

				agreements			
				Partnerships	M	SBDC	M
Private Sector						Dept of Commerce	L
Corporate environmental/legal	x		m			Compliance Assist. Programs	M
Private Consultants			m			OSHA	
Vendors		x	m				
other businesses			l			Local/Regional Government	
Suppliers		x	m			Regulatory Agencies	M
Trade Publications		x	h			Health Dept.	L
						Fire Dept.	L
Not for Profits						POTWs	M
NGO's		x	h			Insurance	L
Trade Associations	x		h			Finance	L
						Business License	L
						Economic Dvlpt.	L
Academic/research							
University Centers		x	h			Not for Profits	
MEPs		x				NGO's	M
						Trade Associations	H
						Chamber, civic organizations	M
h=high							
m=medium						Academic/research	
l=low						University Centers	m/l
						MEPs	m/l

Figure 2 – Networking Matrix

Major=major source of wholesale information

Minor=minor source of wholesale information

Private Sector	
Corporate environmental/legal	h
Private Consultants	h
Vendors	h
other businesses	h
Suppliers	h
Media	l

To be clear, the role of compliance assistance is to help the regulated community achieve compliance with applicable regulations. If the regulated community organization is out of compliance, the goal of the CA actions is to bring the organization into compliance. In order to do that, the organization, or some of its staff, will necessarily need to change a process or procedure to become compliant. That change represents a change of behavior. Therefore, one of the goals of CA is to change behavior. How that is accomplished is discussed below – but it ranges from simply supplying informational materials for a receptive organization to working closely with an organization to identify and change perceptions, attitudes and organizational culture for organizations that have a lower priority for environmentally beneficial actions. CA stops short of applying enforcement tools to stimulate change.

Recommendations:

EPA should build upon recognized behavioral models, such as the Stages of Change, to improve the effectiveness of CA.

The CAAC recognizes a range of activities is necessary to provide a spectrum of incentives to foster compliant behavior by regulated entities that have different levels of understanding, skills, resources, and that have different priorities of how to use them.

In brief, the model framework is based on the *Transtheoretical Model*, a model derived from a comparative analysis of leading theories of behavior change. The model is more commonly referred to as the *Stages of Change*, which represents change as occurring in discrete steps. The US Environmental Protection Agency (EPA) and related environmental protection programs have a shared interest in determining how to move a regulated community (or its members) from activities that harm the environment to actions that protect human health and the environment.

The following chart provides a glimpse of this continuum:

Continuum of Education, Assistance, and Law

Prone to behave as desired		Resistant to behave as desired
Easy to see or convey self-interest		Can't see and can't convey self-interest or benefits
Education	**Persuasion**	**Law**
<Continue behavior>		<Change behavior>
No or weak competition	Passive-active competition	Unmanageable Competition

(Glanz, 2002[1])

The first line describes the tendency of the regulated community or community member to comply with pertinent regulation(s). The second line implies the perception of the regulated community that is driving this behavior. The third line suggests the appropriate methods of interaction

[1] Glanz, k., Rimer, B.K., Lewis, F.M., *Health Behavior and Health Education: Theory, Research, and Practice*, 3rd Ed., 2002, Jossey-Bass,

for the spectrum of behavior identified in the first line. As noted in the fourth line, the methods should be honed to assist or to alter the behavior of the regulated community. The last line indicates the level of "competition" for the regulated community's attention in these matters, or relative plentitude of other demands on the attention faced by the regulated community at each level.

All of this is to say that at one end of the spectrum lies one segment of the regulated community that only needs education to achieve compliance. The CA and regulatory agency should focus on distributing proper notification of a regulation, and in developing interpretations in the format that is usable and applicable to their setting. At the other end of the spectrum lies another segment of the regulated community that will only respond to enforcement as a sufficient mechanism to achieve compliance. The enforcement arm of the agency exists to deal with this subgroup.

In the middle lies a significant portion of the regulated community for whom SBREFA was written[2], for whom compliance assistance programs require more than simple brochure development and dissemination, more than workshop delivery. Example activities include: on-site assessment and individual technical assistance (recognized[3] as more effective that distributed information and workshops), establishment and management of peer support networks[4], social marketing programs that seek to identify and amplify positive incentives for (while reducing barriers to) change.

This spectrum defines the activities associated with CA – education and assistance, and provides context for the continuum of when these activities are appropriate relative to the legal actions used by enforcement staff.

EPA should provide training and support to CA providers to integrate behavioral sciences into CA planning and delivery.

The CAAC recognizes that most CA providers are not trained nor have any experience in the behavioral sciences. Most existing CA providers are more skilled as lawyers and engineers, than social scientists. CA providers need support and training to begin developing the skill sets needed to integrate social marketing approaches into their CA programs.

Recognizing the importance of behavioral approaches to promote compliance and environmental performance, the CAAC recommends EPA invest resources into developing the necessary tools, training and technical support needed by Federal, State and local CA providers.

EPA should identify and evaluate programs at federal, state, tribal and local agencies that have proven effective in using recognized behavioral models. These best management practices can then be incorporated into CA-based efforts.

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[2] SBREFA requires regulatory agencies to work with the regulated community

[3] *Making Our Nonpoint Source Pollution Education Programs Effective*, Shepard, Journal of Extension, 10/99, http://www.joe.org/joe/1999october/a2.html

[4] Also known as *communities of practice*, http://www.co-i-l.com/coil/knowledge-garden/cop/lss.shtml

Many other public programs at the federal, state, tribal and local levels use a non-enforcement approach to change behavior with different levels of success. For example, the USDA cooperative extension program has been very effective and is grounded in methodology to diffuse new technologies and approaches into everyday farming activities. The CAAC recommends that EPA canvass these other programs to identify and evaluate best management practices that can make CA programs more effective.

EPA should establish a Blue Ribbon Advisory Committee to guide the agency on the incorporation of sound behavioral models into CA efforts.

The CAAC recognizes that EPA does not currently have the expertise to research, develop and implement CA efforts based on sound behavioral models. The CAAC recommends that EPA draw on the knowledge and expertise of nationally recognized experts on behavioral change. A Blue Ribbon Advisory Committee should be established to bring together these experts to provide EPA with the guidance and technical expertise needed to develop the policies, tools, training and other efforts needed to support the recommendations in this section.

Appendices

APPENDIX A

Compliance Assistance Self Assessment Tool

Compliance Assistance (*CA)*[5] is a critical, but often overlooked, aspect of EPA's environmental protection and improvement mission. Broadly defined, CA encompasses the work that we all do to help others understand and comply with regulatory requirements. In some respects, it is the "stealth" component of compliance assurance – operating quietly alongside more visible enforcement-oriented tools. When effectively executed, CA can prevent or significantly reduce the number of regulatory infractions. With proper resources and management, CA provides the means to advance understanding of an extremely comprehensive, complex and ever changing regulatory framework. It provides a necessary and constructive tension to a multi-pronged compliance assurance strategy that, when done well, results in significant increases in environmental and public health benefits.

It is reasonable to expect widespread achievement of the Agency's performance goals only if there is an effective effort to educate the regulated community on the requirements of the law, its objectives, and effective methods of achieving them. Compliance Assistance, as the outreach and education component of the Compliance Assurance effort, is a necessary and practical means of performance goal attainment.

CA is the responsibility of the entire Agency. While it is an explicit charge of the Compliance Assistance and Sector Programs Division within the Office of Enforcement and Compliance Assurance (OECA); in fact, many programs and offices are already engaged in and conduct CA activities.[6] However, responsibility for the planning, administration, implementation, monitoring and measurement of the Agency's CA activities is not always clearly established and defined. Thus, while substantial resources may be allocated to CA activities, they are not always effectively and properly accounted for, and, further, as a result of the broad and diverse application of CA, there is no integrated mechanism for determining whether the level of resource allocation is sufficient and best applied. Putting a Management System in place for CA will result in a universally recognized approach to efficiently develop and deliver CA and demonstrate its impact on our goals for human health and the environment.

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[5] *Compliance Assistance* is officially defined by the U.S. EPA as activities, tools or technical assistance which provides clear and consistent information for 1) helping the regulated community understand and meet its obligations under environmental regulations; or 2) compliance assistance providers to aide the regulated community in complying with environmental regulations. Compliance assistance may also help the regulated community find cost-effective ways to comply with regulations and/or go "beyond compliance" through the use of pollution prevention, environmental management practices and innovative technologies, thus improving their environmental performance. CA includes activities that are commonly described as technical assistance, environmental assistance, environmental management assistance, and pollution prevention assistance within the Agency and the stakeholder community. The self assessment tool is a systems-based approach drawn from proven management systems and the work of Drucker, Deming, and others that have studied, practiced, and refined the process of organizational management.

