



United States  
Environmental Protection  
Agency

Office of Enforcement and  
Compliance Assurance

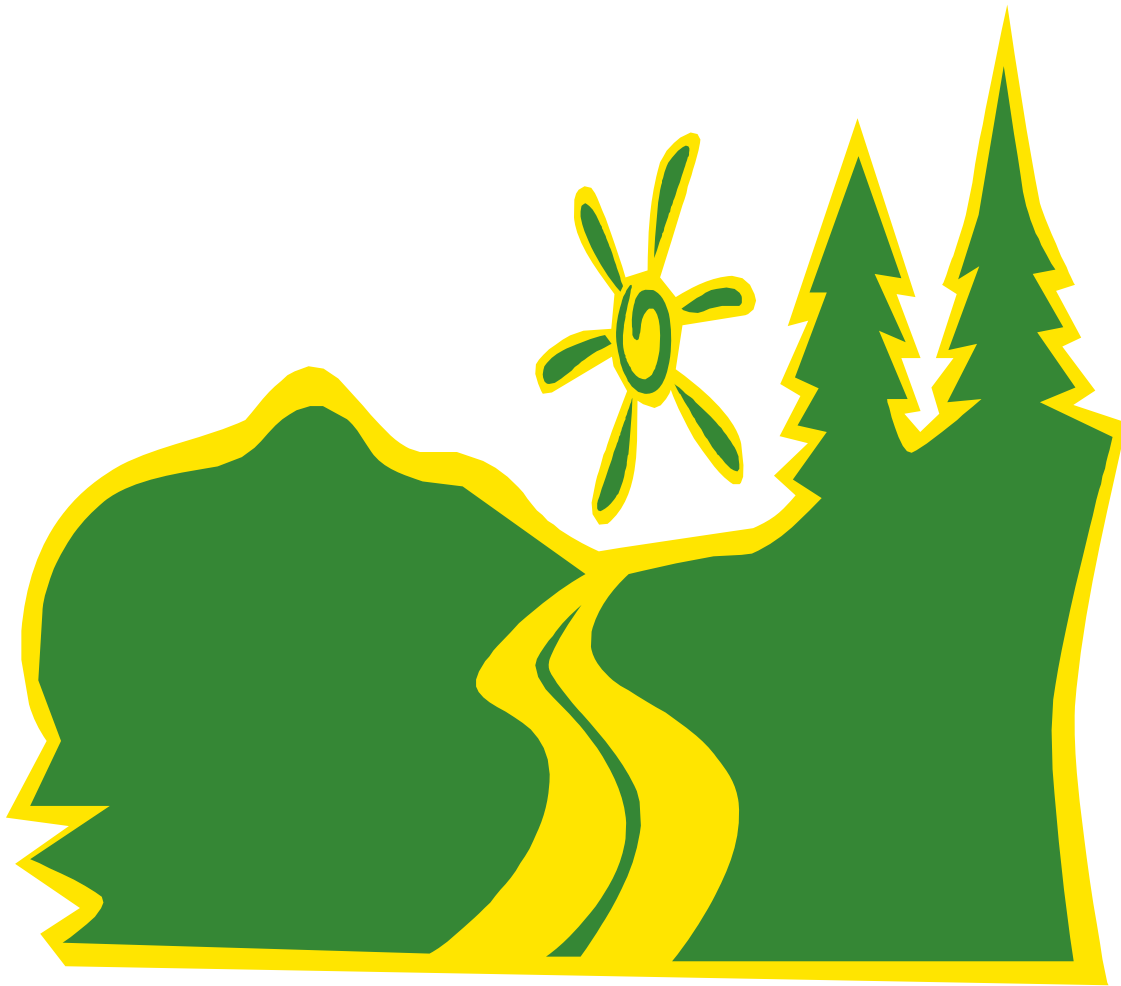
EPA 305-R-07-001  
March 2007

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# Guide for Addressing Environmental Problems:

*Using an Integrated Strategic Approach*



## Disclaimer

The *Guide for Addressing Environmental Problems: Using an Integrated Strategic Approach* was created primarily for employees of the United States Environmental Protection Agency (EPA) and state, tribal and local environmental regulatory agencies, and secondarily for stakeholders interested in partnering or collaborating with regulatory agencies in the implementation of a strategy. This Guide is intended to explain a strategic approach and its use in addressing environmental problems. It includes federal and state case examples, hypothetical examples, suggestions and illustrations on how to plan for each element in the strategic approach. The strategic approach and the supporting information are viewed as a planning tool only and do not constitute EPA rulemaking, policy or guidance. Thus, this Guide may not be relied on to create any rights, substantive or procedural, enforceable by any party in litigation with the United States. EPA may take action at variance with the Guide and its internal procedures.

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## Attachments

- A. Framework for a Problem-based Approach to Integrated Strategies
- B. Contacts for the EPA Regions 2002-2004 Integrated Strategy Pilot Projects
- C. Template for Developing a Performance-based Strategy for National Compliance and Enforcement Priorities
- D. EPA Region 2 Healthcare Compliance Initiative
- E. *Enforcement Alert* on Sanitary Sewer Overflows, March 2003
- F. Evaluation of OECA “Framework for a Problem-based Approach to Integrated Strategies” and “Guide to Implementing the Integrated Strategies Framework”

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# Guide for Addressing Environmental Problems: Using an Integrated Strategic Approach

## Introduction

The U.S. Environmental Protection Agency (EPA) and state and local environmental agencies have several tools available to address environmental problems. This Guide will focus on the compliance assistance, incentives, monitoring, enforcement and other tools that have been used in different forms and combinations over many years. Each iteration of using these tools has demonstrated EPA's evolved thinking and experience about how to most efficiently and effectively solve environmental and compliance problems. The result is EPA's **strategic approach** for achieving improved compliance and better protecting human health and the environment. The term "strategic approach" is used throughout this Guide to capture the critical elements that EPA has identified for developing and implementing its strategies for resolving identified environmental problems.



### Purpose

This Guide is specifically intended to:

- Explain in detail the concept of the strategic approach and its use in addressing environmental problems and improving performance
- Elaborate on and provide examples to illustrate the key elements that should be considered in planning, implementing and measuring the effectiveness of the approach
- Promote consistency in planning and implementing the approach
- Encourage knowledge transfer using lessons learned from federal and state case studies
- Provide documentation of the decision-making and planning process from the case studies to assist practitioners in future strategic planning.

### Key Concepts

The **strategic approach**:

- Promotes better characterization and prioritization of environmental problems
- Defines up-front what success will look like
- Provides flexibility and is designed to be iterative and allow concurrent consideration of elements
- Promotes transparency in and documentation of decision-making
- Advocates up-front consideration, but not necessarily use, of all available compliance and enforcement tools
- Recognizes the importance of effective communication, coordination and collaboration throughout the process
- Encourages leveraging of resources and optimization of workforce deployment.



## Audience

The primary audience for this Guide includes managers and staff from EPA as well as state, tribal and local environmental regulatory agencies. Secondary audiences for this Guide include stakeholders, such as industry and trade associations, community-based groups, assistance providers and affected communities, interested in partnering or collaborating with regulatory agencies in the implementation of the approach.

These audiences can benefit from adopting or participating in the strategic approach. Some of the significant benefits the approach offers include:

- Increased communication between managers and staff and across different offices, resulting in the generation of new ideas to address environmental problems
- More sharing of knowledge and lessons learned, resulting in less time spent “reinventing the wheel”
- Enhanced efficiency and effectiveness of human capital as a result of better understanding of the roles and responsibilities of the various participants in the strategy
- More measurable results and better accounting of resources used to achieve those results, which can in turn help establish benchmarks for future resource allocation.



## Background

In 2002 an internal EPA advisory group, the Compliance Assistance and Policy Infrastructure Steering Committee (CAPI), developed the *Framework for a Problem-based Approach to Integrated Strategies* (the *Framework*; see Attachment A). The *Framework*, which was endorsed and issued by EPA, provides a model for strategically and systematically addressing environmental problems and, for the first time, explicitly requires up-front consideration of compliance assistance as a tool, development of goals and measures, and documentation of the decision-making process. The *Framework* includes nine elements that guide the user through the planning process: (1) establishing the environmental problem; (2) justifying selection of the problem as a priority; (3) identifying anticipated performance measures; (4) selecting appropriate tools to address the problem; (5) identifying resource needs; (6) developing a schedule to implement the strategy; (7) establishing partners’ and stakeholders’ roles and responsibilities; (8) developing a communication plan for all interested parties; and (9) monitoring and evaluating the progress of the strategy.

The Office of Enforcement and Compliance Assurance (OECA) tested the elements of the *Framework* by funding ten pilot projects across eight EPA Regions. See Attachment B for a list of the pilots and contacts. The pilots focused on an array of environmental problems (e.g., hazardous waste and solid waste management and disposal, stormwater runoff, groundwater and drinking water contamination) in several sectors, including schools, colleges and universities, healthcare facilities, auto salvage and construction. Between 2002 and 2004, EPA headquarters solicited participating EPA Regions and states to share their experiences in applying the *Framework* elements to their planning process and the impact it had on addressing the environmental problem(s). This

information was shared through quarterly conference calls, six-month summary reports and a final case study for each pilot.

Pilot project participants provided EPA's Planning Council with lessons learned on application of the *Framework* elements and recommendations for future planning of strategies. The Planning Council, comprised of EPA headquarters and regional managers, evaluates OECA's planning and priority-setting process for selecting and addressing its national priorities. As a result of the Council's evaluation of the existing planning process and with input from the pilots, OECA developed the *Template for Developing a Performance-based Strategy for National Compliance and Enforcement Priorities (Template)* to strategically plan for and address OECA's FY 2005-2007 national priorities. The *Template* uses a similar planning process, covering the same basic elements as the *Framework*, but condensed into six elements: (1) defining the environmental problem; (2) establishing goals and measures; (3) developing the strategy, including tool selection, environmental justice, internal and external communication, monitoring and evaluation, and roles and responsibilities; (4) determining when to exit the strategy; (5) defining workforce deployment and resources; and (6) establishing a schedule. See Attachment C for the *Template*.

While implementation of the national priorities is ongoing, the authors of this Guide interviewed some of the EPA managers and staff who developed certain of the strategies addressing OECA's national priorities to inquire about the application of the *Template* elements to their planning process. In this Guide, we have incorporated the experiences from testing the *Framework* through the Regional and state pilots, from developing strategies using the *Template*, and from developing other Regional and state strategies. These experiences highlight real-life cases and the challenges and opportunities of planning and implementing the strategic approach.



## Layout of the Guide

The Guide is structured around nine elements, combining the elements of the *Framework* and the *Template* that are needed to plan for and implement the strategic approach. The elements are:

- Element 1 - Developing a Statement of the Environmental Problem and Justification for its Selection
- Element 2 - Establishing Goals and Measures
- Element 3 - Selecting, Sequencing and Segmenting Tools
- Element 4 - Establishing Roles and Assigning Responsibilities
- Element 5 - Developing an Implementation Plan, Schedule and Milestones
- Element 6 - Designating Resources/Workforce Deployment
- Element 7 - Communicating the Strategy
- Element 8 - Monitoring and Evaluating the Strategy
- Element 9 - Exiting the Strategy

For each element, we describe its purpose, key concepts, general approach, a step-by-step process for implementation, and key challenges and opportunities. Most importantly, each element highlights examples and lessons learned from the pilot project case studies and the development of the strategies implementing OECA's national environmental priorities. To the extent possible, we also provide you with suggestions on how to overcome barriers in planning and factors to consider when looking at each element's relationship to other elements in the strategic approach. The accompanying diagram of a wheel depicts all the elements of the strategic approach and illustrates the continuous motion of the planning process. This wheel will be used throughout the Guide and is intended to focus you on the element that is being addressed while highlighting the other elements that need to be considered in connection with it to ensure a well-thought-out and comprehensive strategy.



*For each chapter the element being addressed will be shown in white, and the highlighted elements will be shown in light gray.*

The Guide also includes one case study to summarize all of the elements of the strategic approach (Attachment D). The case study and other examples cited in each chapter give regulatory managers and staff an opportunity to learn from colleagues about tips for effective planning and suggestions on creative and efficient resource allocation that will yield positive results. **There is no single way to address an environmental problem; multiple approaches and strategies may be equally valid and appropriate.** We hope, however, through the documentation of these examples and case studies to begin to demonstrate when particular situations can be most effectively addressed through the strategic approach. The emphasis here is on the decision-making process and evaluating the range of possible approaches, even if only one approach is ultimately selected.



## Key Lessons Learned in Planning for and Implementing the Strategic Approach

Below are some of the key lessons learned from both the pilots and the national priorities. While these suggestions may be discussed in more detail under the relevant element, we are also sharing here a few of the more important ones to have a successful strategy.

- Designate one or two senior managers for each strategy who are responsible for ensuring that resources are committed up-front and the strategy is coordinated and managed across the appropriate offices and Regions.
- Ensure that sufficient time and resources are allocated to adequately characterize the problem, understand the audience and select tools. The Agency should consider giving some form of “credit” during the planning phase to recognize the level of effort required to fully scope out the environmental problem and to address unique circumstances in each Region.



- Maintain regular coordination and communication across relevant EPA and state offices and with external partners to manage information and resources. Pilot participants reported that they found the monthly or quarterly calls and reports useful in sharing approaches/techniques to addressing the elements and in providing insight into the decision-making process.



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# Element 1: Developing a Statement of the Environmental Problem and Justification for Its Selection



## Objectives

- Introduce techniques and information sources that can help you locate and define an environmental problem.
- Provide an example of one step-by-step process for defining environmental problems and selecting problems to work on.
- Identify key challenges and opportunities in defining environmental problems and selecting problems to work on.



## Purpose

This element of the strategic approach focuses on locating the most complete and accurate information on the environmental problem, putting it into a usable format for decision makers, and explaining why this problem has been selected for action over other environmental problems. This element corresponds to Elements 1 and 2 of the *Framework*, “Statement of Environmental Problem” and “Justification for Selecting This Problem Over Others,” and Element 1 of the *Template*, “Problem Statement.”



## Approach

For several years, EPA has been soliciting both internal staff and external stakeholders (states, tribes, non-governmental organizations, trade associations, etc.) to nominate environmental problems that are candidates for EPA’s attention. EPA then periodically reviews these candidate problems, analyzes available data on the problem and its potential impact on human health and the environment, and seeks out additional information to better characterize the nature of the problem and its relative priority for an EPA response at the national or regional level. For a well-thought-out selection of environmental problems, EPA managers should consider:

- Soliciting nominations of potential problems for EPA response from a broad array of interested parties.
- Reviewing and updating the results of any previous examinations of the candidate problem.
- Determining how EPA’s authorities complement or conflict with those of other federal, state or local governmental agencies.

### Key Concepts

- **Baseline Information:** All key information related to the: a) health and environmental impacts; b) potential risks; and c) root and contributory causes of an environmental problem before an intervention.
- **Compliance Baseline:** In the context of compliance with environmental regulations, it means making a preliminary assessment of a sector’s, facility’s or entity’s compliance status before an intervention.

- Setting aside resources to purchase external publicly-available industry data, if needed.

As you consider what data will best define a problem and subsequently, if warranted, justify action, heed the words of Harvard University professor Malcolm Sparrow: “pick important problems and fix them.” Do not get bogged down pursuing absolutely thorough or perfect information, as it probably does not exist. Explore available information sources that are the most informative; then look for indicators that will help you narrow your research. Look for alternative information sources. Acknowledge that you may make false starts while looking for especially serious unaddressed problems. Be flexible and ready to adjust at mid-course as your analysis and assumptions are confirmed or repudiated by new information.

Keep in mind that environmental problems can be defined in many forms, such as by industry sector, chemical, process unit, geographic area or medium (i.e., air, water, land disposal, etc). Define the problem by whichever form makes the most sense and will allow an efficient response. For example, EPA’s Office of Enforcement and Compliance Assurance (OECA) often includes violations of enforceable regulations in its definition of the problem. It is important to ensure that the solutions pursued in addressing the problem do not transfer pollutants from one medium to another or cause a noncompliance problem under another statute.

Examples of well-defined environmental problems:

- **Human health and environmental impact of smog.** Air monitoring is conducted by states and EPA, and the ozone non-attainment status of cities and counties is announced. Health impacts are clear (e.g., lung damage, eye irritation, damage to plants). The cause and sources of the pollutants are well understood (VOCs, NO<sub>x</sub> and SO<sub>2</sub>, heat and sunlight). Environmental regulations and permitting systems are in place to address the problem.
- **Child Lead Poisoning.** Tests are available to measure blood lead levels, and some state/city health agencies and the Centers for Disease Control actively monitor blood lead levels. Lead poisoning impacts on children are well understood (neurological damage). Sources of lead are also well understood (paint, lead solder water pipes, leaded gasoline). Regulations are in place to address the problem.