[6] Some examples of these include, but are not limited to: Integrated Strategies, Pollution Prevention, Environmental Management Systems, Small Business Ombudsman and Small Business Assistance Programs, Capacity Building, Incentive and Voluntary Programs.

The CA Self-Assessment Tool has been designed by the Compliance Assistance Advisory Committee (CAAC)[7] and is proposed for EPA's use to assist with the process of developing and improving CA management and the implementation of CA throughout the Agency by strengthening its management system orientation. The tool is intended to assist the Agency in enhancing the integration of and the accountability for its CA activities Agency-wide. For EPA to effectively utilize CA as one of the mechanisms for achieving environmental protection and improvement, it should assess the system in place for managing the CA program. The tool addresses key program elements in 5 basic areas: Policy, Planning, Implementation, Measurement, Management Review and Program Adjustment.

Establishing a proven organizational management system approach should allow the Agency to efficiently manage resources, effectively develop and deliver CA, continuously improve, and better protect human health and the environment. This self-assessment can be utilized for assessing the Agency-wide CA program as well as Regional CA programs, or the programs of individual Program Offices, Divisions, Branches, Sections, or individual projects within the Agency. The CAAC believes this tool can also be beneficially applied to assess compliance assistance in state and local programs and other stakeholders external to EPA. The questions in the assessment were designed to be used in an Agency-wide program evaluation. Some of the questions may not be as relevant if the tool is used to assess CA within EPA Program Offices, specific projects, or by CA stakeholders external to EPA. In these cases the user's judgment and discretion should guide them through the appropriate questions to include for these purposes.

Effectively applied, CA can be a way of simplifying and expediting the task of Compliance; inappropriately applied; it can become an additional element of confusion and bureaucracy. This Self-Assessment tool is intended to further the goals of effective CA by providing a quick snapshot to measure status, progress and needs. It needs to be recognized as a tool, not an end in itself, and its application should be simple, streamlined and efficient.

Policy

<u>Element 1: Compliance Assistance Policy</u>

A policy that expresses the Agency commitment to utilize CA to achieve the Agency's human health and environmental protection goals should be established and communicated within the Agency and to external stakeholders.[8]

- Is this policy present?
- Does the policy include a tightly defined focus on what needs to be done?

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[7] The CAAC is a FACA subcommittee of the National Advisory Council for Environmental Policy and Technology. This Self-Assessment builds upon CAAC recommendations previously submitted to EPA by NACEPT including, *Maximizing Compliance Assistance: Recommendations for Enhancing Compliance Assistance Opportunities at EPA and Through Other Providers* (8/13/02), and comments on EPA draft Strategic Plan Architecture submitted January 2003. The Self-Assessment Tool was developed and submitted in conjunction with NACEPT CAAC recommendations provided to EPA in June 2004.

[8] Stakeholders is a broad term that includes: the regulated community, business, trade, and non-profit organizations, assistance providers, consultants, federal, state, and local agencies, and others.

- Does the policy include an assured commitment to CA and the principles of continuous improvement?
- Is the policy Agency-wide and supported by top-level management?
- Does it serve as a framework for how EPA sets its CA goals and objectives in support of the overarching mission of the Agency?
- Is it communicated to EPA employees, state assistance grant recipients, contractors and partners?
- Is the policy communicated to and understood by external stakeholders?
- Is the policy incorporated into the Agency's programs, procedures and practices?

Planning

Element 2. Goals and Objectives for Continuous Improvement

The Agency should establish CA goals and objectives. These should reflect identified priorities related to the Agency strategic plan, program objectives, regulatory development, legal and other requirements. The Agency should establish an action plan that designates schedules, milestones, resources, and responsibilities for achieving these program objectives.

- Are CA goals and objectives established?
- Do the CA goals and objectives reflect "top-down" management commitment and "bottom-up" involvement?
- Were the CA goals and objectives developed in consultation with stakeholders and do they reflect their input and commitment?
- Do these reflect identified priorities?
- Are the CA goals and objectives well defined and measurable?
- Has an action plan been developed for achieving these goals and objectives?
- Have the resources (human, technical, and financial) necessary to achieve the CA goals and objectives been identified?
- Is progress being tracked toward achieving the goals and objectives?

Element 3: Planning and Assessment

The Agency should plan for and identify how CA is to be provided in conjunction with EPA's environmental mandates and responsibilities and establish key measures and milestones for assessing the utilization and integration of CA within the Agency's environmental protection activities.

- Are CA activities considered and incorporated in the Agency's environmental protection planning process?
- Are key Agency activities identified which trigger inclusion of CA in the planning process?
- Is CA addressed in the Agency's program plans and planning guidance with the Regions and States?

- Are resources (EPA, partner, and stakeholders) adequately allocated to support CA activities?
- Is the use of CA in the Agency planning process tracked and assessed?

Element 4. Regulatory Development, Legal, and Other Requirements

The agency should include CA considerations in regulatory development activities. Consideration of the regulated communities' ability to understand and implement regulations should be included in the design of regulatory requirements and in the development of EPA programs to implement the regulations. Small Business Regulatory Enforcement Fairness Act (SBREFA) requirements and other regulatory flexibility opportunities should be incorporated into the EPA CA planning process and pertinent information from regulatory reviews[9] should be communicated and utilized to improve EPA's inclusion of CA in plans for regulatory development when applicable.

- Has the Agency included a CA analysis as part of the analytic blueprint for each new regulation?[10]
- Has the Agency conducted an assessment of CA needs associated with various regulatory options?
- Do *Federal Register* publications of proposed and final rules include a description of plans for CA tools or activities that will be developed or conducted to support implementation of new regulations?6
- Are arrangements with other stakeholders in the CA network included in the Agency's process to plan for implementation new regulations?
- Has the Agency estimated, considered, and minimized the time and costs needed to determine whether and how the regulations apply?[11]
- Does the Agency test new regulations with stakeholders and use the feedback to determine if it can be easily understood and implemented, and whether it accomplishes the end goal?
- Does the Agency document and integrate its experience and lessons learned from previous regulatory development efforts and apply them to regulations that are being developed to ensure that future regulations are written in a manner that is easy to understand and, to the extent practicable, to comply with?

Element 5. Engaging Stakeholders and Building Partnerships

The Agency should involve representatives of the regulated community, tribal nations, state and local environmental agencies, and assistance organizations, non-profit organizations and the general public in the CA planning process. The Agency should communicate throughout the planning process to allow these representatives to express their views and perspectives relative to key

[9] Section 610 of the Small Business Regulatory Enforcement Fairness Act requires that all regulations having a significant impact on small entities be reviewed every 10 years to assess how the regulation was developed, implemented, and the impact and outcomes of the regulation.
[10] CAAC Report 8/13/01
[11] CAAC EPA Strategic Plan Architecture Comments, January 2003.

activities for measurement and assessment, regulatory development, and goals and objectives, and to be informed of the Agency's plan and appropriately included in the plan as it is developed and updated. The Agency should look within itself for regional/local involvement to assure that approaches meet the specific tailored requirements of "real" users and providers.

- Is there a process in place to involve stakeholders in CA planning?
- Does the Agency's CA network include representatives from this stakeholder group?
- What are the mechanisms for communicating with these stakeholders?
- Does the Agency have effective programs to build understanding of the realities of the regulated community among its regulators, litigators, and developers of compliance assistance?
- Is there a process in place to receive and consider stakeholder input?
- Is it incorporated in the CA plans?
- Are the stakeholder activities that contribute to the delivery of CA included appropriately in the Agency's plans?

Implementation

Element 6. Roles and Responsibilities

The Agency should establish assigned roles and responsibilities for its CA program activities. The roles and responsibilities should specify programs, and specific positions within those programs that are accountable. Sufficient human, technical and financial resources should be provided for the roles and responsibilities.

- Does the Agency, and applicable organizational units within the Agency, have an individual with responsibility for ensuring that the CA program is implemented?
- Are CA roles and responsibilities identified in organizational operating plans, descriptions of position responsibilities, and performance standards?
- Are the roles and responsibilities described sufficiently and specifically enough to convey a clear understanding of what the program or position is responsible for doing that can be tracked in a meaningful way?
- Are roles and responsibilities of the stakeholder groups negotiated, established and agreed upon?
- Are sufficient human, technical, and financial resources provided to effectively execute these responsibilities?