“Pick important problems and fix them.”  
—Malcolm Sparrow

### Key Considerations

Based on lessons learned from the pilot projects and other experience in developing and implementing strategies, we provide the following considerations for defining environmental problems and justifying your selection of problems to work on:

- Do not expect to find flawless data on the universe of pollutant sources (e.g., all manufacturing processes that use a particular chemical). However, many information sources will cover, at least partially, your area of concern.
- Pay attention to government data systems but conduct a thorough search for other information to help you understand how much of the pollutant source universe is known and regulated.
- Be ready to adjust your assumptions and shift direction as you refine your data and obtain feedback from field personnel (e.g., inspectors).
- As your research progresses, focus on narrower areas that pose the greatest risk and that can be effectively addressed with available resources (i.e., agency personnel and contract dollars).
- Document the range of problems reviewed and why a particular problem was selected to be addressed. Documentation is important to demonstrate good management of resources, as required under the Government Performance and Results Act (GPRA).
- If applicable, point out ways that addressing the problem could satisfy other goals at the national, EPA Region or state level.
- Consider the timing of EPA and state priority selection processes.

Example of a poorly defined environmental problem:

- **Nanotechnology.** Nanotechnology is engineering at the atomic or molecular level of functional systems such as electronic circuits, drug delivery, and fabric protection. There is little information currently available on the potential impacts of this technology to human health and the environment. Where data does exist, there is no clear consensus on its meaning. Few, if any, regulations are in place to control nano particles. These factors make it difficult to characterize whether a health or environmental problem exists as a result of nanotechnology and as such, it would not lend itself to being addressed by the strategic approach.

Clearly justify why the environmental problem you are working to solve is important so that you can justify why resources are being dedicated to it at the expense of competing problems. The more substantiating information (e.g., inspector reports, inspection violation data, national reports, chemical Material Safety Data Sheets, national priority chemical initiatives) you can bring to bear, the more easily you will be able to deflect criticism; build support for the compliance activity; and potentially tie it to other national, EPA Region, and state environmental goals and priorities.

In some instances, if a problem is obvious, it may not be necessary to expend resources on thoroughly analyzing and documenting why the problem is serious and why it should be addressed. One example of an obvious problem might be a state or EPA Region in a watershed with many concentrated animal feeding operations and few other industries that suffers from poor water quality due to high nutrient run-off and strong odor, high numbers of violations and citizen complaints about odor, and water body eutrophication.



Finally, because choosing a particular problem raises its profile and involves the building of transferable expertise, familiarization of national managers with the problem, and use of resources, it can pave the way for further activity as a regional or national priority. This is further reason why clear justification is warranted.

The following factors can play a role in identifying a problem and justifying selection or both.

- **Baseline of compliance information:** Seek to define the problem in a way that will allow you to measure results. Plan to conduct inspections or exploratory investigations to determine the kinds of noncompliance that may be encountered. Depending on the compliance activities' focus (sector, chemical or geographic area), you will need to locate the best available information that will enable you to show an impact on compliance and risk over time. For instance, if you are working to improve compliance with requirements for construction permit applications, comparing the number of annual permit applications with an industry variable such as new housing starts will enable you to determine if compliance has increased.
- **Health and/or environmental impacts and risks:** Enhance information on compliance levels with information about the risks the subject pollutants pose to human health and the environment. Be as specific as possible by giving details on how the subject pollutant causes damage. For example, "mercury is a potent neurotoxin causing harm to the human brain and nervous system, especially to those of embryos and children." Express your approach in terms that convey the urgency

of the problem or the harm prevented; for example, by tying increased compliance to improved water quality, aquatic habitat protection, lower sedimentation at drinking water treatment plants, or the health of the larger estuary. Refer to well-vetted, published reports that make the case for action.

- **Pollutant (or indicator) identification and characterization:** Clearly describe the pollutant or related indicators. Include specific chemical characteristics, the forms the pollutant can take, when it occurs most frequently, and how the strategy aims to eliminate or reduce its harm.
- **Distribution of geographic and population impacts:** Describe the geographic range of the pollutant and its impacts on the environment and groups of people, including at-risk populations such as children, seniors or economically disadvantaged communities. Although a narrow geographic area may be affected, your description of the pollutant's impacts on the area should to some extent inform the national priority selection process. Examples include the Great Lakes Initiative, Hudson River, and Anacostia River Watershed.
- **Existing noncompliance issues and patterns:** Using data you have gathered from EPA data systems, such as the Online Tracking Information System (OTIS) and the Integrated Compliance Information System, other available data systems, inspection reports, or accounts from witnesses, define and analyze what regulations are being violated. Describe any patterns that may exist. These could be types of requirements, such as monitoring, reporting or training, that are troublesome, geographic clusters of violations, or types of companies or sectors that are exhibiting problems.
- **Sector characterization:** If the problem is associated with a particular sector, compile information on the sector's characteristics. This information could be based on Standard Industrial Code (SIC) or North American Industrial Classification System (NAICS) code definitions or particular groups or subsets. Your description of the sector's characteristics could include references to products produced, raw materials used, proximity to water bodies, air emissions and major pollutant sources. By assigning SIC and NAICS codes, you can analyze data in the context of other information sources such as the U.S. Business Census, OTIS, or Dun and Bradstreet, which can help to identify other impacts associated with the sector that may not have been evident initially. If the problem in question is specific to a particular industry sector, determine the following:
  - **Sector size:** Examine multiple information sources to determine the size of the sector. Suggested sources are the U.S. Census, Dun and Bradstreet, EPA data systems, industry directories, and national business phone directories.
  - **Sector differentiation/variability:** Characterize the sector, noting how different segments pose different challenges, perhaps from facility size, materials used, location, or proximity to other pollutant sources.
  - **Small businesses:** Determine what portion of the sector is considered small business. Be sure to note whether it is small as defined by EPA (100 or fewer employees) or by another classification standard such as the one used by the Small Business Administration.
  - **Businesses with limited capacity to comply:** If a significant number of businesses are not able to comply, factor this into your strategy since it will likely raise political questions and pressures that need to be addressed to minimize their impact. Determine how you will handle companies that are unable to comply

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(e.g., by accepting widespread closing, locating grant funds to assist, or approaching business leaders to find a solution). Alternatively, if the problem is posed by a specific type of process operation, chemical(s), or is geographically based, conduct your research accordingly.

- **Exploratory investigations:** Once you suspect a particular problem with a particular set of facilities, conduct one or more well-planned, in-depth investigations, perhaps with the assistance of EPA's National Enforcement Investigations Center. These "exploratory investigations" should confirm that the suspected problem exists, refocus attention on more serious or additional problems, reveal underlying causes, or simply find that serious problems do not exist.
- **Existing regulatory gaps:** Determine what regulations apply, what gaps exist in the regulatory structure and where there are opportunities for filling these gaps. The results from exploratory investigations can help you develop suggestions for voluntary initiatives, new regulations or combinations of multiple approaches to fill these gaps.
- **Contribution of noncompliance to the problem:** Determine if the problem is broader than noncompliance; that is, would the problem be solved if 100 percent compliance were achieved? If the problem is based on more than noncompliance, suggest remedies, including the modification of regulations or voluntary pollution prevention initiatives.
- **Significance relative to other environmental problems:** By defining the adverse impacts that you aim to eliminate, you will be more likely to make a convincing case that it is worthwhile to address the selected environmental problem.
- **Relevance to EPA's mission, role and authority:** Consider the problem's relevance to EPA's mission and statutory authorities to ensure that EPA has authority to act and that there is a clear federal role. Consider conducting an exploratory investigation if it is unclear whether the problem is within EPA's scope or jurisdiction. Look for ways that your compliance activities can support existing goals and priorities.
- **Current level of attention:** Examine EPA data systems to determine EPA and the states' current compliance activities in the problem area and their effectiveness. Decide whether the activities should continue and how they can be more effective.
- **Pending regulatory actions relevant to the problem:** Determine what enforcement cases or new regulatory actions (promulgation of new rules) are underway in order to avoid undermining ongoing compliance activities and to coordinate with other experts working on the activities.
- **Planning cycles and opportunities to leverage resources:** Aim to have results of your problem analysis available in time to inform government planning cycles (e.g., for negotiating activity under Memoranda of Agreement and partnership agreements). Also, be sure to highlight opportunities for collaboration between the problem at hand and high-profile national or regional initiatives that could enable you to leverage resources.
- **Relationship to other elements:** Use the information gathered and analyzed to define the problem to inform other components of your strategy. For example, if your research shows that the sector universe is too large to handle through traditional

inspections alone, plan for sizable self-auditing and compliance assistance components.



## Step-by-Step Process for Defining and Selecting Environmental Problems – A Sector-Based Example

EPA regional offices generally know which sectors and media problems are the most serious in the geographical areas they cover, so they should be able to focus attention on narrowly defined areas that can be examined in-depth with exploratory investigations and state information. To ascertain which problems are the most significant and warrant increased attention, we suggest using a process similar to the one outlined below for sector analysis.

Here is one example of an approach used to review problems on a sector basis. It was conducted in order to help EPA focus resources on environmental problems that would yield the highest return on resources. A systematic review of all 192 major manufacturing sectors in the US economy was conducted. The results of this study were used to inform selection of EPA's Enforcement and Compliance Assurance National Priorities in 2003/04.

### **1** Perform an initial screening using the following factors:

- Patterns of non-compliance with the major federal environmental statutes, e.g. Clean Water Act, Clean Air Act, etc.
- Environmental impact indicators including whether the sector produces or uses chemicals on the High Production Volume (HPV) list, produces chemicals that are persistent bioaccumulative toxics (PBT) or persistent organic pollutants (POP), or produces chemicals that have high Toxics Release Inventory (TRI) emissions
- National prevalence of facilities
- Recent or forthcoming regulatory activity

To help determine which sectors meet the initial screening factors, pull information from numerous sources, including EPA's Enforcement Docket; federal government information (e.g., U.S. Census, and the Department of Energy; Regional, state, local and program Web pages; rule promulgation activity; Dun and Bradstreet; National Center for Manufacturing Sciences; Small Business Office annual report; and the news media (i.e., investigative reports).

### **2** Carry out more research on the sectors that have passed the initial screening. Then, compare your list to the ongoing sector-based activity of EPA and the states



*This diagram focuses on the statement of the environmental problem and highlights in gray the other elements that are particularly important in stating the problem and justifying its selection.*



in order to capitalize on their expertise and interest. Consider the following sector-based activity indicators with regard to each sector. Has the sector been:

- Recently affected by new rules, the Small Business Regulatory Enforcement Fairness Act (SBREFA) and/or rules that EPA considers to be economically significant)?
- Considered and previously deferred as a priority problem?
- The subject of active enforcement or received compliance assistance?
- Considered as the subject of new Compliance Assistance Centers?
- The subject of sector-based programs in other offices such as the EPA Office of Policy, Economics, and Innovation's Sector Strategies?
- Ranked high on the previously generated candidates list based on data from the Integrated Data for Enforcement Analysis (IDEA) system?
- Receiving significant, recent state attention?
- The subject of compliance inspector nominations for attention?

**3 Finalize list of candidate sectors** using the abovementioned screening criteria and detailed selection criteria, such as:

- Is there a compliance problem in the sector? Information sources include compliance rates trends from the On-Line Targeting Information System (OTIS)
- Is there an environmental or human health problem in the sector? Are any problems defined in rulemaking background or support documents? Have any problems been identified by EPA staff research?
- Is the problem currently widespread or anticipated to be widespread or a growing problem? Is a problem associated with the sector being addressed by a new rule? Is this a growth industry (economic, market indicators)? Are releases reported via the Toxic Release Inventory (TRI) increasing over time?
- Do possible solutions fall within EPA's role? Is there a nexus with existing Compliance Assistance Centers or a national or regional priority? Is there trade association interest in partnerships? Is the sector best suited for compliance assistance, incentives, or enforcement attention or some combination of tool use? Is the sector under the control of an industry environmental management system? Is the sector of concern under SBREFA?
- Is the problem large enough to merit EPA's attention? Is the problem nationwide or multi-Regional?
- Does the proposed response fit EPA's three- to five-year planning horizon?
- What is the current level of attention to the sector? Is the sector already being addressed by the Agency? Is the sector being addressed by a number of state or local agencies or an outside group such as a trade association?

**4 Select priority sector(s) to address.** The answers to the selection criteria that you have utilized and any weighting that you have assigned to particular criteria will direct the selection of what problem you will address. Remember that there are competing resource needs and priorities in the Agency. Therefore, it will be important to describe the factors that make this problem(s) ripe for resolution and a relative priority and to document the process and criteria used to make your selection decisions.

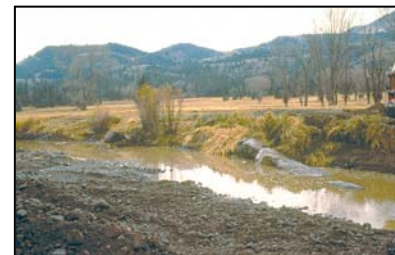
## Challenges and Opportunities

The following case examples provide insights into some projects that employ the concepts described in this chapter. They illustrate some of EPA's attempts to define and prioritize environmental problems and justify their selection as problems to work on.

### **Challenge: Adequately characterizing an environmental problem**

#### *Opportunities and Suggestions*

It is important to characterize, in writing, the environmental problem to be addressed so there is a common understanding by all affected parties. Most problems take many years to address. With changes in Agency staff and the potential involvement of other stakeholders throughout the process, it is helpful to document the problem in terms that clearly make the link to protecting human health and the environment and that contain enough detail to understand the extent and nature of the problem that it is to be solved. This doesn't mean that the characterization has to be lengthy. For example, EPA identified *Combined Sewer Overflows (CSOs) as a National Priority in 2005*. The strategy EPA developed to address CSOs clearly defines their impact on human health and the environment, and the scope of the problem in only a few paragraphs. Following is a portion of the characterization of the CSO problem in that strategy:



*Combined sewer systems (CSS) are designed to collect rainwater runoff, domestic sewage and industrial wastewater in the same pipe. When properly operating, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of rainfall or snow melt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. When the capacity of the system or the treatment plant is exceeded, the excess wastewater flows directly into nearby streams, rivers or other water bodies, typically violating water quality standards.*

*CSOs are a significant cause of water quality impairment as documented in Clean Water Act (CWA) Section 305(b) reports; often occur in areas frequented by the public such as parks, beaches, backyards, city streets and playgrounds; and represent significant threats to public health and the environment due to the risks they create for spreading disease through direct contact with or ingestion of water contaminated with human waste and toxic chemicals.*

*Overflows affect approximately 836 permits in the United States for combined sewer systems. Affected communities are located in 32 states (including the District of Columbia), primarily concentrated in the Northeast and Midwest, and serve*

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approximately 46 million people. Regions 1, 2, 3 and 5 collectively account for 91 percent of the permitted CSOs in the United States.

According to the EPA Office of Water Report to Congress, “Impacts and Control of Combined Sewer Overflows - Final Agency Review,” Draft dated November 2003:

- There are 836 National Pollutant Discharge Elimination System (NPDES) permits for CSOs covering 9,501 outfalls
- Annual discharges from CSOs are estimated to be 850 billion gallons (based on modeling)
- Receipt of CSO discharges: 75 percent to rivers, streams or creeks; 10 percent to oceans, estuaries and bays; 2 percent to ponds, lakes and reservoirs; and 13 percent to other waters (ditches, canals, unclassified)
- 141 CSO permit holders do not have an enforceable schedule to implement Long-Term Control Plans (LTCPs)
- 559 CSO permit holders have enforceable requirements to implement LTCPs (457 in a permit, 102 in enforcement orders)
- 16 CSOs are within 1 mile upstream of a drinking water intake (from a surface water source)

EPA’s CSO Control Policy set a January 1997 deadline for CSSs to meet the nine minimum controls. There are still a significant number of communities with CSSs that have not implemented the nine minimum controls, do not have a Long-Term Control Plan in place, or have long implementation schedules.

This example provides a good characterization of the environmental problem that the strategy is addressing and documents the main source of baseline information used to characterize the problem.

### **Challenge: Identifying serious cross-media compliance problems**

#### **Opportunities and Suggestions**

Region 3’s Vinyl Chloride Initiative provides an excellent example of how to identify serious cross-media compliance problems. Cross-media compliance problems are created by processes or activities in one media (air, water, land, etc.) that lead to non-compliance issues in another media, e.g., Volatile Organic Chemical (VOC) emissions from wastewater discharges can result in a facility exceeding its air emission limits. The Region 3 initiative used a targeting methodology that examined public health data, environmental data and environmental justice/hotspot issues. From this targeting, releases of six chemicals of concern (probable or known carcinogens) were identified. Of these six chemicals, it was vinyl chloride emissions from the chemicals and allied products industry that was identified as the greatest threat to human health and the environment. A series of multi-media investigations were conducted that targeted vinyl chloride facilities in EPA Regions 2, 3, 4, 5 and 6. The initiative was also a good example of establishing goals that ranged from general, performance-based benchmarks to industry benchmarks, as well as environmental justice, and pollutant

reductions goals. This initiative also contributed to elevating national awareness and expertise among the regions in the area of cross-media emission transfers.

### **Challenge: Correcting widespread violations efficiently**

#### ***Opportunities and Suggestions***

*Region 2's Healthcare Strategy* includes a well-researched definition of the problem along with a reasoned explanation of why the problem was selected for action. It is worth noting that Region 2's healthcare initiative evolved out of an effort to eliminate mercury from hospitals and in their colleges and universities compliance initiative. During that initiative, the Region unearthed evidence of widespread noncompliance in an industry that had been relatively free of environmental oversight.

As explained in the full case study of this Healthcare Strategy (Attachment D), Region 2 demonstrated that despite the large number of pollutant sources, with strategic use of inspections, enforcement, self-auditing and assistance outreach they were able to correct violations at nearly all sources without having to conduct inspections or pursue enforcement actions at all sources. The initiative is also a good example of a pattern of noncompliance at healthcare facilities in a single medium (hazardous waste) that led to the discovery of numerous violations in other media. In this case, the hazardous waste violations led inspectors to find noncompliance with other regulations, including Clean Water Act (CWA), Clean Air Act (CAA), and Oil Spill Prevention Control and Countermeasure (SPCC).



Region 2's Healthcare initiative is instructive in that the Region identified serious problems following a limited number of inspections associated with a separate project (Mercury elimination at hospitals). Motivated by the trend of poor compliance encountered by their inspectors and the significant level of enforcement, the Region conducted research to better define the universe of hospitals in the Region and the extent of their environmental problems. Later, once the self-audit and disclosure phase progressed, the Region was able to confirm their assessment that most hospitals were out of compliance with one or more regulation.

# Element 2: Establishing Goals and Measures



## Objectives

- Explain how goals and measures work together.
- Provide a step-by-step process for identifying your strategy's desired results and whether the results have been achieved.
- Identify key challenges and opportunities in goal-setting and selecting and using measures.



## Purpose

This element of the strategic approach addresses establishing:

- An overarching goal or result that is measurable and reasonably achievable in the given time frame
- Outcome and output measures
- Baselines for all measures, or a plan for developing a baseline for each of the measures

It corresponds to Element 3 of the *Framework*, “Desired/Anticipated Outcomes/Results,” and Element 2 of the *Template*, “Establishing Goals and Measures.”



## Approach

The key questions are “**What do you hope to accomplish?**” (goals) and “**How will you determine your progress?**” (measures). You can use measures to show progress toward the anticipated goal, the need for mid-course corrections, the effectiveness of a particular strategy and lessons learned for evaluating the overall approach. During the development of the strategy, identify both final measures of success and interim measures and milestones. Where appropriate, measure the impact of each type of compliance tool (e.g., compliance assistance, incentives, compliance monitoring and enforcement) you use as well as the synergistic effect of the tools to resolve the environmental problem. Measurement occurs throughout the planning and implementation of the strategic approach and for a variety of purposes as illustrated in the measurement continuum below:

### Key Concepts

**Baseline:** The reference or starting point against which progress will be measured.

**Outputs:** Product or service delivery targets you aim to produce. Often presented as the number of activities, work products or actions.

**Outcomes:** Changes or benefits resulting from activities and outputs. Outcomes can be:

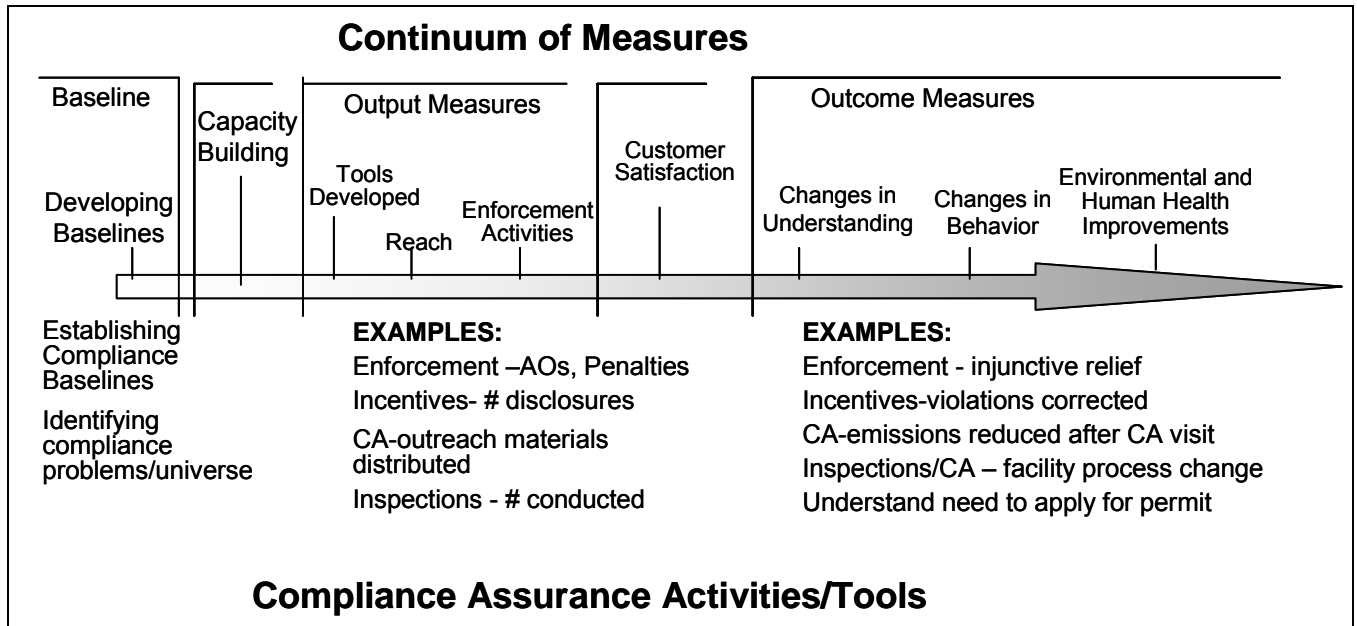
⇒ **short term** (changes in learning, knowledge, attitude, skills or understanding)

⇒ **intermediate** (changes in behavior, practice or decisions)

⇒ **long term** (changes in an environmental condition).

Goals and Measures should be:

- S** - specific
- M** - measurable
- A** - attainable
- R** - realistic
- T** - time sensitive



## Step-by-Step Process for Conducting Measurement

**1 Review baseline information on the environmental problem and target audience.** The goals and measures that you establish for your strategy will flow directly from the information that you have collected on the problem and the populations (e.g., sectors, the public) that are contributing to the environmental problem. In addition to the goals and measures themselves, the methods you choose for collecting both baseline and subsequent performance measurement data may be influenced by the following factors:

- Characteristics of the population of concern, such as knowledge, sophistication, size and resources. Some segments or sub-populations may need to be treated differently.
- The scope of the problem and gaps where more information is needed.

**2 Identify goals.** Establishing a good goal statement for your strategic approach is critical. Your goal statement should define, as specifically as possible, what you hope to accomplish and the time frame in which you expect this to occur. Be realistic in defining what you can achieve in the specified time period. For instance, a goal of “clean drinking water for all



*and highlights in gray the other elements that are particularly important in establishing goals and measures.*

residents of (a large state) within two years” may be desirable but is probably not realistic within a two-year time frame. In addition, “clean drinking water” as an overarching, general goal is fine, but as a goal statement for a specific strategy it is too vague (what is the standard for “clean”?). A better goal statement would be, “By 2009, 90 percent of public water systems (in a large state) will have drinking water that meets all Safe Drinking Water Act standards as determined through annual water testing.”

Remember, too, that the strategic approach is iterative, and you may need to revise your goal statement over time. You may frame the initial goal of your strategy in more general terms, but your goal may become more specific or even change as you learn more information about the problem you are addressing. For instance, in response to multiple chemical spills in a district’s high schools, an initial goal may be “all schools in the district will safely manage toxic chemicals stored on their property by X date.” However, after additional assessment, you may determine that this goal is not practical or feasible. You may need to revise the goal to include “removal of toxic chemicals from individual schools with central storage at the district level” or “substitution of toxic chemicals with non-toxic chemicals.”

Identify, either here or in the statement of the environmental problem section of your strategy, the baseline or reference point against which you will measure progress. You may also want to identify the compliance assurance tool or tools that you plan to use to achieve the goal. For example, “By X date, X percent of all permitted Combined Sewer Overflows (as identified in the 2004 baseline) will have an approved Long-Term Control Plan with an enforceable schedule that will ultimately result in compliance with the technology-based and water quality-based requirements of the Clean Water Act, or a formal enforcement action will have been initiated to achieve that result.”

**3** **Develop measures to determine if you are achieving desired results.** Identify specific measures for each goal. These measures may be aligned with the compliance assurance tool or tools that you plan to use. By measuring the impact of the selected compliance assurance tool(s) in addressing the identified environmental problem, you can better manage for results and communicate the effectiveness of all aspects of the enforcement and compliance assurance program (i.e., compliance assistance, incentives, monitoring and enforcement). After you have undertaken your activity, you also need to conduct a follow-up measurement activity to assess overall impact of the intervention(s). The purpose is to determine how well you addressed the problem and if you are reaching your goals.

Listed below are some of EPA’s national outcome measures for compliance assistance, compliance incentives, and monitoring and enforcement. Some of these national measures or similar ones have been used to assess progress in meeting the goals of specific strategies.

### ***Compliance Assistance Measures***

- Percentage of regulated entities receiving direct compliance assistance from EPA (e.g., training, on-site visits) reporting that, as a result of that assistance, they:
  - Increased understanding of environmental requirements
  - Improved environmental management practices
  - Reduced, treated or eliminated pollution

- Percentage of non-EPA compliance assistance providers reporting an improved ability to deliver assistance as a result of EPA assistance

### ***Compliance Incentives Measures***

- Percentage of audits or other actions resulting in:
  - Reduction/elimination of pollution and protection of populations and ecosystems
  - Improvements in environmental management practices
- Pounds of pollutants reduced, treated or eliminated and populations/ecosystems protected as a result of audit agreements or other actions; dollars invested in improving environmental management practices as result of audit agreements or other actions

### ***Monitoring and Enforcement Measures***

- Percentage of entities taking complying actions as a result of monitoring
- Percentage of concluded enforcement cases
- Percentage of concluded enforcement cases requiring improved environmental management practices
- Pounds of pollution reduced, treated or eliminated and populations/ecosystems protected as a result of concluded enforcement actions
- Dollars invested in improved environmental performance/environmental management practices through concluded enforcement actions
- Inspections, civil investigations and criminal investigations in high-risk areas, areas displaying patterns of noncompliance or areas including disproportionately exposed populations

**4 Identify how the measurement data will be collected and tracked.** Appropriate mechanisms for collecting the measurement data are essential for assessing progress toward achieving the goal. Regardless of how good a performance measure is, if a method for collecting the data does not exist or requires an excessive amount of resources it will not be a useful measure. An illustration comes from EPA's tribal priority strategy. EPA wanted to track the number of tribes receiving solid waste management compliance assistance as one of its measures. While this is a perfectly acceptable measure, the Agency's database for compliance and enforcement activities and measures could not be used to track this information. The database's information on audiences for compliance assistance was limited to higher-level groupings, making it impossible to differentiate how many tribal representatives had received the compliance assistance. EPA determined that there was not sufficient time or resources to modify the existing database to capture the needed information. Capturing this information manually would also require too many financial and staff resources for the value of the information being collected. As a result, the measure was dropped.

If you don't measure it, it didn't happen.

Another lesson learned on collecting and tracking measurement data comes from EPA's Region I. Regional staff developed a phone survey script with many open-ended questions to use with a large number of school personnel. The result was a large number of responses that were difficult to review, tabulate and summarize.



The following table provides examples of strategy goals and measures and of data collection methods appropriate to them:

Strategy Goals	Sample Performance Measures, Including Interim Measures	Data Collection Methods
By X date, verify the compliance status of all facilities in X sector.	Percentage of facilities in the sector that have been inspected.	Review of information in Agency compliance and enforcement databases.
	Percentage of enforcement actions/settlement agreements in the sector.	
	Percentage of facilities in sector that evaluate their air, water and waste process-related operations through self-audits and address associated compliance problems.	Self-audit disclosures and manual tracking.
By X date, reduce by 30% the number of facilities in sector X that are in significant noncompliance (SNC) with air, waste and water regulations (from the baseline established in 2000).	SNC rate of the sector	Review of information in Agency databases.
By X date, 50% of hospitals in the state will eliminate the use of mercury.	Number/percentage of hospital staff who increased their understanding, as a result of assistance provided, of the potential problems that may result from storing and using equipment containing mercury.	On-site visits
	On an annual basis, percentage of hospitals in the state that have conducted baseline assessments of their mercury use and waste.	Pre/post-workshop survey Response to mail or phone survey
	On an annual basis, percentage of hospitals in the state that have established mercury removal and purchasing policies.	
By X date, achieve 20% reduction in emissions of sulphur oxides (SOx) and nitrogen oxides (NOx) (from the 1995 baseline) by the petroleum refining sector.	Total reduction of 205,760 short tons per year of SOx/NOx emissions as a result of settlements and enforcement actions.	Data collected through emission calculations and air monitoring. Tracked through the Integrated Compliance Information System (ICIS).

Strategy Goals	Sample Performance Measures, Including Interim Measures	Data Collection Methods
By 2010, all colleges and universities in EPA Region X (as identified in EPA's 2005 inventory of institutions) will meet applicable RCRA requirements.	Number/percentage of college/university staff who increased understanding of RCRA obligations as a result of assistance.	Pre/post workshop test, written or phone sector-wide survey after distribution of RCRA assistance materials.
	Number of colleges and universities obtaining the required RCRA permits.	Review of information in Agency databases.
	Number/percentage of colleges and universities inspected by EPA with no RCRA violations identified.	Inspection reports.

**5 Conduct measurement activities.** Use of each tool constitutes a separate activity that should, when possible, include a step to measure the outcome of the activity or, at a minimum, record the “outputs” from the activity. For some compliance assurance tools, follow-up may already be built into the compliance assurance activity. For example, complying actions undertaken during a compliance monitoring inspection can be recorded by the inspector at that time on the Inspection Conclusion Data Sheet. In other cases, you may need to undertake a specific or additional follow-up activity or verification to assess the outcome of the intervention. For example, a follow-up to an inspection may be an enforcement action requiring specific injunctive relief. Reviewing documentation sent by a facility disclosing under the Audit Policy or sending an inspector to the facility can provide information on whether the audit resulted in reduced pollution or a changed environmental management practice. Compliance assistance almost always requires an additional follow-up activity (e.g., a survey, a follow-up site visit or an inspection). For compliance assistance, the follow-up may take the form of survey questions (e.g., on a test, through the mail, on e-mail or over the telephone) or questions asked during a site visit. Some of these methods may need to address the Paperwork Reduction Act (PRA) restrictions on the number of non-federal respondents that EPA can contact to ask questions. If you do need to collect information from non-federal respondents an Information Collection Request (ICR) may need to be prepared and submitted to the Office of Management and Budget. The time needed to do this should be factored into your measurement planning. See the Challenges section of this chapter and page 11 in Chapter 8 for more details on the PRA and ICR process.

**6 Track the results of compliance assurance activities.** It is important to establish some mechanism for tracking the progress of your strategy in achieving its goals. This may be achieved through something as simple as keeping a notebook with summaries of all activities, strategy and measure modifications, and outputs and outcomes of activities. It is more common, however, for EPA staff to create a database dedicated to tracking a specific strategy or entering the data into a national database. In general, EPA staff is expected to enter both the outputs and the outcomes of EPA's compliance assistance, compliance monitoring, incentives and enforcement into the Agency's Integrated Compliance Information System (ICIS) or medium-specific

databases, as appropriate. There are certain instances, however, when it may be necessary to track information manually.