Element 7. Training

The Agency should develop guidance and training on CA to ensure that its employees responsible for CA implementation understand these responsibilities and are competent in performing them. The guidance and training provided to Agency employees should include examples of how CA can be effectively incorporated in various Agency functions ranging from research, to rule development, permitting, monitoring, and enforcement. Training should provide Agency em-

ployees with awareness of operational issues affecting regulated entities. The guidance and training should also provide Agency staff with the knowledge and tools they need to involve appropriate external stakeholders in their CA activities.

- Does written guidance on the CA program exist?
- Are all employees made aware of CA and the Agency's CA policy?
- Has a training program been developed?
- Is the training sufficient to provide personnel with competency for conducting CA responsibilities?
- Has the training been delivered to the appropriate Agency personnel?
- Do new or reassigned employees receive CA training?
- Are CA training records maintained?
- Is training provided to personnel in stakeholder groups involved in implementing the Agency's CA program?
- Do stakeholders have adequate access to CA training?

Element 8. Communications

Communication is critical to effective implementation of compliance assistance initiatives. The Agency should ensure that communication of CA information, activities, plans, expectations and achievements occurs both within the Agency and externally to other stakeholders and partners. The Agency should also ensure that communication occurs across programs, and from field staff and external stakeholders back up through the organization.

- Is there a process in place for outreach and external communications with respect to the CA program and other related resources?
- Is there a process in place to assure effective internal and external communication of the CA program including the policy, goals, roles and responsibilities, and achievements?
- Is there a means of reviewing the effectiveness of communications?
- Is there a system for top-down, bottom- up, and cross-program communication for CA coordinators, management, staff, stakeholders, and CA providers.

Measurement

Element 9. Measurement

In order to assess progress and performance toward achieving its CA goals and objectives the Agency should establish, monitor and maintain CA measurement procedures.[12] The measurement procedures should allow EPA to monitor whether milestones are being met and whether CA is

[12] For the most part, measurement in this self-assessment document is designed to measure how the Agency is utilizing CA and integrating CA into the environmental protection activities it undertakes. Measurement of the outcomes of CA activities is another important aspect of measurement that is addressed in more depth separately in these CAAC recommendations.

being utilized and integrated within the Agency's environmental protection activities, and whether EPA is meeting applicable legal and other requirements for conducting CA.

- Is there a system for tracking progress toward achieving CA program goals, objectives, and milestones? How is this progress tracked?
- Are human, technical, and financial resources committed to CA monitored and measured?
- Are CA deliverables and performance measures attached to these resource commitments?
- Does the monitoring and measurement system identify key types or topical areas of CA activities that are occurring, and where within the organization they occur?
- Does the monitoring and measurement system address the CA contributions from the Agency's stakeholder groups?
- Are the results of monitoring and measurement communicated to and understood by those within the Agency and external stakeholders?
- Is information from the CA measurement system accessible to the public?
- Is the progress toward program goals, objectives, and milestones assessed, reviewed, and summarized as part of the sys tem?
- Is there a system in place to measure outcomes of CA activities?
- Do these outcome measures include: increased understanding of regulatory requirements, improved management practices, and environmental results?

Management Review and Program Adjustment

Element 10. Management Review and Program Adjustment

The Agency should define and execute an effective and pragmatic process for management review and assessment of the CA program. Program modifications and adjustments resulting from the review should be made in a timely manner. Top management involvement and commitment to effective CA is a critical element in this stage of the process.

- Is there an established and clearly understood feedback loop?
- Is there a process in place for formal "audit" or programmatic assessment?
- Is there an established process for incorporating and implementing corrective programmatic recommendations?
- Is there a process in place for "quick" or "spot-check" program review?
- Is there a process in place for assessing existing and projected resource sufficiency?
- Are program successes recognized, rewarded, and shared within the Agency, with stakeholders, and the public?

APPENDIX B

Logic Model Framework for Program Evaluation

The Logic Model[13] provides a conceptual framework that ties expected outputs and outcomes to resource investments. Using the model helps the manager of a program or project to clearly identify underlying assumption about how CA (or enforcement) works, and provides a useful tool to separate variables that contribute to changes in behavior.

A generic graphical layout of the model, as found at http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html is presented here:

LOGIC MODEL for PROGRAM DEVELOPMENT & ASSESSMENT

SITUATION	INPUTS	OUTPUTS		OUTCOMES – IMPACT		
		Activities	Participation	Short	Medium	Long Term
	What we invest	What we do	Who we reach	What the short term *(education)* results are	What the medium term *(behavior)* results are	What the ultimate *(system)* impact(s) is
	Staff Volunteers Time Money Materials Equipment Technology Partners	Workshops Meetings Counseling Facilitation Assessments Product dev. Media work Recruitment Training	Participants Customers Citizens Reactions	Learning Awareness Knowledge Attitudes Skills Opinions Aspirations Motivations	Action Behavior Practice Decisions Policies Social action	Comprehensive Achievements Social Economic Civic Environmental

Assumptions
1)
2)
3)
4)

External Factors

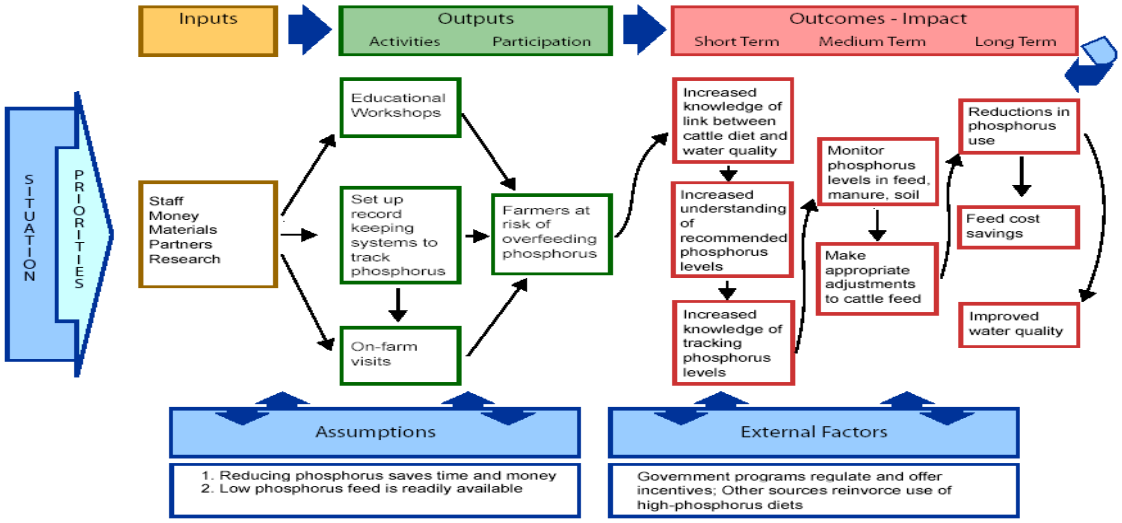
[13] The logic model is used to direct projects and entire programs, such as at UW, and is required for planning and evaluation of environmental grants from the USDA.

The "Situation" is a description of the problem that needs fixing, such as "high phosphorus levels make water quality less than desired." Descriptions of the other five elements used to describe the program follow:

1. INPUTS: resources, contributions, investments that go into the program
2. OUTPUTS: activities, services, events and products that reach people who participate or who are targeted
3. OUTCOMES: results or changes for individuals, groups, communities, organizations, communities, or systems
4. Assumptions: the beliefs we have about the program, the people involved, and the context and the way we think the program will work
5. External Factors: the context in which the program exists includes a variety of external factors that interact with and influence the program action.

One important fundamental feature of the logic model is how it describes the logical progression of change that a program hopes to impart (such as the intended impact of a CA program on a regulated community). The INPUTS are used to create OUTPUTS, and OUTPUTS create OUTCOMES. The outcome progression, from short term to long term, or from *education* through *behavior* to *system*, parallels the well-documented *stages of change*[14] model described by Prochaska.

Simply using the chart above to list items may fail to capture the connections between and among items. By modifying the worksheet to include unique items in connected boxes, as shown on the logic model for a water quality program, a more explicit theory of change is illustrated. With the added detail of presumed connectivity, the logic model more clearly shows the logical causal relationships that link inputs to outcomes.



[14] Also known as the Transtheoretical Model. This model was derived by studying over 500 research models, and pulling from them the common elements into a model now well accepted by the behavioral science community.