**7 Analyze the data.** After collecting information on results, perform appropriate analysis. The type and complexity will depend on the quantity of information you have, whether it is quantitative or qualitative, or your available resources. If you identify gaps, earmark necessary resources and allocate appropriate time to collect additional information. Review, reassess and revise the strategy as needed. Prepare results in a clear, presentable form, understandable to a general audience.

**8 Communicate results.** Use the data collected to demonstrate the value of the work being undertaken. You can communicate results in a variety of forms, including press conferences and releases, e-mail list announcements, magazine or trade journal articles, newsletters, reports, and internal briefing of program managers, to name a few. Do not wait until the end of the strategy's implementation to begin reporting results. There is value in reporting on interim milestones (both outputs and outcomes); for instance, the communication helps inform other entities that may be contributing to the environmental problem that a problem exists and how it is being addressed. This increased awareness may, in turn, lead to increased compliance. Following is a sample of interim results included in a press statement:

*In 2005, EPA entered into legally binding agreements with 11 major domestic airlines and nine smaller airlines to ensure the safety of the drinking water used by their passengers and crew. The actions came after an EPA investigation of 327 U.S. and foreign airplanes at 19 airports in 2004 found coliform contamination in 15 percent of them. ... EPA will continue to work with smaller, regional and charter airlines to ensure the safety of their drinking water.*



## Challenges and Opportunities

The following case examples highlight a few of the key goal-setting and measurement challenges that have been encountered during EPA's implementation of the strategic approach. The examples also identify some opportunities and suggestions for addressing these challenges that have come out of the pilots using the strategic approach.

### **Challenge: Disconnect between the goals of the strategic approach and the performance measures**

This challenge came up several times during the pilot phase testing the strategic approach. In some cases the disconnect was the result of changes being made during implementation of the strategy with either the goal statement or the specific measures being modified but not both, resulting in inconsistency. In other instances, performance measures were identified for each tool being utilized to address the environmental problem, but the measures did not provide enough information to indicate whether the goal or goals were being achieved.

A hypothetical example of the latter would be a strategy with a goal of having construction sites in a particular geographic area comply with all applicable stormwater regulations within three years and performance measures limited to:

- Number of guides on stormwater requirements distributed to the target audience
- Number of representatives from construction companies in that area attending a stormwater workshop
- Number and percentage of workshop attendees indicating that they improved their understanding of the stormwater requirements
- Number of stormwater inspections conducted at construction sites in the area



While there is nothing wrong with these measures per se, they do not go far enough to measuring progress towards the goal. One cannot discern whether providing stormwater information, and any reported improvements from the target audience about their understanding of the requirements, has translated into improved compliance. In addition, the number of inspections alone is not a useful measure. What were the results of the stormwater inspections? Did they occur after the compliance assistance was provided? Had baseline information already been established about compliance with the stormwater requirements before the compliance assistance was provided?

### ***Opportunities and Suggestions***

Utilize the many existing resources for developing good environmental performance measures that are directly linked to the goal of your strategy. The table under Step 4 in this chapter illustrates performance measures that are clearly linked and designed to achieve the identified goals. Other resources include EPA's *Guide for Measuring Compliance Assistance Outcomes*, which is available at [www.epa.gov/compliance/resources/publications/assistance/measures/index.html](http://www.epa.gov/compliance/resources/publications/assistance/measures/index.html) . This document contains detailed information on developing measures and collecting and analyzing compliance assistance data. In addition, go to EPA's Web site at [www.epa.gov/evaluate](http://www.epa.gov/evaluate) for more information that is specific to evaluation but addresses many of the same steps involved in developing goals and measures.

### ***Challenge: Emphasis is on implementing the strategy rather than measuring results***

Several of the teams piloting the strategic approach reported that this was one of their greatest obstacles. They reported that once an environmental problem had been identified, there was often a great urgency to take action to address the problem. This translated into the majority of their time being spent on planning for and conducting the inspections; developing and distributing materials to inform the regulated community about the problem; conducting workshops; inviting facilities to self-audit, correct and disclose violations; and initiating enforcement actions as needed. Measurement was often an afterthought. Although the strategic approach emphasizes spending time up front to scope out the problem and establish good goals and measures, doing so was still a struggle for many of the teams. Staff knew how to provide compliance assistance, conduct inspections, etc. However, many of the team members reported lack of

knowledge about and experience with goal-setting and measurement as one of the impediments to doing it.

### ***Opportunities and Suggestions:***

The following suggestions for addressing this challenge were made by the teams piloting the strategic approach:

- Establish a review process to ensure that the tools selected and the strategy's performance measures are directly linked to each strategy's goals. It was recommended that this review be done by an individual or individuals with expertise in measurement and the strategic approach. It was also suggested that the Agency develop guidance providing examples that link the environmental problem, the approach's goals, the tools selected and the corresponding measures.
- Make measurement a management priority. Get senior management to buy in, support it with resources and staff time, and recognize that staff may complete fewer activities if they spend time on measurement.
- Require measurement of activities (e.g., include language in grant specifications) and require goals and measures of individual projects.
- Dedicate and train a person to do measurement, and provide support and outreach to others. Hire college interns to do follow-up phone/mail surveys of regulated entities after they attend an EPA workshop or receive an on-site compliance assistance visit from EPA.
- Use the measurement data to inform others of progress on meeting the goals of the strategy.

### **Challenge: Obtaining measurement data to set baselines and measure results**

Setting and achieving measurable goals has been a challenge for several of the projects testing EPA's strategic approach. One reason for this problem has been the difficulty with obtaining data and other information on a sector's, or other regulated entity's environmental performance prior to and following the compliance assurance activities. This is particularly true for sectors with many small businesses where EPA has minimal compliance and enforcement data, and when reporting of data is voluntary.

The Paperwork Reduction Act (PRA) also limits the Agency's ability to obtain measurement data. This law attempts to minimize the federal paperwork burden on the public and requires federal agencies to obtain Office of Management and Budget (OMB) approval prior to collecting substantially similar information from ten or more non-federal respondents. EPA has a generic ICR for collecting some limited outcome data from its compliance assistance activities. Regions requesting approval for information collections using the generic ICR for compliance assistance can expect the process to take approximately thirty days to obtain OMB approval. Certain activities are not subject to the Act; the main one applicable to EPA's compliance assurance and enforcement program is the collection of information during the conduct of a criminal or civil enforcement action. For more information on the PRA and information collection requests, go to EPA's Web site, [www.epa.gov/icr](http://www.epa.gov/icr).

## Opportunities and Suggestions

One approach for obtaining additional measurement data is illustrated by EPA Region 1. The Region funded the development of tools to encourage voluntary reporting of information. One such tool was the *Environmental Assessment Template*, which helps federal and state agencies collect information from hospitals on environmental performance indicators, waste generation, pollution prevention and energy/water conservation. The information collected from 25 hospitals in three states was used to evaluate hospital mercury programs; identify sector-wide environmental, health and safety challenges; develop compliance assistance tools; and further define the need for assistance activities for the sector. The federal template was modified into three state-specific tools for Connecticut, Rhode Island and New Hampshire. The federal template is available at: [www.epa.gov/region1/healthcare/pdfs/EPAHospitalTool.pdf](http://www.epa.gov/region1/healthcare/pdfs/EPAHospitalTool.pdf)



### Challenge: Choosing the right data collection method

Gathering data is often the most difficult, time-consuming and resource-intensive step in conducting measurement activities. Therefore, selecting the data collection tool or method that will provide the best information is critical. A number of data collection tools are available, including surveys, Inspection Conclusion Data Sheets, focus groups, pre/post tests, and mandatory reporting forms like permit applications and Toxics Release Inventory forms.

## Opportunities and Suggestions

Remember that the methods you choose for collecting both baseline and subsequent performance measurement data may be influenced by factors like existing information gaps; the scope of the problem; the knowledge, sophistication, and size of the audience or universe of facilities; and available resources. Some segments or sub-populations may need to be treated differently.

By way of example, *EPA Region 1's pilot strategy team for schools* reported that they initially planned to send a written survey to all the schools in the region to: (1) identify barriers to improving the school's environmental performance; and (2) solicit information regarding the kinds of tools, services and incentives needed to get schools to make broad-scale behavior changes that would result in increased compliance and healthier, safer schools. However, through some initial contact with school representatives and feedback from inspectors, they learned that many schools were unaware of the environmental issues affecting schools and the regulatory requirements with which they needed to comply. In light of this information, EPA decided that a detailed written survey would be an ineffective means of obtaining data. Instead, EPA staff used, with great success, a series of focus group discussions that included representatives from several groups associated with K-12 schools, including those knowledgeable about their environmental issues.

**Challenge: The length of time it may take to achieve the goals of the strategy**

***Opportunities and Suggestions***

Be realistic about how long things take. Try to factor in contingencies (i.e., school schedules if the target audience is schools, contractual factors if using a contract). Be ready for mid-course corrections.

*EPA Region 2's Healthcare Initiative* provides a good example of the time that can be involved in addressing an environmental problem. The initiative began in 2002 with 480 healthcare facilities. The initial approach focused on correcting hazardous waste violations and a voluntary effort to have hospitals remove mercury-containing waste from the healthcare waste stream. The initial results included mainly outputs (e.g., number of workshops on identifying and managing healthcare wastes delivered, number of compliance assistance tools developed and distributed, number of audit agreements signed, and number of voluntary self-disclosures with or without signing an audit agreement) and some interim outcomes from the use of these tools.

Four years later, the Region is reporting on significant human health protection from voluntary self-disclosures, which have resulted in the correction of more than 1,700 violations. More than 150,000 staff and more than 20 million hospital visitors annually are now better protected because of this initiative. These self-disclosures have also yielded significant protection of the environment. More than one million gallons of oil, more than 200,000 pounds of hazardous wastes and more than 150,000 pounds of Chlorofluorocarbons (CFCs) are now being managed properly. Mercury use also has been reduced by 96,000 pounds.

This effort demonstrates that meaningful results can be achieved, but it often takes several years to implement the strategy and to collect enough data to show significant results.

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# Element 3: Selecting, Sequencing and Segmenting Tools



## Objectives

- Introduce types of tools and considerations for their use that will address the target audience contributing to the environmental problem.
- Identify key challenges and suggestions in selecting and implementing the tools.



## Purpose

In this section, we will examine some of the more common considerations in selecting, sequencing and segmenting compliance assurance tools. This element corresponds to Element 4 of the *Framework*, “Use of Available Compliance Assurance and Enforcement Tools,” and Element 3 of the *Template*, “Priority Strategy.”

The goal is to select the tool or mix of tools that will best address the environmental problem. The information provided is intended to illustrate the breadth of considerations that could affect the tool selection process, rather than provide an exhaustive list of factors or a formula. Professional judgment and creative problem solving are still important in identifying the best approach for addressing the problem.



## Approach

Select the tool or combination of tools that will best address the environmental problem and lead to improved performance by the target audience. Below are **five general categories of tools**. For more information about these tools and how they are used at EPA, look at <http://www.epa.gov/compliance/>.

### Key Concepts

**Segmentation** (of the target audience): The selection and implementation of more than one tool to address different needs within the target audience to yield a comprehensive approach.

**Sequencing:** The implementation of more than one tool in a particular order to address the entire target audience to achieve maximum efficiency and impact.

### Key Considerations

Based on lessons learned from the pilot projects and other experience in developing and implementing strategic approaches, we provide the following considerations for selecting tools:

- Consider the full range of possible tools to address the problem and evaluate the impact on the target audience; even if only one tool is ultimately selected. You may modify the tool(s) you initially select as you learn more information about the audience contributing to the problem.
- When sequencing tools, consider how to transition from one to the next and the impact on the target audience.
- When segmenting tools, consider the impact on the target audience and outcome for each set within that population.
- Identify the anticipated resources (internal and external) needed to utilize each tool.

- **Compliance Assistance (CA).** Compliance assistance involves activities, tools or technical assistance that provides clear and consistent information for helping: (1) the regulated community to understand and meet its obligations under environmental regulations; or (2) compliance assistance providers to aid the regulated community in complying with environmental regulations. Compliance assistance may also help the regulated community find cost-effective ways to comply with regulations or go “beyond compliance” through the use of pollution prevention, environmental management practices and innovative technologies, thus improving its environmental performance. To be categorized as a compliance assistance project or activity, at least one objective of the project or activity must be related to achieving or advancing regulatory compliance.
- **Compliance Monitoring (CM).** Compliance monitoring determines compliance status and detects violations of regulatory requirements and other legal obligations. Compliance monitoring personnel develop and use targeting tools and conduct inspections, investigations and evaluations of facilities to determine compliance status, respond to citizen tips and complaints, and support case development. Compliance monitoring involves the development and dissemination of new compliance monitoring tools and technologies for inspectors and the regulated community, and the training of compliance monitoring personnel. It also involves developing state, local, tribal and international capacity for monitoring.
- **Compliance Incentives (CI).** Incentives may provide encouragement for companies to take proactive measures and to take advantage of compliance assistance resources and opportunities. In essence, incentives prompt facilities to monitor their own compliance. Some EPA compliance incentive strategies or policies (e.g., Audit Policy, Small Business Compliance Policy) limit companies’ exposure to penalties or inspections if they have taken voluntary measures to discover, disclose and correct violations and have a solid compliance record. Compliance incentive strategies may also include partnerships between government and the regulated community, such as the Environmental Results Program.
- **Enforcement.** Enforcement requires the correction of environmental problems and returns a violator of the law to compliance. It can discourage the violator and other similarly situated entities from further violation by placing all regulated entities on an equal footing, eliminating any economic advantage to noncompliance.
- **Innovations & Sound Business Practice.** There are additional innovative practices to improve facilities’ compliance profile. These may take the form of voluntary, sustainability-oriented programs and projects such as pollution prevention, environmental management systems, best management practices and peer mentoring. Such innovative activities often encourage environmental performance beyond compliance.

Before considering which tool or tools will best address the environmental problem, consider how you wish to influence a change in the target audience’s behavior. A range of options is available to foster compliance and improve environmental performance. Some of the more commonly used options that lead to behavior change include:

- **Education.** Compliance requires that the regulated community be aware of and understand the regulations that apply to it and that it have the means for achieving

compliance with those requirements. Education makes information available in ways that meet the needs of the regulated community for access, ease-of-use and understanding, and practical technical assistance.

- **Encouragement.** Removing actual or perceived barriers to compliance, providing incentives for responsible action, and supporting a culture of environmental stewardship and superior environmental performance can enhance compliance and improve environmental quality.
- **Accountability.** To achieve compliance, it is necessary to have measures in place that determine the success of actions taken by the regulated community and regulators. The regulator must be able to gather information on the regulated community's compliance and to take appropriate action when the requirements of the law are not being met. The regulated community needs to know that it will be held responsible for its environmental performance and how that performance will be determined.
- **Deterrence.** The complement to providing incentives for compliance is providing disincentives for noncompliance. This means leveling the playing field to remove unfair economic advantages derived from noncompliance and ensuring that everyone in the regulated community is held to the same standard of responsibility and performance.

Many factors inform the decision as to which compliance assurance tool(s) to use to address a particular environmental problem and influence behavior change by the target audience. There is no set formula. Your strategy may include one tool, or a mix of tools. The important point is that **all tools should be considered in the planning process.**

The following table serves to illustrate some of the considerations that can inform tool selection. Each of these tools can embody several of the behavior-changing options discussed above. For example, compliance monitoring can educate, provide accountability and function as a deterrent for the facility being inspected. Each tool has been assigned a "primary behavior option," while recognizing that the tool may also be used to fulfill the other options.

All tools should be considered in the planning process.

Note, too, that there is no expectation that a tool should only be used when both the situational and audience characteristic considerations associated with it have been met. For instance, when there is a threat or actual harm to human health or the environment that requires immediate correction, EPA may use enforcement even if there is no indication that the person or entity responsible for that threat or harm willfully violated the law.