Note that in this example more than one CA action was used to reach the members of the participant community. Note also that specific solutions were assumed to exist and be of ready benefit if a change was made. The external factors listed provide contributory incentives for change – in other words the program did not act as the sole source of incentives for change.

After the logic model framework has identified what actions and resources are intended to cause change, then evaluation questions and measurement indicators can be developed.

The color-coding indicates the measurements that would be used to evaluate the value of each element in the model, be they inputs, outputs or outcomes. The particular merit of the examples here lies with the fact that the measure is tied to each step of the logic chain. This improves measurement accuracy and avoids the tendency to overstate levels of long-term system outcomes (environmental impacts) from a single activity. Note that the model describes indicators, but the indicators do not control for affects from the external factors listed on the previous model.

LOGIC MODEL for "EPA INSPECTORS PROVIDING COMPLIANCE ASSISTANCE DELIVERED DURING INSPECTIONS"

1. Compliance assistance is intended to change a member of the regulated universe from a non-compliance behavior to a compliant behavior.

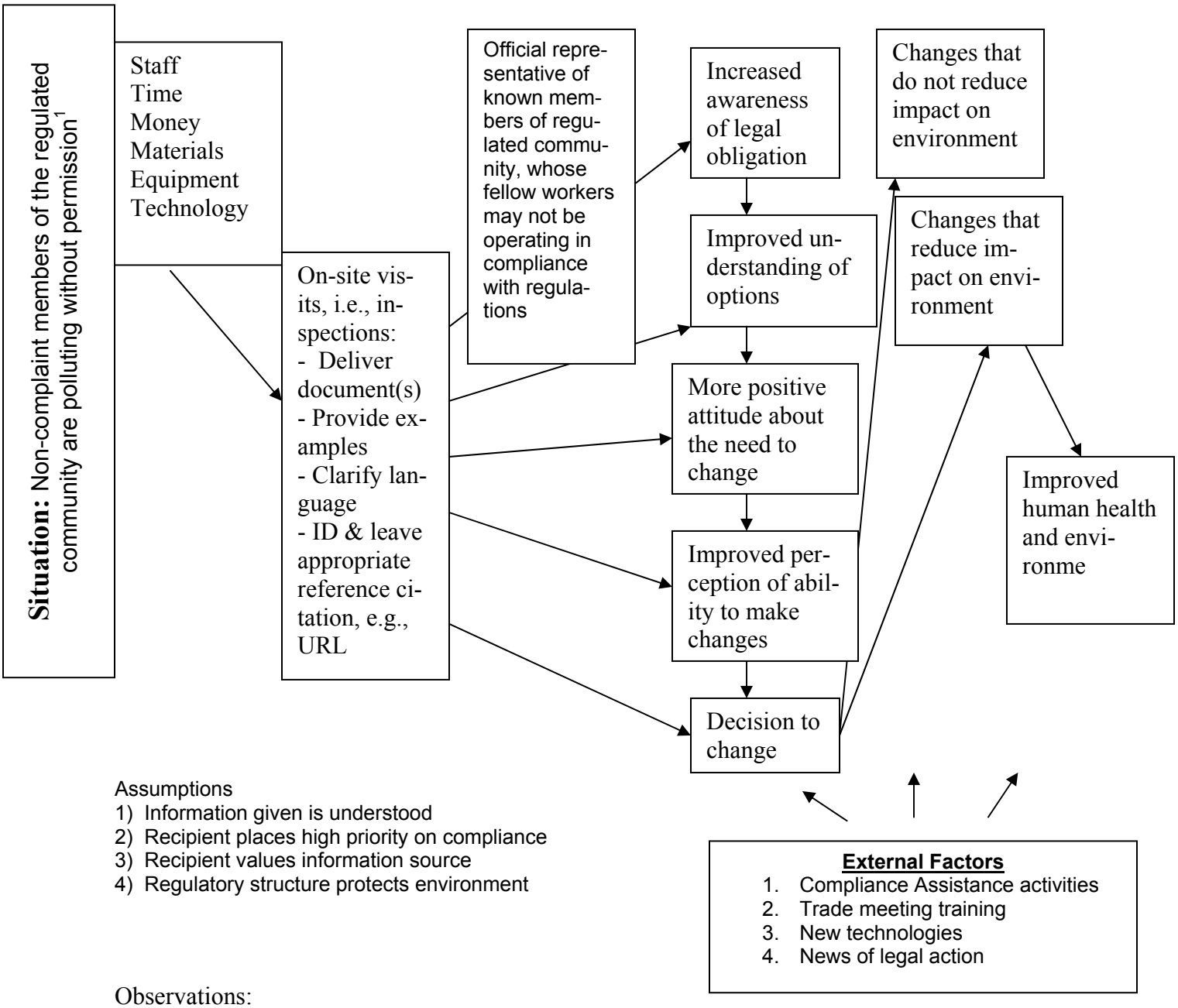
2. Behavioral science has clearly identified stages that individuals go through when they change. Progression from one stage to the next is neither assured nor permanent, i.e., behavior can relapse to an earlier stage, but progression is dependent on completion of the previous stage, i.e., each step is required.

3. A Logic Model helps to diagram a logical causal relationship between inputs, outputs and outcomes, and it can help pinpoint where and what measures should be used to verify effectiveness of programs and activities.

4. Compliance assistance and enforcement programs each attempt to modify the behavior of the regulated community.

A Logic Model displays the chain of actions and their anticipated outcomes. This chain shows how a program is expected to work in order to deliver the desired results.

INPUTS	**OUTPUTS**		**OUTCOMES-IMPACT**		
What we invest	Activities	Participation	Short	Medium	Long Term
	What we do	*Who we reach*	*Education*	*Behavior*	*System*



Assumptions
1) Information given is understood
2) Recipient places high priority on compliance
3) Recipient values information source
4) Regulatory structure protects environment

Observations:

- The education outputs can have an affect on the audience at any point in its movement through the stages of change.
- The participating member of the regulated community is a designated representative, and may not be the one who needs to change behavior in order for the organization to become compliant.

The following table lists CA activities allowed during an inspection, and describes the activity measure associated with each activity. The direct outcome of that activity is also listed, along with the likely long-term outcome (environmental impact).

Possible Outcome Measurement Associated with "Appropriate General Assistance" Available to Inspectors, as Described in "Role of the EPA Inspector in Providing Compliance Assistance During Inspections"

Activity [Generic/Categorical Description]	Activity Measures	Causal Outcome	Contributory Outcome	Environmental Impact
1. Providing physical copies of environmental statutes or regulations, conveying a general explanation of where to obtain the regulatory requirements, and providing information on where to find regulatory interpretations [Regulatory info - "in context"?; info provides structure for action]	# copies, other info given to TA (target audience)	Increased awareness, +/- attitude		None
2. Providing information including prepared guidance, manuals, and tech. transfer documents [Guidance info -"in context"?; info provides options available for action]	# copies given to TA	Increased awareness, pos attitude	Knowledge, behavior, practice	This action may have very minor contribution among many.
3. Providing info on what assistance can be obtained from EPA, state, local assistance programs, trade associations, and other orgs. [Referral to service partners]	# referrals made	# or % TA who make contact	Awareness, pos attitude	None
4. Informing facilities regarding the phys. equip. or processes and reports and/or records they need to maintain, as well as a general idea of what these documents should contain to ensure compliance [Info. provides model of expected behavior]	# examples offered	Increased awareness, knowledge, skill	+/- attitude, behavior, practice	This action may have very minor contribution among many.
5. Distributing the small business information sheet with information on web sites, hotlines, and other materials. [Referral to other information sources]	# sheets distributed	# or % TA who contact # references	Awareness, pos attitude	None
6. Providing prepared literature on P2 techniques and opportunities, environmental management practices, and innovative technologies. [Info provides options for alternative action, equip]	# copies distributed to TA	Increased awareness, +/- attitude	Knowledge, behavior, practice	This action may have very minor contribution among many.
7. Providing info. on visible compliance problems, e.g., labeling or aisle space, which do not pose any issues of first impression requiring legal or technical interpretation by the inspector, potentially enabling the facility to undertake quick action to remedy the non-compliance problem. [Info provides model of expected behavior]	# items suggested	Increased awareness, knowledge, skill, behavior, practice		None (What is the environmental impact of a label or aisle space?)
Activity [Generic/Categorical Description]	Activity Measures	Causal Outcome	Contributory Outcome	Environmental Impact
8. Providing facilities with the web site for the EPA Audit Policy and Small Business Policy to encourage self auditing [Referral to information]	# referrals made	# or % who contact & read # references	Awareness, knowledge, +/- attitude	None
9. Providing suggestions from published material developed and recognized by EPA on sim-	# items suggested	Increased awareness, +	Knowledge, behavior,	This action may have very minor