**Factors to Consider for Tool Selection**

Tool	Primary Behavior Option	Situational Considerations	Audience Characteristic Considerations
Compliance Assistance	Education	<ul style="list-style-type: none"> <li>▪ As part of the initial effort to implement a new rule.</li> <li>▪ When the rules have been out for a number of years and data indicate “hot spots” of noncompliance or misunderstanding of certain aspects of the regulatory requirements.</li> <li>▪ When enforcement and inspections do not seem to be improving compliance in a sector.</li> <li>▪ When the regulations are particularly complex.</li> <li>▪ When a regulated entity requests assistance.</li> </ul> <p><i>When considering compliance assistance as a tool, refer to federal or state policies that may require up-front compliance assistance such as the U.S. EPA Indian Policy.</i></p>	<ul style="list-style-type: none"> <li>▪ When the sector is populated primarily with small businesses.</li> <li>▪ When regulatory compliance information is not readily available or accessible due to demographic, geographic, language, economic or other barriers.</li> <li>▪ For sectors with well-defined networks (e.g., trade associations) that are willing to partner or maximize the potential to make compliance assistance accessible.</li> <li>▪ When the regulations are perceived as complex.</li> </ul>
Compliance Monitoring	Accountability	<ul style="list-style-type: none"> <li>▪ Before and after a compliance assistance effort to determine level of compliance/effectiveness of effort.</li> <li>▪ As follow-up with nonresponders to an incentives letter.</li> <li>▪ To follow up on citizen, employee, state, local, other federal agency tips or complaints.</li> <li>▪ To determine compliance with regulations, often on a schedule that is mandated by the regulation or statute.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To address specific sectors based on significant noncompliance or recurring violations.</li> </ul>

Tool	Primary Behavior Option	Situational Considerations	Audience Characteristic Considerations
Compliance Incentives	Encouragement	<ul style="list-style-type: none"> <li>▪ To encourage identification and correction of noncompliance and negative environmental impacts.</li> <li>▪ To encourage innovative approaches to environmental compliance or environmental performance.</li> <li>▪ As part of a stepped-up enforcement activity.</li> <li>▪ To promote increased self- or third-party auditing.</li> <li>▪ To promote improved performance that goes beyond compliance.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The noncompliance involves multiple programs and facilities.</li> <li>▪ The sector consists of large numbers of smaller sources that the agency does not have enough resources to address. Economies of scale are possible.</li> <li>▪ The sector's compliance history may indicate that certain incentives are appropriate (i.e., incentives will actually motivate improved performance or changed behavior).</li> <li>▪ The sector has well-defined networks (e.g., trade associations) that are willing to partner or maximize the potential to make compliance assistance accessible.</li> </ul>
Enforcement	Deterrence	<ul style="list-style-type: none"> <li>▪ When there is a threat or actual harm to human health or the environment that requires immediate correction.</li> <li>▪ Where the cost of the remedy is expected to be high.</li> <li>▪ When enforcement supports efforts of other entities such as states or citizen groups.</li> <li>▪ When the situation may set a precedent.</li> <li>▪ When the threat crosses state lines, is regional in impact or has national implications.</li> </ul> <p><i>When considering enforcement as a tool, refer to U.S. EPA and state Enforcement Response Policies to assess agencies' position on specific types of violations.</i></p>	<ul style="list-style-type: none"> <li>▪ Parties have demonstrated unwillingness to achieve compliance voluntarily (i.e., inspections reveal continued noncompliance within sector after a CA effort, or individual facilities have a history of noncompliance).</li> <li>▪ If the violations are willful.</li> </ul>

<b>Tool</b>	<b>Primary Behavior Option</b>	<b>Situational Considerations</b>	<b>Audience Characteristic Considerations</b>
Innovative and Sound Business Practices	Encouragement	<ul style="list-style-type: none"> <li>▪ To encourage innovative approaches and technology transfer that will improve environmental performance beyond compliance.</li> <li>▪ To encourage practices that will address both the facilities' economic interests and improvements to the environment such as pollution prevention, environmental management systems and best management practices.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To promote “greening initiatives” for facilities with vendors/suppliers.</li> <li>▪ To encourage mentoring between large and small, or leading and following, facilities.</li> <li>▪ If the facility, company or sector volunteers to test or incorporate new business practices.</li> </ul>



## Step-by-Step Process for Selecting Tools

Tool selection is one of the most critical elements in the success of the strategic approach. Selecting the best option for behavior change requires review of, and cross-reference with, other key elements during the planning process.

Provided here are suggestions and examples of the type of information to consider and the other elements in the strategy that you should consider in the decision-making process.

### 1 Review the information acquired from the baselining of the environmental problem(s) and the target audience(s).

#### Map the target audience's characteristics.

Audience characteristics can include knowledge of their environmental responsibilities; level of sophistication to understand the problem; size and location of the potential target audience; available resources of each facility to address the problem in a timely manner; history of noncompliance across and within the sector; willingness to partner with you to address the problem; target audience obstacles to overcome such as language, cultural and socioeconomic obstacles; and sector-market barriers such as high turnover, transient workforce, and organizational and structural makeup.

#### Identify and justify segments or subpopulations that may need to be treated differently.

For example, a target audience may have different skill and resource levels. Compliance assistance could be used for the facilities needing to understand the environmental requirements, while compliance monitoring could be used for the facilities possessing a higher level of sophistication and greater resource availability.

**Identify gaps where more information on the target audience is needed and identify the approach you will take to acquire that information.** Some approaches to gathering more information may include focus groups with the target audience to identify the root cause of the problem and their compliance needs; meetings with trade associations to gain an overall understanding of the sector's compliance issues and identify vehicles to communicate with the associations' members; and meetings with other regulatory agencies that may have information on location of or compliance issues with facilities that are subject to other requirements and are not easily identified through typical channels.

### 2 Review the overarching goals and measures of the strategy and select tools that will meet those goals and address the target audience needs.

For example, if the overarching goal is to reduce air toxics emissions by 700,000 tons over a two-year period, assess whether more than one tool will be needed to achieve such a goal. If



*This diagram focuses on tool selection and sequencing and highlights in gray the other elements that are particularly important during the decision-making process for tool selection.*

more than one tool is required (e.g., compliance assistance and enforcement) evaluate the tools' impact on the target audience's compliance and the collective contribution of the tools in meeting the goal.

**3** If you find that multiple tools will best address the environmental problem and influence behavior change, **plot the order of the tools (if sequencing), the relationship across tools (if segmenting)**, and the approach for transitioning tools.

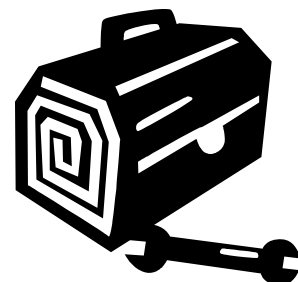
**4** For each tool selected, **research the potential available resources** within and outside of your agency. To the extent possible seek commitment from the appropriate authority. Do not assume that the expertise, material and funding will be available at the time of implementation.

## Challenges and Opportunities

The following case examples and suggestions provide insight into the circumstances under which different types of tools have been used. They illustrate the Regions' and states' thought processes in responding to the questions:

- Why was a certain tool(s) selected?
- Why were certain tools used in a particular order or sequence?
- Why were certain tools used for different sets within the target audience?

There is often no single tool or clear set of tools that best addresses a problem and influences behavior change; however, these case examples can provide you with ideas on ways to most effectively address your environmental problem through use of a specific tool or sequencing of tools.





**Challenge: How to address sector-wide compliance problems through sequencing of tools that will best address the environmental problem given the target audience's characteristics**

**Opportunities and Suggestions**

OECA's *Stormwater Compliance Integrated Strategy* provides an example of how some of the compliance assurance tools were sequenced and the rationale for these decisions. The requirements for Phase I National Pollutant Discharge Elimination System (NPDES) storm water permit applications and coverage have been in effect for more than 10 years. EPA and states spent years educating industry about storm water compliance requirements (compliance assistance efforts include numerous trainings, storm water web sites, public service announcements, guidance documents, fact sheets, brochures and model permits). Nonetheless, in 2000, many industrial dischargers were still illegally discharging storm water. In response, EPA sequenced from outreach and compliance assistance toward increased enforcement for industrial dischargers across a targeted watershed or geographic area or against a specific sector with potential for highly contaminated runoff.

Then, when the Phase II NPDES storm water requirements became effective in March 2003, EPA again offered compliance assistance to all regulated entities affected by these requirements because they were new.

Another approach to tool selection and sequencing is illustrated by the *Indiana Department of Environmental Management (IDEM) Auto Salvage Yards* program. IDEM received more than 100 individual complaints per year about auto salvage compliance issues. Armed with the knowledge that there was a compliance problem across a sector that had minimal resources and limited understanding of the requirements, but not aware of the breadth of the problem across the state, IDEM provided **compliance assistance** to all the auto salvage facilities in the state so that they could learn about proper environmental practices and make corrections. Following the delivery of assistance, they also conducted **compliance monitoring** to gather more information on all the potential facilities through aerial flyovers and multimedia inspections. These steps were followed by **enforcement** for facilities not taking the steps to comply.

**Challenge: When to consider addressing a sector-wide problem through segmentation of the sector universe**

**Opportunities and Suggestions**

Not all of the target audience within a sector is subject to the same legal requirements due to a number of factors (e.g., facility size or age, location in a sensitive ecosystem area, additional state or local regulations). Moreover, there are sector characteristics (e.g., willingness to comply and take corrective action voluntarily, history of noncompliance, seriousness of violations identified, structural and organizational complexity of the facility) that will factor into treating facilities differently to achieve the same compliance goal. Assess the best tool mix for the target sector response by reviewing the legal requirements impacting the sector, and past compliance rates and current compliance issues. This type of assessment could help in your tool selection and

segmentation process. Below are two case examples. The first highlights legal requirements based on facility size, and the second emphasizes sector characteristics based on facilities' complexities, resources and willingness to participate in the strategic approach.

In the *EPA Region 2/New York and New Jersey Technical Assistance Providers Initiative for 1400 Dry Cleaners*, the Region distinguished the sector between small (one dry cleaning machine) and larger, "industrial"-sized facilities (four to six dry cleaning machines with small quantity generators of hazardous waste). **Compliance assistance** developed and delivered by EPA, the state and the dry cleaners association included multimedia information packets, workshops and on-site visits for all facilities to help them understand their regulatory requirements. In addition, EPA provided an **incentive**, promoting its *Small Business Policy* to encourage facilities to assess and change their operations. For this purpose facilities were treated differently or segmented based on the size of the facility. Small facilities were offered on-site compliance assistance, while the larger facilities received RCRA **compliance monitoring** inspections to address imminent environmental problems through timely enforcement.

For the *EPA Region 1 Colleges and Universities Initiative*, the region developed a phased approach that segmented the use of the tools based on the characteristics of the subpopulations within the sector, such as varying size and institutional complexity, knowledge of environmental requirements, availability of resources, and seriousness of violations. Facilities had the opportunity to select which phase of the strategy would best fit their given characteristics. In doing so the entire sector could be addressed. The strategic approach was as follows:

- Well-publicized **enforcement** presence to ensure accountability and address more serious violations
- **Compliance assistance** delivered through multiple vehicles to reach the entire audience
- **Compliance incentive** promoting EPA's Audit Policy and encouraging facilities to self-regulate
- **Sound business practice** promoting innovative approaches such as peer auditing and greening pilots on campuses to encourage sustainability and environmental stewardship.

# Element 4: Establishing Roles and Assigning Responsibilities



## Objectives

- Discuss how to engage a team that will plan and implement the strategic approach.
- Provide a process for identifying the individuals and organizations to implement the strategy that have the desired expertise.
- Identify challenges and opportunities in establishing and maintaining a team.



## Purpose

This information on this element includes some of the considerations in assembling a team that is well suited to develop and implement the strategy as well as desirable attributes of potential partners. This element of the strategic approach corresponds to Element 7, “Involved Stakeholders and Roles and Responsibilities” of the *Framework* and Element 3, “Priority Setting,” Section E, “Assign Roles and Responsibilities,” of the *Template*.

After initially discussing the need to establish clear internal leadership roles, this chapter focuses on the wide range of external expertise available to engage in the strategy’s development and collaborate with you to implement the strategy. The goal for this element is to identify the internal and external team members that meet the needs of the strategy and ensure that each group (and member) has a clear understanding of their role.



## Approach

Planning and implementing a strategy requires a team of experts with clearly defined roles and responsibilities. Also required is a team with the appropriate levels of knowledge and skill sets.

Selecting the strategy’s leadership is the obvious first step to developing, implementing and adjusting the strategy. The leader(s) must have the time to work on the strategy, the ability to select team members and marshal available or needed resources. Finally, the leader(s) must have decision making authority or direct access to decision makers.

### Key Concepts

**Stakeholder:** An individual or entity that has an interest in or is affected by the planning, implementation or results of the strategy.

**Partnerships:** A commitment within or across organizations to leverage resources and expertise to address environmental problems.

**Collaborative Problem Solving:** When affected stakeholders work together and bring their collective resources to solve common problems that cannot be solved individually.



The team leaders should select team members based on their knowledge of the problem, relationship to the target audience, resources allocated to plan and implement, and access to information. A core number of “permanent” team members will ensure continuity over the strategy’s life. The team may want to engage additional members on an intermittent basis to address challenges as they arise.

External entities or stakeholders can also play an important role in the strategy. The role stakeholder’s play is defined by whom they are, the type and extent of interest in the strategy, your need for input and support, and how they are impacted by the strategy, including their ability to promote or change behavior associated with the environmental problem addressed. Examples of external stakeholders that could participate on your team and share in the success of the strategy include:

- Government agencies (e.g., federal, state, tribal, local, cross-border agencies with Canada and Mexico)
- Educational/academic institutions (e.g., colleges, universities, vocational schools, K-12 schools, research centers)
- Business community (e.g., industry, consultants, vendors and suppliers, economic development centers)
- Nonprofit organizations (e.g., trade and professional associations, advocacy groups, non-regulatory assistance organizations such as Small Business Assistance Providers and Small Business Development Centers)
- Community groups (e.g., civic and community organizations, neighborhood associations)

**Key Considerations**

Based on lessons learned from the pilot projects and other experience in developing and implementing strategic approaches, we provide the following considerations for creating your team:

- Identify a lead manager and staff who are responsible for coordinating and communicating with all of the managerial and staff partners throughout the planning and implementation process.
- Identify internal or external partners that have (1) the requisite expertise and skill level to assist in addressing the problem or (2) an understanding of or sound relationship with the target audience.
- Assign individual responsibilities that match the person’s skill level and knowledge and complement the responsibilities of the rest of the team; do not duplicate and do not underutilize.

It is extremely important to engage potential stakeholders on your team early in the planning process and communicate with them throughout the strategy’s implementation. Without a feeling of ownership and a stake in the outcome – particularly when collaborative problem solving is the goal – buy in and success is illusive. The following table illustrates some of the considerations in whether to create partnerships, with whom you might partner and what the partner may have to offer to the strategy.

Considerations for Partnering	Potential Partners to Fulfill Role	Potential Partner’s Contribution to Strategy
Limited baseline information requiring outside data to assess breadth of problem and scope of target audience	State, tribal, and local governments	Ambient environmental monitoring data; facility identification, contact information and profiles; discharge and emissions data and reports; enforcement and/or compliance histories

*Element 4: Establishing Roles and Assigning Responsibilities*

<b>Considerations for Partnering</b>	<b>Potential Partners to Fulfill Role</b>	<b>Potential Partner's Contribution to Strategy</b>
National or regional compliance problem requiring substantial resources	Other federal, state, or tribal agencies regulating the target audience	Leveraging of committed resources for dual purposes or sharing of underutilized resources (FTEs, funds, equipment)
Existing partnerships or networks in place to gain access to and more information about the target audience	Trade and professional associations, economic development agencies, community organizations	Facility identification, contact information and profiles; introductions to target facilities; onsite assistance at facilities, development of assistance material; monitoring of environmental improvements; providing venues for meetings and training
Building capacity to share information with the target audience	State, tribal, and local government, community groups, trade associations, regulated facilities	Leveraging of existing communication vehicles (e.g., newsletters, Web sites, meetings, site visits) to inform the target audience and interested stakeholders
Understanding the target audience's complexities that will drive improved performance and address root causes of the problem <ul style="list-style-type: none"> <li>▪ Technological barriers to enhancing process and environmental performance</li> <li>▪ Small business or businesses with limited environmental expertise or resources</li> <li>▪ Culturally and linguistically diverse target audience</li> </ul>	Academic institutions, research centers, professional associations, small business assistance providers, vocational training centers, trade associations	Technical and process assessments and assistance; small business assistance; vocational training; alternative communication vehicles to reach non-receptive members of target audience
Environmental problems with potential community impact or impact on business communities located in residential areas	Local government, civic associations, community groups, local business owners, economic development agencies	Conduct surveillance of the target audience; make informed consumer choices that impact the facilities (e.g., green dry cleaners); use community or business communication venues to publicize good environmental stewardship actions



## Step-by-Step Process for Developing a Team

Creating a team that will complement each other and work together to address the ultimate goals of the strategy requires consideration of some of the other elements during the planning process.