ple techniques and concepts to reduce or eliminate pollution, e.g., housekeeping tips. [Info models desired behavior, offers alternatives]		attitude	practice, decisions	contribution among many.
10. Sharing information from published material developed and recognized by EPA on control practices and equipment used within a specific sector to comply with environmental regulations and potentially reduce their regulatory burden. [Info models desired behavior, provides options]	# items suggested	Increased awareness, + attitude	Knowledge, behavior, practice, decisions	This action may have very minor contribution among many.
11. Providing information from published material developed and recognized by EPA on recognized industry or sector-based practices and concepts to reduce or eliminate pollution, e.g., chemical substitution or equipment changes [Info models desired behavior, offers alternatives]	# items suggested	Increased awareness, + attitude	Knowledge, behavior, practice, decisions	This action may have very minor contribution among others.
12. Explaining regulations or guidance that describe how to collect a sample, but not providing advice on the number or location of samples necessary to meet "representative" criteria [Regulatory info - "in context"?; info provides structure for action]	# explanations offered	Increased awareness, knowledge, +/- attitude	Behavior, practice, decisions	None
13. Mentioning to regulated facilities that state requirements, which may apply to them, may be different from federal requirements. [Regulatory info; info provides structure for referred action]	# caveats given, # referrals made	# or % TA who make contact	+/- attitude	None

APPENDIX C

Measurement Modeling

There may not be one national system that can help CA providers address all of the purposes for a CA measurement system. Different measurement systems can be used to address various purposes, but it may not be possible to address all of these purposes with a "one-size-fits-all" approach. Measurement for improving project/program management is not the same as measurement for communicating environmental results to the public.

There are also various types of CA measures that need to be fully defined and developed. The following model provides a framework for considering the types of measures that could be available.

Model Characterizing Levels & Focus of Compliance Assistance Performance

Measurement with Examples

Measure Types **Levels of Focus**	**Output Measures**	**Outcome Measures**	**Environmental Indicators**
CA Project/ Initiative			
CA Program-Wide (multi-initiative)			
Agency-Wide (Multi-program)			
Multi-Agency-Wide (could be multi-state or regional)			
National			

Moving from top left hand box to lower right hand box of this matrix, CA measures become more challenging to define in a meaningful way that produces credible numbers. It also becomes more and more difficult to identify contribution of CA, as distinct from other environmental protection activities, to the measured results.

Examples of Output Measures

The following examples of output measures are from the Northeast Waste Management Officials' Association (NEWMOA) Compliance Assistance and Pollution Prevention Measurement software. EPA Headquarters has supported the development of this software to facilitate state collection, management, and analysis of compliance assistance and pollution prevention output and outcome data.

Client-based assistance:

- number of clients receiving on site assistance
- number of clients receiving research assistance with no on site visit
- number of clients receiving problem solving assistance with no on site visit
- number of clients receiving grants

Workshops and conferences:

- number of events organized by the program
- number of people attending these events
- number of events not sponsored b the program that included a presentation by the program staff and the number of people reached through these events

Educational materials, including electronic and web-based:

- number of clients to which you sent hard copy materials, i.e., fact sheets, reports, guidance documents, video tapes, CDs, and others
- number of information requests that were received by phone, mail, e-mail, web-based or other direct contact to which the program responded
- number of publications and other materials produced and distributed

Awards programs:

- number of entities that applied for the award

Partnership activities:

- number of partnerships established or maintained between governmental and/or non-governmental organizations

Grants:

- number of grants awarded
- amount of money awarded

Examples of Outcome Measures

Outcome measures are those that can be directly and credibly linked to the efforts of the CA program. To develop an effective system for assessing the outcomes of CA activities, there needs to be a method for establishing a baseline against which trends can be evaluated. All outcome measures need to first have a baseline with a process for follow-up and evaluation. The examples of outcome measures provided below are taken from NEWMOA's Pollution Prevention and Compliance Assistance Metrics.

For the categories of direct client assistance, educational events, and educational materials, the following are examples of possible outcome measures:

Behavioral changes, such as

- development of an environmental management system,
- adoption of environmental policies and statements,

- implementation of training programs,
- process mapping,
- development of compliance and P2 teams,
- development and maintenance of chemical use and purchasing systems.

Compliance changes, such as:

- Changes in compliance status related to the numerous federal requirements, including hazardous waste, various air quality, NPDES, storm water, UST, TRI, drinking water, and others associated with program's work with their clients

Environmental impact, such as changes in:

- air emissions, such as SOx, NOx, hazardous air pollutants, specific air toxics
- water discharges, including direct discharges, non-point source discharges and stormwater
- hazardous waste generation,
- energy use,
- water use,
- toxic chemical use,
- solid waste

Examples of Environmental Indicators

Environmental indicators are the most challenging for identifying any causality or a direct link between CA and the trends shown through the indicator. However, because the following types of indicators can be impacted by a wide range of activities and changes on the part of all activities at the environmental agencies, other public entities, and private entities, it is not appropriate or effective for the measurement of these indicators to be developed or conducted by CA providers alone:

- Changes in the rating of a water body and measures of overall water quality
- Changes in the toxic chemicals in the fish population (i.e., reduction of mercury and PCBs in fish)
- Changes in ground level ozone statewide or in a metropolitan area
- Changes in SOx levels on statewide or other level
- Changes in NOx levels on a statewide or other level
- Changes in the amount of hazardous waste that is disposed
- Changes in the amount of hazardous waste that is recycled
- Changes in TRI emissions and discharges
- Various measures of risk reduction, i.e., reduction in asthma incidents related to air quality problems, reduction in the lead poisoning incidents

The NEWMOA P2 and CA Metrics Software system does not include environmental indicator measures. It focuses on output and outcome measures.

APPENDIX D

RCRA Compliance Measures Project

The New Hampshire Department of Environmental Services (NH DES) has developed and implemented a procedure to collect statistically-valid data regarding the compliance status of hazardous waste generators.

Background

NH DES obtained a grant from the US EPA OECA to analyze existing data on compliance by hazardous waste generators and to collect data to "fill in the gaps" so that supportable conclusions could be reached regarding the efficacy of Partial Compliance Evaluations Inspections (PEIs) versus Full Compliance Evaluation Inspections (CEIs). After analyzing the existing data with the assistance of an EPA contractor (Tetratech), it became apparent that the data in the federal database was of little to no use due to the lack of readily available detail. NH DEC thus proposed to develop a new procedure and database to collect and analyze usable data rather than continue under the original proposal; this proposal was accepted.

The Compliance Measures Project had three major components: (1) revising the existing inspection checklists to contain only consistent, dichotomous questions (i.e., yes/no questions where "yes" always means "in compliance"); (2) developing a database to receive the data generated by inspections such that the data could be analyzed efficiently; and (3) developing a "Partial Compliance Evaluation" similar to the Environmental Results Projects (ERPs) developed by the Massachusetts Department of Environmental Protection (MA DEP) that could be used to generate statistically-valid baseline compliance rates and compliance trends. In conjunction with this project, NH DES also undertook a comprehensive data cleanup of its Manifest Tracking System to update entries, eliminate duplicates, and deactivate closed facilities. This report focuses on the third element of the project.

Hazardous Waste Partial Compliance Evaluation

The Hazardous Waste Partial Compliance Evaluation is performed using a one-page printed multi-part carbonless form. The form includes room for the basic identifying information regarding the facility being inspected ("Notification Information"), questions regarding the facility that do not directly relate to regulatory requirements (e.g., contact information, number of employees, length of tenure of environmental manager, whether the facility is ISO 14001 certified, etc.), and the 10 ERP-type questions developed for this procedure. The ERP-type questions comprise seven questions that directly relate to regulation requirements and three questions that relate to pollution prevention/beyond compliance. The seven regulatory questions must be answered "yes" or "no", or n/a (NH SQGs only); the answer is supplemented with the number of instances of compliance out of the total possible instances of compliance (e.g., number of containers labeled out of total number of containers). The three non-regulatory questions are answered "yes" or "no" and are supplemented with a rating of 1 to 5, with 5 being the best (i.e., correlating to "yes"). NH DES recognizes that the survey questions likely will be modified so as to be worka-

ble for a broader implementation, since regulatory requirements are not identical from state to state. For example, in New Hampshire a minimum of two feet of aisle space must be maintained; in the federal regulations and in many states, the requirements are for "adequate" aisle space.

Implementation

Interns
The first summer, NH DES hired three college students as interns. The second summer, four interns were hired, but one left for graduate schools three weeks after starting. Currently, NH DES hires the interns under its standard intern program. The goal is to establish permanent seasonal positions, to attract teachers who would return year after year.

Training
Interns receive "classroom" training on hazardous waste regulatory requirements (including hazard recognition) and then accompany a fully-trained staff inspector for the first week to observe how the evaluations are performed. The interns also attend the same Field Safety training that all NH DES inspectors attend; this training covers areas such as how to recognize a potentially threatening situation and extricate oneself from it and how to be non-confrontational so as to get your job done effectively. NH DES also provides safety equipment to the interns. In 2003, the interns attended the NH DES hazardous waste coordinator certification training; this practice is expected to continue.

Facility Selection
Facilities to be evaluated are selected using a random-number generator in conjunction with NH DES's Manifest Tracking System, which contains information on every known generator in the state (and which is updated when new information is received). The facilities are then mapped and assigned to the interns to maximize the efficient use of time and travel resources. One lesson learned from the first summer was to do an initial selection of many more facilities than needed to obtain statistically-valid data, since many facilities turned out to be closed when the interns arrived. Another lesson was to screen out generators who only generate used oil or precious metals, since they are not subject to enough requirements to generate complete data.

In the first summer, 3 interns visited 429 facilities. In the second summer, three interns visited 611 facilities dues to increased efficiencies. For most of the facilities, these visits were the first contact they had ever had with NH DES on hazardous waste issues.

Evaluations and Follow-up
Facilities are not notified in advance of the visit. Upon arriving at the facility, the interns identify the purpose of the visit and request permission to conduct the evaluation. The facility contact is informed that the evaluation can be refused, but that if it is the facility will be placed on NH DES's list for CEI. To date no intern has been turned away.

At the facilities, the interns observe and discuss the conditions relating to the questions. They tour the facility and are expected to go into the main hazardous waste storage area(s), but they do not do any sampling and are instructed to leave an area immediately if they observe hazardous conditions.

At the conclusion of the evaluation, both the evaluator and the facility contact sign the evaluation form and the facility contact receives a copy of the form. The interns also provide a packet of information (i.e., NH DES Fact Sheets, telephone numbers, etc) regarding applicable requirements and available assistance, which usually is greatly appreciated by the facility contact. Unless the intern observes egregious conditions, there is no formal follow-up regarding any potential violations; hence the evaluations do not count as "inspection beans" for EPA purposes. If the intern does observe egregious conditions, the facility is put on the list for CEI, which then may result in formal enforcement. A facility also will be put on the list for a CEI if it is selected two years in a row (based on the random selection) and the violations observed the first year have not been corrected. The priority of the inspection will depend on the severity of the violations.

Project Results

NH DES has published a report on the results of the first year's Hazardous Waste Partial Compliance Evaluation program, which can be obtained at the following website:

http://www.des.state.nh.us/hwcs/

APPENDIX E

The Role of the Change Agent

The *Outcome Hierarchy* below provides a model that focuses on behavior change – in this case, with change being associated with compliance assistance programs. The Outcome Hierarchy provides a context for developing a *logic model* of specific CA outcomes necessary to bring about change from non-compliance to compliance. With the logic model in place, such as the *steps of change,* a CA program can be instilled in a target audience through specific roles involving associated outputs and activities. With this entire context in place, identifying measures are related to causal relationships between CA actions and specific outcomes.

Outcome Hierarchy

System/Circumstance
(HH&E/Environmental Quality)

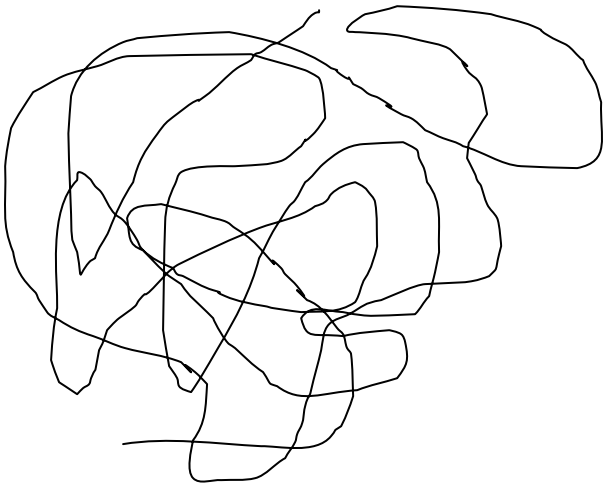
Behavior

Skills

Attitude

Knowledge

Awareness



The goal of CA is to move a target audience from Awareness to Impact. It is often forgotten that individuals and even organizations, do not travel a direct path to get from one end to the other. Outcomes are not achieved in a stepwise fashion as shown on the left, but through an erratic and convoluted path as shown on the right – especially in entrenched systems.

Outcome Chain (Logic Model)

The Outcome Hierarchy can allow EPA to develop a logic model of outcomes, from which CA activities can be planned as necessary to realize change.
A logical progression for CA outcomes along this hierarchy might look something like this:

6. Environment protected
5. Environmental indicators stabilize
4. Target Audience reduces environmental impact
3. Target Audience adopts BMP/New Tech/Reg
2. Target Audience incorporates BMP/New Tech/Reg in planning
1. Target Audience learns about Best Management Practice/New Technology/Regulation (prescribed activity/output)

System

Behavior

Learning

Discussion: At what point is measurement needed? Which outcome is most important? Which outcome(s) does CA most influence?

Role of the CA Program (Steps of Change)

What does a compliance assistance program need to do in order to move the target audience (TA) towards change? Research[15] describes the possible sequence of roles for the CA change agent as follows:

7. *CA program achieves a terminal relationship with the TA*. The CA program shifts the target audience from a position of reliance on the CA program to one of self-reliance.
6. *CA program stabilizes adoption and prevents discontinuance.* The CA program provides reinforcing messages to a TA that has adopted or is in the implementation or confirmation stages.
5. *CA program helps the TA translate intent to action.* The CA program seeks to influence TA behavior based on TA needs. Interpersonal network influences from near-peers are most important at the persuasion and decision stages. The CA program can operate only indirectly by working with opinion leaders to activate near-peer networks.
4. *The CA program creates intent in the TA to change.* After identifying alternatives, the CA program seeks to motivate TA interest in the desired alternative. Show barriers can be overcome.
3. *The CA program helps the TA diagnose the problem.* Here, problem = compliance gap. CA staff must show why existing practice does not meet TA needs. The CA staff should view the situation empathetically from the TA perspective. Identify barriers.
2. *The CA program establishes an information-exchange relationship with the TA*. The CA program can enhance relationships with clients by being perceived as credible, competent, trustworthy, and by empathizing with TA needs and problems.
1. *The CA program develops a need for change in the TA.* What is the problem?]

[15] Rogers, Everett M., *Diffusion of Innovations* (4th Ed) Chapter 9, "The Change Agent"

APPENDIX F

CA-MAPPER

Compliance Assistance[16] (CA) is a critical aspect of EPA's environmental protection and improvement mission. Elsewhere in these recommendations, the Compliance Assistance Advisory Committee[17] (CAAC) has made recommendations to EPA for improving CA management throughout the Agency. These recommendation are in the form of a Self-Assessment Checklist that addresses the need for a formal CA policy, CA planning, implementation issues, performance measurement, and management review and program adjustment.

While EPA clearly plays a role in providing CA to the regulated community, many other entities play major roles in the CA network. Other federal agencies, state regulatory agencies, pollution prevention organizations, commerce and small business development agencies, local governments and even non-profit and community-based organizations provide CA in a variety of forms. Additionally, there is a substantial private sector presence in the CA network, from corporate environmental departments, to trade associations and labor, to consulting and engineering firms.