Provided here are suggestions and examples of the type of information to consider in planning for this element.

**1 Designate team leadership.** Effective leadership is essential to developing, implementing, and adjusting the strategy. The team leaders should set aside specific, dedicated time for the strategy and be available and ready to make decisions. Ultimately, the team leader(s) is responsible for each step in this chapter and those of Element 5 (e.g., developing and overseeing the implementation work plan and schedule).

### 2 Identify the list of skills and expertise

**needed** to understand the complexities of the environmental issue; have information about and access to the target audience; and develop and/or implement the identified compliance assurance tools.

**3 Identify potential partners** (individuals where possible and organizations at a minimum) with the desired skill set, knowledge and abilities. View broadly potential partners both within and outside your organization. The type of partners and the decision whether to expand your team to outside stakeholders is at the discretion of the strategy's leaders. For example, if a more traditional approach such as enforcement only is determined to be the best approach, then your team will remain with the parties privy to the enforcement action. On the other hand, for strategies where you will use a combination of tools, such as compliance assistance followed by compliance monitoring, consider partnering with individuals or entities that have an established relationship with the target audience.

**4 Identify and commit resources.** The strategy team should identify resource needs and propose and confirm workforce deployment. The team leader will present these needs to final Agency decision-makers and share decisions that are made on resources to support strategy implementation with all team members. In addition to considering the information acquired at this point and any decisions on ways to implement the strategy, factor in the possibility that the strategic approach could change based on resource allocation and workforce deployment constraints. These limitations could be the ultimate decision on the makeup of your team.



*This diagram focuses on identifying roles and assigning responsibilities and highlights the other elements that are particularly important during the decision-making for this element.*

- 5** Work with the designated senior manager to **execute the partnership for team members from outside stakeholders**, either by a written instrument (e.g., Memorandum of Understanding, Interagency Agreement), if the partnership is long term or complex, or by oral agreement if the partner's role is short term or limited in scope.



## Challenges and Opportunities

The following case examples and suggestions provide insight into creating, executing and maintaining effective teams. They illustrate some of the processes used by EPA Regions and states to identify partners and gain their commitment during the pilot phase of testing the *Framework*. The pilot participants were asked to answer the following questions: (1) how did you address challenges in developing and implementing your strategic approach; and (2) with limited resources, how did you work with other organizations to reach the desired outcomes? Their responses and examples may help you gain insight and ideas on some of the issues associated with team building.

***Challenge:* How to work with partners where there are target audience complexities that need to be addressed to return to compliance**

### ***Opportunities***

An obstacle that may hinder working with small business owners is the resource commitment to train and return owners to compliance. This concern is heightened when the business owners' primary language is not English. To address a community-wide environmental issue, *EPA Region 3, the Maryland Department of the Environment, the Park Heights Community Group* and the *auto body shops* located in the residential neighborhood proved that working together would be beneficial for all involved. The federal and state regulators met with the community group and the auto body shop owners to evaluate the scope and causes of the issues, and to discuss the best approach to promote compliance. Through several meetings and site visits, trust grew, roles were defined and responsibilities were assigned. The community group members shared their knowledge of the shop owners; EPA led (with the participation by the state), inspections and assessed the owners' understanding of their obligations; the state reviewed the inspection reports, led the development of an auto body shop compliance manual and conducted training for the shop owners. By working together and working directly with the owners of the facilities, the federal and state regulators were able to develop assistance material to address a target audience where English is a second language. This three-year partnership resulted in improved compliance by owners, monitoring of the owners' compliance by the community group and the creation of an auto body shop owners' association to train new shop owners.



Each target audience has its own characteristics and complexities, but taking the time to meet with the audience, build the relationships and discuss options to improve compliance is a resource well invested. *EPA Region 3, the Maryland Department of the Environment, and Maryland School Administrators and Teachers* met to discuss the environmental issues placing their students at risk of accidental spills, hazardous waste mishandling and mold. While the federal and state regulators were working with the schools, they realized that there was limited knowledge of environmental requirements. During the next year all stakeholders participated in developing a program that would raise awareness and an understanding of the obligations to the environment and to schoolchildren. EPA took the role of conducting surveys to understand the schools' level of understanding and was also the lead on developing a compliance workbook. The state reviewed the workbook including state-specific obligations, and the Maryland School Board reviewed it to ensure that it was in a language understood by the education community. While the state took the lead on conducting the training across Maryland, the School Board took advantage of existing networks and associations to market the training and share the workbooks. As a result of partnering and defining the roles and assigning responsibilities, the training was transparent and well received.

### **Challenge: How to secure partners through trust in and ownership of the approach and outcome**

#### **Opportunities**

Building capacity across all stakeholders impacted by an environmental issue may appear to be a daunting and unattainable task. However, if there is a clear goal, transparent approach and reasonable timetable, then creating and defining a partnership to complete that task could be quite easy. *EPA Region 10, the Idaho and Alaska chapters of the Associated General Contractors (AGC), the Army Corps of Engineers, the Idaho and Alaska departments of transportation and local governments* all had a hand in meeting the common goal of protecting water quality and preparing the construction industry for increased inspections. To prepare the industry for understanding their federal/state/local requirements, EPA and AGC worked cooperatively to develop and deliver workshops for the sector on National Pollutant Discharge Elimination System (NPDES) erosion, sediment and pollution control. All levels of government were present at the training and during the inspections. Working in tandem the inspectors provided their expertise on the different regulations and educated each other as well as the target audience. Recognizing the collaboration across the various regulatory agencies, AGC took the lead on hosting the training sessions and emphasized the importance of working together to increase awareness of the stormwater requirements. In the end, the partnership built trust and increased capacity to continue training and developing additional assistance material to be distributed by all parties engaged in this partnership.



*EPA Region 10* also used its partnership approach under a completely new set of circumstances and environmental issues. EPA responded to compliance issues on the Yakama Reservation in Alaska with increased oversight of pesticides application and worker safety practices. EPA's efforts did not end there. By partnering with a local



pesticide inspector funded through a tribal agreement, the Region was able to receive credible and timely information to pursue enforcement actions within the reservation. Providing the resources to the local inspector through a clearly defined written agreement, EPA relied on the expertise of the inspector and used its efforts on enforcement. Partnering between federal and local governments to achieve a common goal of worker protection on tribal lands generated cases with multiple violations by both tribal and nontribal owners.

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# Element 5: Developing an Implementation Plan, Schedule and Milestones



## Objectives

- Introduce techniques associated with effective planning.
- Provide a step-by-step process to ensure successful planning and scheduling.
- Identify key challenges and opportunities in planning and scheduling that may arise during the development and implementation of a strategy.



## Purpose

The information on this element includes some common considerations associated with developing and implementing a work plan (plan and schedule). It also examines some common pitfalls associated with planning and scheduling and identifies ways to ensure successful implementation. This element supports Element 6 of both the *Framework* and the *Template*, both titled “Schedule.” The goal of this element is to provide an overview of how to effectively plan, monitor and oversee a strategy.



## Approach

The Team Leaders must commit to establishing and maintaining a work plan.

One of the most effective ways to establish a work plan is for the team to “brainstorm” about the primary activities associated with each element of the strategy and the appropriate milestones for completing these activities. This will ensure the work plan is based on the team’s knowledge of the problem and that the full range of solutions are identified. During the brainstorming, activities should be grouped together so they either build on each other or are related in some way. Team Leaders should make final

### Key Concepts

**Plan:** A “detailed scheme, program, or method worked out beforehand for the accomplishment of an object.” The goal of planning is to ensure the development and implementation of a well-thought out strategic approach.

**Schedule:** The “production plan allocating work and specifying deadlines,” which includes identifying roles and responsibilities. The schedule’s goal is to ensure process transparency, facilitate oversight and communication with key stakeholders, and provide opportunities to reassess and realign the plan.

### Key Considerations

- **Ownership/Engagement:** The team leaders must assume overall responsibility for the work plan and monitoring progress. Team members must be given ownership of specific tasks in the work plan. If only the managers or a few of the staff follow up on the work plan, many of the activities and the associated milestones will not be completed.
- **Updating of the Work Plan:** Keep the work plan current because dates and tasks often evolve over time.
- **Format:** Use a format (e.g., Microsoft Excel) for the plan and schedule that is optimal for the team and the managers.
- **Outside Forces:** There will always be obstacles to implementation that are outside your control. Just expect them and work around them.

decisions about the work plan and assign specific team members responsibility for tracking tasks.

Throughout the implementation of the strategy, Team Leaders should check in with the team member responsible for each task and make decisions on whether adjustments to specific activities or milestones are appropriate.



## Step-by-Step Process for Developing an Implementation Plan, Schedule and Milestones

Provided here are suggestions and examples of the type of information to consider in planning for this element. See the sample work plan at the end of this chapter.

**1 Brainstorm the work plan.** The team should discuss the entire range of potential primary activities to be implemented in the strategy. It is recommended that at least one face-to-face brainstorming session take place.

**2 Develop the work plan.** The work plan is a functional calendar that contains the primary elements and activities of the strategy. The work plan should be prospective, be built around specific calendar dates, and include each program activity and associated measure. At a minimum, the work plan should contain the following:

- Each program activity and associated deadline(s). Include a team leader and team member point of contact for each program activity.
- Each program measure and its associated method for tracking progress. Include a management and staff point of contact for each measure.
- New or existing mechanisms to track and measure results.
- The date and time for each activity and/or meeting.
- Dates to consider revising program activities, deadlines and measures.
- Baseline information. The work plan should include the baseline data used to establish the strategy's activities and measures. Inclusion of baseline data is important to track performance according to the existing measures.
- A formal evaluation phase so that team leaders and their managers can determine whether activities are being completed in a timely manner and, if not, why. The evaluation phase is essential to determine whether and when mid-course adjustments are required.



*This diagram focuses on developing a workplan for the strategy and highlights in gray the other elements that are particularly important during the decision-making process for this element.*

Including the following components will increase the work plan's functionality and value:

- Information on relevant internal and external stakeholder meetings (e.g., of OECA's Planning Council, states, tribes, the regulated community, nongovernmental organizations, including environmental justice communities).
- Anticipated timeframes for internal budget requests.
- Anticipated funding opportunities and associated deadlines for external grants and cooperative agreements.
- Anticipated congressional or Office of Management and Budget hearings or requests.

**3 Team leaders assign activity and progress coordinators.** For each strategy, the team leaders should oversee each activity and assign a team member to “manage” each activity on a day-to-day (or regular) basis. See the chart on page 5 of this chapter for an example of how to create a Strategy work plan and monitoring progress.

Together, the team leader and team member with oversight responsibility can.

- Focus additional attention in a particular area and develop (or apply existing expertise).
- Draft and maintain documents within their area of responsibility, including a record of all final decisions.
- Track and report on issues within their area of responsibility, including designing necessary adjustments or other outstanding issues.
- Scheduling meetings.

**4 Ensure team participation.** Team leaders should ask team members for a minimum level of commitment (e.g., average of X hours a week on the strategic approach or engagement in, or responsibility for, a certain number of projects each year). The commitment of hours would depend on the quantity of work to be done and the number of team members who are available.

**5 Review the activity milestones.** Be pragmatic about the work plan's timetable. There are many issues outside your influence that affect the ability to accomplish activities and meet milestones. Revisit your milestones on a quarterly basis and update them as necessary and appropriate.

**6 Maintain regular communication and manage strategy documents.** The following are appropriate for each strategic approach:

- Establish regular conference calls. The frequency will depend on the issues to be discussed.
- Make the work plan and all final documents available through a shared network directory. This will enable managers and staff to revise existing documents.

Element 5: Developing an Implementation Plan, Schedule and Milestones

NATIONAL PERFORMANCE BASED STRATEGY - COMMUNICATION AND COORDINATION PLAN															
FY 2005 WORKPLAN		CHAMPION: Sally Douglas	HQ LEAD STAFF: David Painter					REGIONAL LEAD STAFF: Lori Thomas							
LEAD	CURRENT STATUS	TACTICAL STEPS	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	COMMENTS
David	Ongoing	Internal: conference calls every other week	⚙		⚙		⚙		⚙		⚙		⚙		Starting convene meetings as needed
Team Leaders		Internal: share Strategy with EPA regions. Internal use only	▶	▶											Team Managers
Team	Ongoing	Internal: get at least 2 more EPA regions to engage/participate	▶	▶	▶										Specifically - Regions 5, 6 and 7. (both engaged and on the team)
Team Managers		Internal: brief senior managers		⚙				⚙					⚙		Meeting scheduled for Nov 15; quarterly or semi-annually during the fiscal year.
Smith		Internal: identify and select EPA advisory board		⚙											What topics and who is the lead? [Ask for clarification]
Team Leads		Internal: scope & prepare for senior managers meeting: What outcome are we looking for? How can we get buy-in?	▶	▶	▶				▶	▶	▶				By December, 2004.
Team Leads		Senior managers to meet with key internal & external partners		⚙		-									
		Stakeholders: identify key external stakeholders			⚙	⚙		⚙		⚙		⚙	⚙		
Bobby Brown	Ongoing	Stakeholders: Establish regular communication with key groups	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	
Carol Reese	Ongoing	Stakeholders: Work with Department of Education on schools emphasis area		▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	
Smith		Press: draft & update communication material to share with stakeholders				⚙				⚙			⚙		Jasper to begin working on a brochure
Sally		Press: plan two events for FY 2005 -- D.C. and California		▶	▶	▶			▶	▶	▶				May 5, 2005
Team Leads		Press: Event on mid year & end of year successes						⚙						⚙	
Clayton		Public meetings: Kansas (11/05); New York (1/06), Denver (3/06), D.C. 9/06)		⚙		⚙			⚙					⚙	Identify 6/06 meeting
Sally		Internet Portal: get senior management support & B check-in		⚙											Sally will discuss event with senior managers
Jim Smith		Portal: What \$ do we have? How do we get more?			⚙				⚙					⚙	Can this wait until Dec or should we be thinking about how best to allocate these funds sooner?
Smith & Hubert	Completed	Portal: focus groups with key internal & external stakeholders	⚙			⚙				⚙					10/04/2004 Discussion of available resources
Smith		Internet Portal - beta tests						▶	▶	▶	▶	▶			Mary to send via email & demonstrate
Smith		Portal: go live with press event												⚙	Hold in Silicon Valley?

# Element 6: Designating Resources/ Workforce Deployment



## Objectives

- Discuss how to assess what resources you need to plan, execute and measure the strategy.
- Provide a step-by-step process for identifying and leveraging available resources.
- Identify challenges and opportunities in committing and effectively deploying available resources.



## Purpose

The information provided on this element highlights considerations in securing the appropriate mix of resources necessary to implement the strategic approach. This element supports Element 5, “Resources,” of the *Framework* and Element 5, “Workforce Deployment Strategy,” of the *Template*.

The goal is to ensure that the necessary resources are in place to operate an effective team that has the requisite skills, knowledge and experience to carry out its responsibilities. This element provides a broad overview of the types of resources that you may need to carry out the strategy. It also provides case examples to illustrate creative leveraging of resources, which are always at a premium. Using this element in combination with Element 4, Establishing Roles and Assigning Responsibilities, you should be able to effectively implement the strategy.



## Approach

Identifying, leveraging and managing needed resources within and outside your organization is critical to ensuring that you can complete all the activities identified in your strategy to achieve your goal. The following are examples of the types of resources that you may need to utilize implementing the strategy:

- **Funding Vehicles:** Contracts, grants, interagency agreements, cooperative agreements.
- **Human Capital Team:** Internal and external partners that you select based on their skills, knowledge and experience.
- **Professional Services:** Agency contractors that are not team members but are providing certain types of services for the approach (e.g., laboratory services).

## Key Concepts

**Resources:** The money and time dedicated to implementing the strategic approach, including management and staff time, professional services, equipment and supplies, travel or training.

**Funding Vehicles:** Any agency-approved agreement to commit resources.

**Human Capital:** People with the skills, knowledge and experience needed to most effectively implement the strategy.

- **Supplies:** Items needed to implement the strategy (e.g., vehicles, sampling equipment, computers, office supplies).
- **Travel:** Travel required for team members and contractors to conduct and implement certain elements of the strategy (e.g., inspections, investigations, site visits, workshops, meetings).
- **Training:** Appropriate training for team members to help them understand the environmental issues (e.g., statute- or regulation-specific issues) and implement activities (e.g., safety training for inspections and hazardous materials), and for regulated entities as part of compliance assistance.

To make planning for resources committed by others seem less daunting, be realistic about the type and amount of resources needed. Factor in unanticipated changes and prepare for contingencies. Moreover, work with your team to develop creative approaches for the unforeseen issues and for resource constraints. To ensure efficient use of limited resources, take the time to assess the capacity of potential partners to contribute to the team and actually deliver on their commitment. Competing priorities and projects may hinder partners' ability to implement elements in a timely way; creative management and leveraging of resources across partners or even with others in your organization may be necessary.

The following are some considerations in planning for resource management.

### Key Considerations

Based on lessons learned from the pilot projects and other experience in developing and implementing strategic approaches, we provide the following considerations for designating resources and deploying your workforce:

- The resource demands of the strategic approach will compete with other priorities and projects; you will need to assess available resources and clearly define and prioritize needs.
- Invest in training as needed for team members and other appropriate staff before implementing the strategy.
- When creating internal and external partnerships, work with the assigned senior manager to ensure that the partners have a clear and common understanding of the type of resources and timing of their use, as well as roles and responsibilities in implementing the strategy.

### Considerations in Planning for Resources

#### Developing Your Team

- Assess in-house expertise available to implement each tool selected for the strategy.
- Identify and seek commitment from partners with the experience and capacity to implement the compliance assurance tools selected and measure success.
- Cross-train team members and other relevant staff who will support the strategy.
- Encourage team members to balance their time to work on other projects and to notify the team lead of time limitations.
- Set a schedule and adhere to it so that team members are available to implement tools at critical times.



## Considerations in Planning for Resources

- Designating Your Resources
- Coordinate work with other projects dealing with related areas or issues.
  - Identify and secure appropriate grants for states and other grant recipients.
  - Secure contract funds for specific needs of the team such as gathering data, defining the baseline or developing materials.
  - Prepare to make adjustments when capacity or funding is not available at critical points in the strategy.
  - Anticipate future resource needs for continuing or maintaining the strategy.



## Step-by-Step Process for Managing and Leveraging Resources

Identifying resources and securing commitments is essential to the success of your strategy. The availability of resources can influence decisions about which tool or tools will be used to address the environmental problem. Provided here are suggestions and examples on the type of information to consider and the other elements in the strategy that should be considered in the decision-making process.

**1 Develop a complete list of resources and expertise necessary to implement the activities of the strategy** requiring such funds and/or expertise. In many cases these activities include collecting information to fully understand the scope of the environmental problem and address the target audience; analyzing data to determine the success of the strategy and measure its accomplishments; implementing any or all of the compliance assurance tools selected to address the problem; and training personnel in any of the previously mentioned activities.

**2 Match available internal resources to your needs.** Search both within your own office and across other offices within your organization to identify experts in the fields that you need (e.g., media-specific experts to help you and your team understand the appropriate regulatory requirements, inspectors to conduct inspections or investigations for baselining, compliance evaluations, and onsite visits). Also identify resources to be leveraged (e.g., existing grants or contracts that meet your scope of work and are not at capacity, other projects underway where activities can be coordinated such as tagging onto scheduled inspections or trainings).



*This diagram focuses on designating resources/workforce deployment and highlights the other elements that are particularly important during the decision making process for resource designation.*

**3 Identify resource gaps where external partners will be needed.** Some instances where gaps occur that could be fulfilled by external partners are: understanding the full scope of the environmental problem and the impacted audience; identifying existing compliance assistance material that can be modified for the strategy; securing venues to conduct training for the targeted audience.

**4 Develop a list of potential external partners and their capacities.** Potential partners can range from other federal, state or local agencies that also regulate the target audience, to trade associations able to provide additional information about the target audience.

**5** If you cannot retain all needed resources and experts or if you foresee commitments that will be needed down the road to complete the strategy, **identify the gaps and future opportunities for leveraging resources.** For ease of implementation and to refresh your memory as you continue the strategy align these resource needs with the implementation schedule and milestones.

## Challenges and Opportunities

The following case examples and suggestions illustrate some Regions' and states' experiences in identifying needed resources and the factors they considered in assembling the resources. It also looks at how they balanced existing resources for ongoing projects with the additional resources needed for the work by answering the questions: (1) What resources and deployment of resources were used to develop and implement the strategy; and (2) Was there an impact of deploying resources on this priority with regard to other priorities or projects?

### **Challenge: Identifying efficiencies to reduce personnel burdens**

#### **Opportunities and Suggestions**

The workforce is the most precious commodity we have to ensure that the environment is protected. However, there are not enough staff and not enough time for staff to carry out all the activities necessary to meet all needs. There are, however, creative solutions to build capacity. **EPA Region 2** planned for the possibility that up to 480 healthcare facilities would self-disclose under EPA's Audit Policy after the Region provided an incentive for facilities to report violations to the agency. To maximize limited resources, the Region developed a model agreement for healthcare facilities disclosing under the initiative. The Region also created a small, ad hoc team of multimedia experts to review all the disclosures. By streamlining the negotiation process and the management of audit disclosures through the use of the model agreement, the Region had a viable and efficient tool to address an entire sector without unduly impacting the inspection and enforcement presence. The results of the process yielded 143 disclosures covering 540 facilities with 40 audit agreements, and 2,173 violations corrected.



Another creative approach was demonstrated during the **EPA Region 3 Schools Initiative**. The region was aware that schools in Maryland and the District of Columbia had multimedia compliance issues and that these schools had limited understanding of regulations and limited resources to return to compliance. The Region, however, was not in a position to have full-time EPA employees focus the time required to identify the schools' assistance needs. To continue with this effort, the Region hired a student intern to evaluate the schools' compliance assistance needs. This cost-efficient approach allowed an intern to gain job experience while satisfying EPA's resource need. In turn EPA reserved its extramural funds to develop the schools' laboratory practices training, which was requested by the schools.



### **Challenge: How to leverage committed resources to accomplish multiple objectives**

#### **Opportunities and Suggestions**

Addressing new environmental issues does not always require commitment of additional resources. Be aware of work underway in your Region and state and take advantage of existing commitments to satisfy multiple objectives from a single task. The **Oklahoma Department of Agriculture** did just that when the state was trying to develop an inventory of large Concentrated Animal Feeding Operations (CAFOs) that may need to apply for National Pollution Discharge Elimination System (NPDES) permits under a soon-to-be released rule. Traveling across Oklahoma to inventory all the facilities was expensive. Since the state had partial delegated authority for NPDES, EPA Region 6 and the state worked together and expanded the schedule of inspections to gather additional NPDES data while providing assistance on the new CAFO rule. Two hundred sixty facilities were inspected and added to the NPDES inventory with minimal additional resource expenditure.



A similar approach was used by the **New Mexico Environmental Department**. The state developed compliance assistance material informing 150 CAFO facilities how to comply with the new NPDES general permits. In this case, the state took advantage of scheduled inspections of its inventory of facilities to optimize time and travel resources by providing compliance assistance information during the inspections.

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# Element 7: Communicating the Strategy



## Objectives

- Discuss how to communicate the strategy throughout its planning and implementation.
- Provide a process for selecting the communication vehicles that will most effectively convey information to various stakeholders.
- Identify challenges and opportunities in planning and executing communication options.

### Key Concepts

**Communication Vehicle:** Any form of media that will convey a message to the audience.

**Networks:** Existing organizational groups that will assist in conveying the message.



## Purpose

The information for this element will provide ideas on what type, in what form and when to convey messages about the strategy. Informing interested stakeholders throughout the planning and implementation process is important for transparency of the strategic approach. This section supports Element 8 of the *Framework*, “Communication,” and Element 5 of the *Template*, “Communication.”

The goal for this element is to identify all the potential stakeholders, the type of information that will be of interest to them and the best vehicle to communicate that message. The information provided is intended to illustrate options and suggestions for effective communication on the strategy. The type of stakeholders, the role of the partners, the type of tools selected and your organization’s communication policies and procedures will factor into your decision on how to communicate the strategy.



## Approach

Stakeholders within and outside of your organization will have varying levels of interest in the progress of the strategy. Depending on the type and scope of the environmental issue and the affected audience, the communication approach could be straightforward with clearly identified stakeholders and communication vehicles, or complex with a web of networks and organizations (see diagram). Work with the stakeholders to determine their particular interests. There are three levels of stakeholders involved in any strategy:

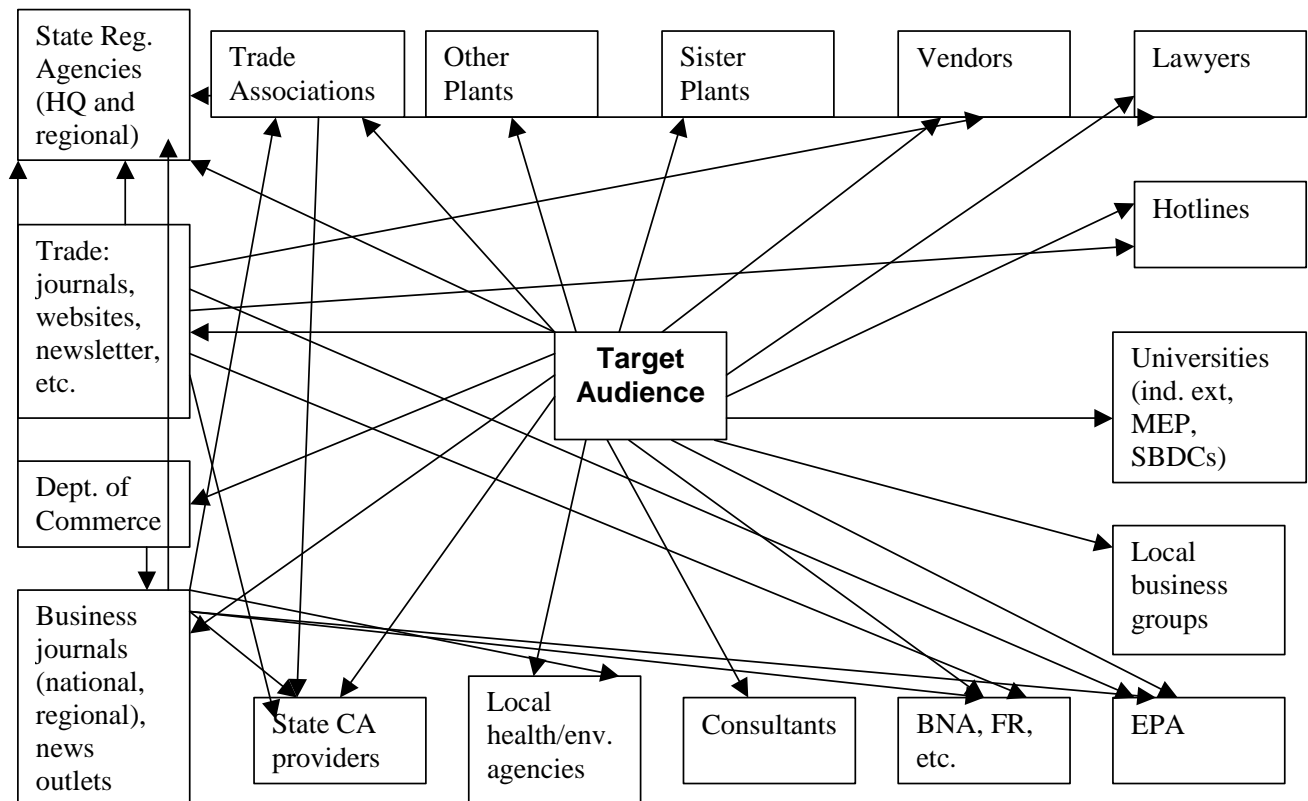
### Key Considerations

Based on lessons learned from the pilot projects and other experience in developing and implementing strategies, we provide the following considerations for deciding how, in what form and when to communicate the strategy:

- Identify all potential stakeholders, the information of interest to them, and the communication vehicle for conveying the message.
- Align the communication messages with milestones and other critical points during the strategy so as to promptly inform the appropriate stakeholders.
- Work with the public affairs, press offices and Web-based coordinators so that you understand the press and publication parameters.

- **Internal Partners:** Managers and staff within your office and organizations who need to be either engaged in the process or kept informed of progress.
- **External Partners:** Individuals or organizations that have committed to participating in the planning and/or implementation of the strategy (e.g., other regulatory agencies, trade associations or universities).
- **Public:** Individuals or organizations that have an interest in the outcome of the strategy or have an interest in assisting (e.g., the public at large, community groups or neighbors).

**Communication Partners for Targeted Audience**



These two stakeholder groups are differentiated by the involvement and role of the participants. External partners play an active role and contribute to the success of the strategy. The public does not generally play an active role in the planning and implementation, but should be kept informed of its progress and results.

In addition, the type of communication vehicle used is just as important as the audience you address. Not all stakeholders receive their information using the same technology, and you may need to convey your message through more than one vehicle. Just as you created a team with various areas of expertise, identify communication vehicles that will best address your audience.

Communication vehicles to consider include the following:

- **Mass media:** Broadcast messages (e.g., *Federal Register* notices, advertisements/press releases, newsletters, agency/organizational/topical Web sites)
- **Targeted media:** Messages focused on specific audience or segments of an audience (e.g., emails, educational brochures, listservs, newsletters, trade shows, conferences)
- **Targeted interactive:** Messages focused on structured feedback from audience to presenter (e.g., Web-based tools, focus groups, face-to-face meetings, workshops)
- **Exclusive interactive:** Messages focused on one target audience member at a time and may include exchange of confidential information (e.g., mentoring, partner meetings, facility visits, audits, hotlines, word of mouth)

The following table illustrates some of the considerations in communicating your message and in deciding with whom and with what vehicle you would communicate.

Communication Objective	Audience for Message	Vehicle to Communicate Message
Notify the target audience of a new rule and/or compliance assistance tools	Target audience	<i>Federal Register</i> to put the target audience on notice, workshops to understand how to comply
Promote participation in an incentive program	Target audience	Targeted mailing to those who can participate in the incentive
Encourage attendance at compliance assistance training or workshops	Target audience	Listservs, trade media, emails notifying of the training, enforcement press release of similarly situated facilitates encouraging reluctant facilities
Notify the public of significant enforcement actions	Target audience/Public	Press release to deter similarly situated facilities from noncompliant behavior
Gain access to the target audience/business community and verify baseline information	Target audience/Partners	Face-to-face meetings, facility visits for interactive discussion on the target audience's compliance issues
Update partners on the strategy's progress and resource allocations	Partners	Periodic meetings, conference calls, emails for a focused and goal-oriented conversation
Build trust with new or potential partners	Partners	Focus groups, meetings, workshops to demonstrate your interest in working with partners



## Step-by-Step Process for Communicating the Strategy

Upfront planning will advance your strategic goals by evaluating the most appropriate times to engage stakeholders in the strategy.

Provided here are suggestions and examples of the type of information needed for effective communication on the strategy.

**1 Identify all the potential stakeholders.** You will identify potential stakeholders throughout the process of developing and implementing the strategy. Keep updating your list of stakeholders and their contact information as you go along.

**2 Identify vehicles and messages for conveying information.** Tailor the main points for the specific audience and frame them to have the desired impact (i.e., do not assume that you can always use the same message or terms for different audiences). Tailor your communication approach for your stakeholders by considering the following:

- Understand your stakeholders and their culture.
- Note communication issues or barriers for each stakeholder group (e.g., your public audience's primary language, access to different types of media).
- Work with stakeholder groups to address the communication issues.
- Determine who on the team will be responsible for delivering the message. The audience may respond to the same message differently depending on who is the messenger.

**3 Align your messages with the milestones and critical points of the strategy** so stakeholders can be engaged in or notified of the strategy's progress in a timely manner.

**4 Identify any resources to develop and deliver the message.** Where multiple communication vehicles are available and used by the audience, assess the relative cost effectiveness and timeliness of implementation.

**5 Develop the message and seek team, managerial and organizational approval (if needed).** Each organization has its own policies and procedures for external communications. Become familiar with them.

**6 Once conveyed, monitor and evaluate the messages and methods of delivery.** An idea developed during the planning phase may not be successful when you



*This diagram focuses on communicating the strategy and highlights the other elements that are particularly important during the decision*

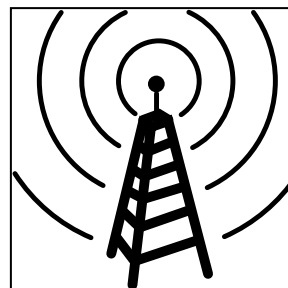


implement it. You may need to consider revising the communication vehicle and/or message.