Critical to the efficient and effective operation of this network is an understanding of how CA is delivered to the regulated community. Unlike the regulatory hierarchy, in which legislative mandates are codified in a regulation, which, in turn, may be enforced directly by a federal agency or delegated to state or local enforcement agencies, CA transmission is rarely direct from EPA to the end-user. Rather, CA follows complex, multiple pathways, sometimes reinforcing, sometimes competing, which pass through several levels of providers en route to the end-user. Successful CA transmission, and end-user response, is further complicated by the discretionary nature of CA reception—the end-user may respond to CA in a variety of ways, from immediate assimilation and action, to complete disregard. The end-user's response is also influenced by factors outside the CA transmission itself (e.g., financial capacity), and by entities not directly involved in CA transmission (e.g., customers, financial providers, trade associations, peers).

In the Self-Assessment Checklist (Element 5. Engaging Stakeholders and Building Partnerships), the CAAC recommends that EPA undertake a structured effort to involve representatives of the regulated community, tribal nations, state and local regulatory agencies, and assistance organizations, non-profit organizations and the general public in the CA planning process. This involve-

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[16] *Compliance Assistance* is officially defined by the U.S. EPA as activities, tools or technical assistance which provides clear and consistent information for 1) helping the regulated community understand and meet its obligations under environmental regulations; or 2) compliance assistance providers to aide the regulated community in complying with environmental regulations. Compliance assistance may also help the regulated community find cost-effective ways to comply with regulations and/or go "beyond compliance" through the use of pollution prevention, environmental management practices and innovative technologies, thus improving their environmental performance. CA includes activities that are commonly described as technical assistance, environmental assistance, environmental management assistance, and pollution prevention assistance within the Agency and the stakeholder community.

[17] The CAAC is a FACA subcommittee of the National Advisory Council for Environmental Policy and Technology.

ment early in the CA planning process can be invaluable for understanding the CA network, how CA is transmitted to end-user, and most importantly, how end-users are likely to respond to CA.

To assist EPA and the network of CA providers in this effort, the CAAC has developed CA-Mapper, a survey-based visualization tool for understanding the CA network. CA-Mapper can be used tactically to identify the most effective pathway(s) for delivering CA to a single end-user or group of end-users, or strategically, for allocating resources across multiple layers and pathways in larger CA network. CA-Mapper uses a generic survey questionnaire (Attachment 1) to gather information regarding the accessibility, reliability and influence of CA wholesalers on CA retailers, and CA retailers on end-users. The questionnaire also gathers information on "influencers," entities that do not presently deliver CA but significantly impact the environmental decisions of the respondent. Data from the questionnaire can be uploaded into a simple spreadsheet containing the respondent's profile as well as the respondent's assessment of each CA provider and influencer.

This type of customer survey traditionally results in tabular reports that assess the quality of each CA provider, both from an individual customer's perspective and in the aggregate, where multiple respondents identify the same CA provider.

CA-Mapper converts the traditional tabular information into a visual model of the CA network. In this visualization, the CA end-user is placed at the apex of the cone. CA providers are located *on the surface of the cone*, their distance from the apex corresponding to their operational distance from the end-user, ranging from local to national/global. Additionally, influencers, those entities that exert influence over the end-user's environmental decisions, but do not presently deliver CA, are situated *outside* the surface of the cone. Again, the relative distance from the apex corresponds to the operational distance from the end-user. The color and size of the CA provider and/or influencer markers are used to represent the perceived attributes of the provider or influencer, with the colors green, yellow and red representing the *reliability* of the information source, and the size of the marker, smaller to larger, representing the *influence* of the information source. Finally, the thickness of the connecting line is used to represent the *accessibility* of the information source. A simple example of a CA-Mapper visualization is provided in Attachment 2.

Using the CA-Mapper visualization, the objective of analyzing CA network becomes straightforward—ensure that there is at least one large, green marker immediately connected to the end-user, and a continuous pathway of green markers linked by thick connectors, from EPA to the end-user. Where there is no continuous "green" pathway, the gaps (accessibility, reliability or influence) represent opportunities for improving CA transmission.

<u>Attachment 1</u> - Compliance Assistance Survey

This survey is intended to gather information regarding how your facility obtains information regarding how to comply with environmental regulations, and how the sources of compliance assistance (CA) influence your facility's environmental compliance decisions. For CA providers, this survey is intended to gather information regarding how your organization obtains information to aide the regulated community in complying with environmental regulations. The survey also is intended to identify what additional entities, and to what extent, influence your facility's environmental compliance decisions.

Information collected from this survey will be used to assess how, and how well, the network of assistance providers delivers reliable CA to enable your facility to comply with environmental regulations, and to identify ways in which EPA and its partners can enhance the delivery of CA. Information regarding specific regulated facilities and CA providers (to the extent provided) may be used by EPA to deliver enhance CA through those providers that you have identified as most influential in making your facility's environmental compliance decisions.

<u>Part I – Facility and Contact Information</u>

Please provide information regarding your facility or organization.

Facility Name	
Facility Address	
City, State, Zip Code	
Name of Person Completing Survey	
Title	
Telephone Number	
e-Mail Address	
Parent Company Name (if applicable)	
Parent Company Address	
City, State, Zip Code	
Name of Contact Person	
Title	
Telephone Number	
e-Mail Address	

Part II – Facility / Organization Profile

Please provide information regarding the nature of your facility or organization's business activities.

Business Activity	
Standard Industrial Classification Code(s)	
Number of Employees	
Annual Revenue (Dollars)	
Which best describes your facility or organization?	☐ Regulated entity ☐ Corporate environmental office ☐ Hospital, medical or dental provider ☐ Financial or insurance provider ☐ Municipal government ☐ State or regional assistance provider ☐ University or extension service ☐ Economic development agency ☐ Community based organization ☐ Local / national trade association ☐ Local / national professional development organization ☐ State environmental regulatory agency ☐ Federal facility

Part III – Compliance Assistance Providers

Please complete a profile for each entity that provides CA to your facility. For purposes of this section, CA is any activity, tool of technical assistance that (1) provides clear and consistent information for helping your facility understand and meet its obligations under environmental regulations, or (2) helps CA providers to aide the regulated community in complying with environmental regulations.

Name of Provider	
Address	
City, State, Zip Code	
Name of Primary Contact	
Telephone Number	
e-Mail Address	
Which best describes this CA provider?	☐ Industry peer ☐ Consultant ☐ Financial or insurance provider ☐ Municipal government ☐ State or regional assistance provider ☐ University or extension service ☐ Economic development agency ☐ Community based organization ☐ Local / national trade association ☐ Local / national labor organization ☐ State environmental regulatory agency ☐ Local / national professional development organization ☐ Federal regulatory agency ☐ Other federal department
In which environmental areas does this provider offer CA (check all that apply)?	☐ Air ☐ Water ☐ Land / hazardous waste ☐ Pollution prevention / toxics ☐ Environmental reporting

For this CA provider, please assess the following service qualities:

What is the primary means through which this provider delivers CA to your facility?	☐ Mail ☐ Telephone / facsimile ☐ Website / e-mail ☐ On-site visits
How easy is it for you to obtain necessary environmental compliance information from this source?	☐ Not very easy ☐ Usually easy ☐ Very easy

Is the environmental compliance information provided by this source concise and easy to understand?	☐ Not very concise and/or difficult to understand ☐ Usually easy to understand ☐ Very concise and easy to understand
Do you face any special language or cultural barriers to understanding the information provider?	☐ Language / cultural barriers are a factor in understanding the information provided
How accurate and reliable is the environmental compliance information provided by this source?	☐ Not very accurate or reliable ☐ Usually accurate and reliable ☐ Always accurate and reliable
To what extent does the CA delivered by this provider influence your facility's environmental compliance decisions and actions?	☐ Not very influential ☐ Usually influential ☐ Very influential

Name of Provider	
Address	
City, State, Zip Code	
Name of Primary Contact	
Telephone Number	
e-Mail Address	
Which best describes this CA provider?	☐ Industry peer ☐ Consultant ☐ Financial or insurance provider ☐ Municipal government ☐ State or regional assistance provider ☐ University or extension service ☐ Economic development agency ☐ Community based organization ☐ Local / national trade association ☐ Local / national labor organization ☐ State environmental regulatory agency ☐ Local / national professional development organization ☐ Federal regulatory agency ☐ Other federal department
In which environmental areas does this provider offer CA (check all that apply)?	☐ Air ☐ Water ☐ Land / hazardous waste ☐ Pollution prevention / toxics ☐ Environmental reporting

For this CA provider, please assess the following service qualities:

What is the primary means through which this provider delivers CA to your facility?	☐ Mail ☐ Telephone / facsimile ☐ Website / e-mail ☐ On-site visits
How easy is it for you to obtain necessary environmental compliance information from this source?	☐ Not very easy ☐ Usually easy ☐ Very easy

Is the environmental compliance information provided by this source concise and easy to understand?	☐ Not very concise and/or difficult to understand ☐ Usually easy to understand ☐ Very concise and easy to understand
Do you face any special language or cultural barriers to understanding the information provider?	☐ Language / cultural barriers are a factor in understanding the information provided
How accurate and reliable is the environmental compliance information provided by this source?	☐ Not very accurate or reliable ☐ Usually accurate and reliable ☐ Always accurate and reliable
To what extent does the CA delivered by this provider influence your facility's environmental compliance decisions and actions?	☐ Not very influential ☐ Usually influential ☐ Very influential

Name of Provider	
Address	
City, State, Zip Code	
Name of Primary Contact	
Telephone Number	
e-Mail Address	
Which best describes this CA provider?	☐ Industry peer ☐ Consultant ☐ Financial or insurance provider ☐ Municipal government ☐ State or regional assistance provider ☐ University or extension service ☐ Economic development agency ☐ Community based organization ☐ Local / national trade association ☐ Local / national labor organization ☐ State environmental regulatory agency ☐ Local / national professional development organization ☐ Federal regulatory agency ☐ Other federal department
In which environmental areas does this provider offer CA (check all that apply)?	☐ Air ☐ Water ☐ Land / hazardous waste ☐ Pollution prevention / toxics ☐ Environmental reporting

For this CA provider, please assess the following service qualities:

What is the primary means through which this provider delivers CA to your facility?	☐ Mail ☐ Telephone / facsimile ☐ Website / e-mail ☐ On-site visits
How easy is it for you to obtain necessary environmental compliance information from this source?	☐ Not very easy ☐ Usually easy ☐ Very easy

Is the environmental compliance information provided by this source concise and easy to understand?	☐ Not very concise and/or difficult to understand ☐ Usually easy to understand ☐ Very concise and easy to understand
Do you face any special language or cultural barriers to understanding the information provider?	☐ Language / cultural barriers are a factor in understanding the information provided
How accurate and reliable is the environmental compliance information provided by this source?	☐ Not very accurate or reliable ☐ Usually accurate and reliable ☐ Always accurate and reliable
To what extent does the CA delivered by this provider influence your facility's environmental compliance decisions and actions?	☐ Not very influential ☐ Usually influential ☐ Very influential

Part IV – Environmental Decision Influences

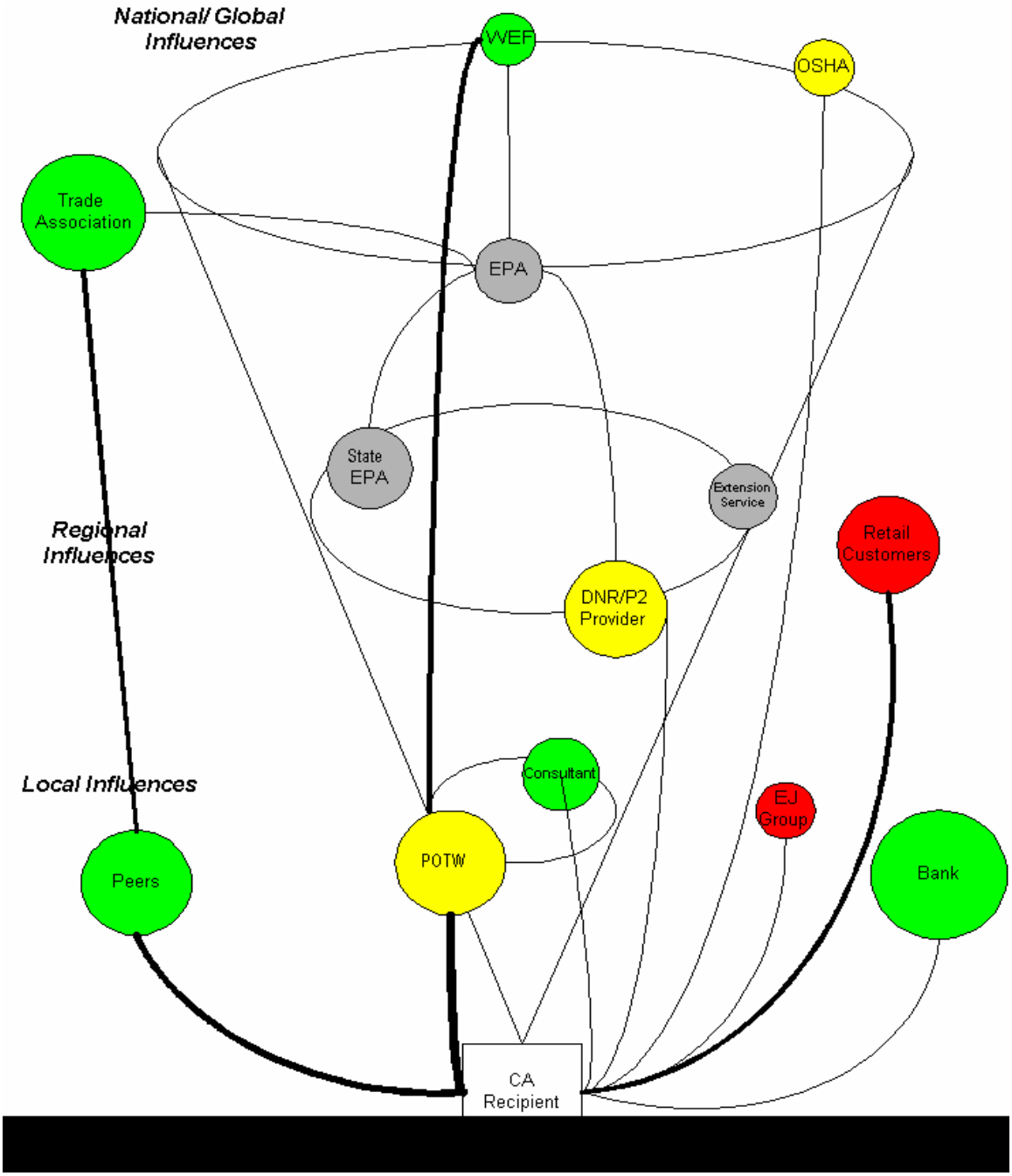
Please complete a profile for each entity that influences environmental compliance decisions at your facility. For purposes of this section, an influencing entity is any person, entity or organization that exerts an impact on your facility's environmental compliance decisions, either through opinion or economic impact, but who is not identified as a CA provider in Part III above.

Name of Influencer	
Address	
City, State, Zip Code	
Name of Primary Contact	
Telephone Number	
e-Mail Address	
Which best describes this influencing entity's relationship to your facility?	☐ Industry peer ☐ Financial or insurance provider ☐ Non-regulating municipal government ☐ Economic development agency ☐ Community based organization ☐ Local / national trade association ☐ Local / national labor organization
To what extent does this entity influence your facility's environmental compliance decisions and actions?	☐ Not very influential ☐ Usually influential ☐ Very influential
To what extent would your facility be receptive to CA from this entity?	☐ Not very receptive ☐ Generally receptive ☐ Very receptive

Name of Influencer	
Address	
City, State, Zip Code	
Name of Primary Contact	
Telephone Number	
e-Mail Address	
Which best describes this influencing entity's relationship to your facility?	☐ Industry peer ☐ Financial or insurance provider ☐ Non-regulating municipal government ☐ Economic development agency ☐ Community based organization ☐ Local / national trade association ☐ Local / national labor organization
To what extent does this entity influence your facility's environmental compliance decisions and actions?	☐ Not very influential ☐ Usually influential ☐ Very influential
To what extent would your facility be receptive to CA from this entity?	☐ Not very receptive ☐ Generally receptive ☐ Very receptive

Name of Influencer	
Address	
City, State, Zip Code	
Name of Primary Contact	
Telephone Number	
e-Mail Address	
Which best describes this influencing entity's relationship to your facility?	☐ Industry peer ☐ Financial or insurance provider ☐ Non-regulating municipal government ☐ Economic development agency ☐ Community based organization ☐ Local / national trade association ☐ Local / national labor organization
To what extent does this entity influence your facility's environmental compliance decisions and actions?	☐ Not very influential ☐ Usually influential ☐ Very influential
To what extent would your facility be receptive to CA from this entity?	☐ Not very receptive ☐ Generally receptive ☐ Very receptive

Attachment 2



APPENDIX G

Compliance Assistance Advisory Committee Members

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