## Challenges and Opportunities

The following suggestions provide insight into communication planning. They illustrate the Regions' and states' use of messages and mechanisms to communicate the strategy. The scope of the audience, the type of information to convey and the method of conveying information varies for each strategy. We hope that these suggestions will give you insight and ideas on some common issues associated with communicating the strategy.



### **Challenge: How to efficiently and effectively target the message**

#### *Opportunities and Suggestions*

Every communication option has strengths and weaknesses. Given limited resources, first consider existing agency communication vehicles and their availability for communicating the strategy. While press releases may appear to be high profile, in many cases their actual use by the agency may be limited (e.g., significant enforcement actions). EPA frequently uses the Web to post periodic updates on the implementation of its strategies and initiatives but for more time-critical or sensitive information, it may not be timely or appropriate. Sometimes the methods that require the least time and are most readily available to your team may be the best options. For example, develop and maintain an email group of all partners and another for interested stakeholders. With those groups in place, create periodic updates on the progress on, milestones of and modifications to the strategy. Moreover, inventory existing communication vehicles (newsletter, brochures) in your agency and the timing of their release so you can include your strategy's information (e.g., updates, articles, contact information, URLs) in them. An example of this is the March 2003 edition of the *Enforcement Alert* newsletter (Attachment E). This newsletter provided a mechanism to highlight the environmental problems posed by sanitary sewer overflows, and to highlight the strategic use of EPA's enforcement and compliance assistance tools being implemented during that time frame to address the problem.

### **Challenge: How to identify the message and vehicle for the target audience**

#### *Opportunities and Suggestions*

Develop a communication approach that can be used when and where the target audience will have heightened interest in the strategy and be able to act upon the information conveyed. This means studying the recipients of the message to determine their education and behavior status, and identifying what points in the strategy are most

effective for conveyance. Because individuals who will react to messages and take steps to address the message are located throughout an organization, you should identify existing communication networks within the organization to have the broadest impact.

# Element 8: Monitoring and Evaluating the Strategy



## Objectives

- Define evaluation and its relationship to measurement
- Describe major steps in conducting an evaluation
- Identify key challenges and opportunities in evaluating the effectiveness of the strategic approach in addressing the environmental problem(s).



## Purpose

The goal of this element is to:

- Assess whether progress has been made throughout the interim stages of the strategy and if so, why.
- Identify whether some elements or aspects of the strategic approach are working but not others, and if so, why.
- Determine the overall effectiveness of the strategic approach.

This element supports Element 8 of the *Framework*, “Monitoring & Evaluation Processes,” and Element 3 of the *Template*, “Priority Strategy.” This element differs from Element 3 in that you are not evaluating progress towards the strategies goals but rather the overall strategic approach itself.

Broadly defined, evaluation and measurement are a systematic way to learn from past experiences. The terms “evaluation” and “measurement” are not synonymous but are closely related. Measurement is the ongoing monitoring and reporting of accomplishments, particularly progress toward established goals. Measurement provides a picture of “what is” but not “why it has occurred.” Measurement data provide information needed to conduct an evaluation and assess the overall effectiveness of the approach, program or project being evaluated. In this Guide we will focus on EPA’s strategic approach as the object of evaluation. The following table further illustrates the relationship and some of the differences between measurement and evaluation:

### Key Concepts

**Evaluation:** A systematic study that uses objective measurement and analysis of answers to specific questions that explain how well a program, strategy or approach is working to achieve its outcomes and why.

**Formative Evaluations** are intended to inform and improve the approach while it is still being designed or during implementation.

**Summative Evaluations** are intended to make judgments about the approach after it has been established for some time or has ended.

Measurement	Evaluation
Ongoing monitoring and reporting of accomplishments.	In-depth, systematic study that is conducted periodically or on an ad hoc basis.
Examines achievement of the strategic approach's goals.	Examines a broader range of information on performance than is feasible to monitor on an ongoing basis.
Describes achievements in terms of outputs and outcomes in a given time against a pre-established goal.	Explains <i>why</i> the results occurred.
Presents a picture of what is happening at various points in time. This picture can give management an early warning about potential problems.	Longer-term review of effectiveness.

## Approach

There are different types of evaluation that EPA or state agencies could apply to the design, development and implementation of the strategic approach to address environmental problems. Evaluations are generally categorized as either formative or summative. These categories typically describe how the evaluation results will be used. **Formative** evaluations inform and improve the strategy or strategic approach while it is still being designed or during implementation. **Summative** evaluations make judgments about the approach after it has been established for some time or has ended. Additionally, an evaluation can focus on one or more aspects of the strategic approach. An evaluation can be one or a combination of these types. Following are descriptions of these types:

### Formative Evaluations

- **Design evaluation** focuses on the theory behind the integrated approach—given the context, is it reasonable to expect that the proposed activities will yield needed changes? Is the approach conceptually sound?
- **Process evaluation** answers questions about how the strategic approach operates and documents the procedures and activities undertaken.

### Summative Evaluations

- **Outcome evaluation** answers questions about whether the approach has achieved its expected goals and results.
- **Impact evaluation** focuses on questions of causality. It attempts to establish cause and effect by linking observed outcomes, changes or improvements in the condition of the environment to the specific actions of the approach. An example of this would be to evaluate the individual contributions of each compliance assurance tool identified in the strategy toward achieving the goals. (Not sure if these is really a good example of impact.)
- **Cost evaluation** addresses how much the approach or its components cost, preferably in relation to alternative uses of the same resources and to the benefits that the approach is producing.

In planning an evaluation, you must determine whether the evaluation will have a broad or narrow scope. For instance, a summative evaluation can be designed to include outcomes, impact and costs or focus on only one of these aspects.

Remember, a good evaluation can:

- Ensure that you are meeting the goals of your approach.
- Determine whether allocated resources are yielding the greatest environmental benefit.
- Identify what works well, what does not and why; and answer questions such as:
  - What internal and external factors influenced performance? (Retrospective)
  - What effect will this level of performance have on future performance if the approach or activity is not modified? (Prospective)



## Step-by-Step Process for Evaluating the Effectiveness of the Strategic Approach

Whatever type of evaluation you plan, the basic steps remain the same:

Step 1: Develop an Evaluation Plan

Step 2: Describe What Is Being Evaluated

Step 3: Develop Evaluation Questions and the Evaluation Design

Step 4: Collect Data

Step 5: Analyze the Data

Step 6: Present the Evaluation Results

**1** **Develop an evaluation plan.** The evaluation plan serves as the “roadmap” for conducting the evaluation. To develop the plan, you will need to concurrently identify the key stakeholders involved in the evaluation. These include individuals responsible for designing and conducting the evaluation and reporting the results; people who have an intimate knowledge of the approach being evaluated; and other individuals who have a vested interest in the conduct or impact of the strategy. The evaluation plan should include the following components:

- Purpose of the evaluation
- Primary audience
- Design of the evaluation

- Evaluation questions
- Roles and expectations for evaluators, staff, participants and key stakeholders
- Data collection/analysis process and protocols
- Reporting
- Resources (staff and budget)
- Timeline
- Communications

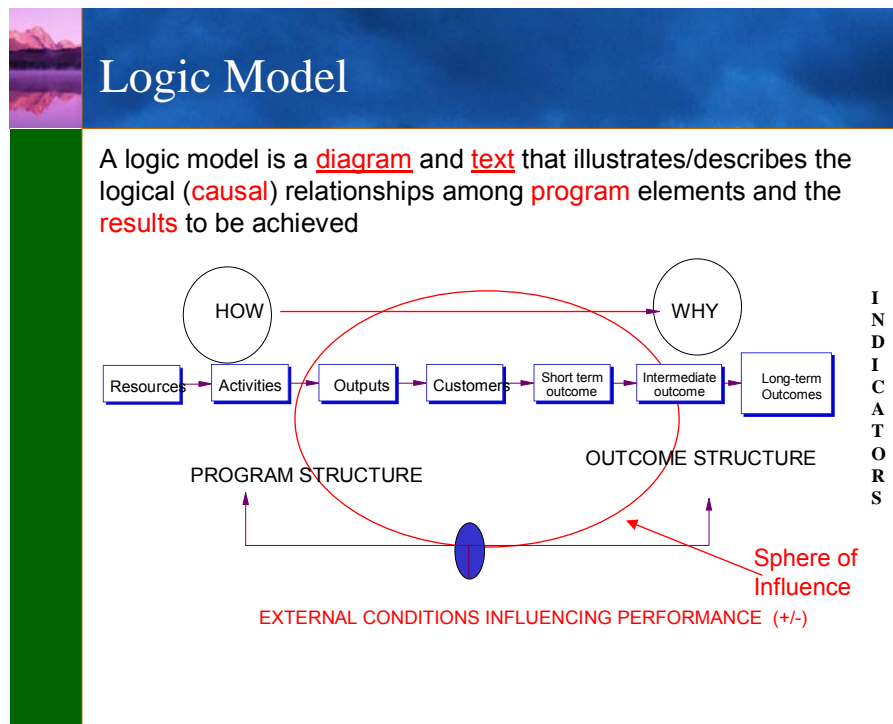


*This diagram focuses on monitoring and evaluating the strategy and highlights in gray the other elements that are particularly important in evaluation.*

**2 Describe the strategic approach.** It is often very difficult to evaluate a program, project or approach that you don't understand. Having a clear picture and understanding of how a program is designed to operate is an essential step of conducting an evaluation. The description of the subject of the evaluation can take many forms but should, at a minimum, identify what it consists of, how it is implemented and who the target audience or customers are, and should include a description of key activities and expected outcomes. One approach that EPA has used to graphically illustrate the subject of the evaluation is the **logic model**.<sup>1</sup> While there are many ways to implement this step, we will use the logic model as an illustrative example. The logic model illustrates the logical and causal relationships among elements of the approach and the problem to solve, thus defining measures of success. It synthesizes the key activities intended to achieve the goals of the approach into a picture linking inputs to activities and to expected outputs and outcomes.

**3 Develop evaluation questions and the evaluation design.**

**Evaluation questions** are the broad questions the evaluation is designed to answer. They should reflect the general objectives of the evaluation and should address what is important for your audience to know about the strategic approach. Determine what your stakeholders need to



<sup>1</sup>Adapted from "Introduction to Program Evaluation" training course material developed by EPA's National Center for Environmental Innovation, September 2005.

know, and for what purpose and in what format they need the evaluation information. Also decide on the scope of the evaluation—is it formative or summative (i.e., does it address design, process, outcomes, impact or cost)?

In identifying the evaluation questions, remember to:

- Review the goals of the strategic approach and the evaluation.
- Generate a potential list of questions.
- For each question, ask, “Why is the question important? How will the information be used, and by whom?”
- Identify the standard or baseline that you will use to assess the information.
- Assess feasibility of the question in terms of data collection, analysis and reporting.
- Select the final list of questions.
- Consult management and stakeholders.
- Revisit your questions periodically and continue to consult management.

The following table provides sample evaluation questions to ask when designing the evaluation:

**Sample Evaluation Questions<sup>2</sup>**

Approach Elements	Resources/ Inputs (We use these)	Activities/ Outputs (to do these things)	Target Audience (for these people)	Short-term Outcome	Intermediate Outcome	Long-term Outcome
<b>Evaluation Questions</b>	<ul style="list-style-type: none"> <li>▪ Do we have enough?</li> <li>▪ Are they the right ones?</li> <li>▪ What level is needed?</li> <li>▪ Is there consistency?</li> <li>▪ Why or why not?</li> </ul>	<ul style="list-style-type: none"> <li>▪ Are we doing things the way we say we should?</li> <li>▪ Are we producing results at the level anticipated?</li> <li>▪ Are we producing results according to anticipated quality indicators?</li> <li>▪ Why or why not?</li> </ul>	<ul style="list-style-type: none"> <li>▪ Are we reaching our target audience?</li> <li>▪ Are we reaching the anticipated number?</li> <li>▪ Are they satisfied?</li> <li>▪ Why or why not?</li> </ul>	<ul style="list-style-type: none"> <li>▪ Did the target audience’s understanding, knowledge, skills or attitude change?</li> <li>▪ What evidence do we have that the approach caused the desired changes?</li> </ul>	<ul style="list-style-type: none"> <li>▪ Is our audience using the information, knowledge, skills and/or attitude change as expected?</li> <li>▪ With what results?</li> <li>▪ Is the audience changing behaviors/ practices in the expected direction/ level?</li> <li>▪ If so, what did we do in relation to the changes?</li> </ul>	<ul style="list-style-type: none"> <li>▪ What changes in condition (environment) have occurred?</li> <li>▪ Why?</li> </ul>

<sup>2</sup>Adapted from “Introduction to Program Evaluation” training course material developed by EPA’s National Center for Environmental Innovation, September 2005.

Approach Elements	Resources/ Inputs (We use these)	Activities/ Outputs (to do these things)	Target Audience (for these people)	Short-term Outcome	Intermediate Outcome	Long-term Outcome
External Conditions	What factors might influence the success of the strategy?					

Remember that questions that attempt to establish a direct cause/effect link between the strategic approach and observed outcomes pose the greatest challenge and require a well thought out evaluation design.

**Evaluation design** refers to the plan or protocol you will use to ensure that the evaluation’s results are reliable and valid. The goal of evaluation design is to rule out other possible explanations in order to state (with a high level of confidence) that your strategic approach caused the observed impact. There are a number of evaluation designs, including experimental with control groups, non-experimental and case study designs. Select the design that will provide the appropriate level of reliability and validity you need to support your evaluation results and any claims you want to make about your approach. Evaluation design is important because it helps strengthen the credibility of the evaluation, provide confidence in the results of the evaluation and respond to challenges that critics might have about the validity of the evaluation results.

In selecting an evaluation design, consider the internal and external validity of the design. **Internal validity** asks, how sure are you that the action you undertook made the difference in this specific experimental instance? **External validity** asks, how sure are you that you can generalize these findings to other populations, settings and treatment variables? In general, the more you control the internal validity (controlling external influences to be sure that the action is indeed what “causes” the “effect”), the less you are able to control for external validity.<sup>3</sup>

**4 Collect data.** Data collection usually involves collecting both qualitative and quantitative data. Qualitative data are subjective and can come from observations, interviews, and descriptions of actions or processes. Quantitative data are numerical and can be collected from tests, reports, surveys and existing databases.

Methods used to collect data include questionnaires, surveys, checklists, interviews, document review, direct observation, focus groups and case studies. If you use methods such as questionnaires or focus groups, data collection includes writing and carefully crafting questions to administer to your test group. Ideally, you should pretest your data collection instrument to be sure it is clear and provides unambiguous responses wherever possible.

**5 Analyze the data.** To make the raw data meaningful, you must analyze them. Data analysis is a complex but important task that involves comparison and scrutiny of the data to enhance interpretability. Perform analysis throughout the life cycle of your strategy, not just at the end. You will need as much time for analysis as you took to collect

**Tips on Data Collection**

- Use both qualitative and quantitative data.
- Gather data from multiple sources.
- Use one data collection process to meet the needs of multiple evaluation questions if possible.
- Weigh the costs and challenges against the benefits of the data collection methods.

<sup>3</sup>Adapted from Campbell and Stanley, *Experimental and Quasi-Experimental Designs for Research*. Rand McNally, 1966.



the data. Following are a few basic guidelines for analyzing evaluation data.<sup>4</sup>

- **Review for consistency and accuracy:** Perform additional checks to ensure the accuracy and consistency of the data, and eliminate incorrect or insufficient data. A simple scan of data will usually reveal extreme data points or values that are inaccurate.
- **Use all relevant data:** In most evaluations, the person conducting the evaluation desires positive results, which may provide a built-in bias. It may be tempting to eliminate data that do not support the desired outcome. For a valid analysis, use all relevant data. If not, explain why they were deleted.
- **Treat individual data confidentially:** Frequently, data collected will be the result of individual performances. In analyzing and interpreting the data and reporting results, maintain the confidentiality of the individuals.
- **Use the simplest statistics possible:** You can use a variety of statistical manipulators to compare changes in performance. Keep the analysis as simple as possible and confine it to what is necessary to draw the proper conclusions from the data.

The use of statistics in evaluation serves the following primary purposes:

- **Enables large amounts of information to be summarized:** There are two basic measures used in summarizing evaluation data. One is the measure of central tendency, usually the mean, less often the median and mode. This measure presents, in a single number, a summary of the characteristics of the entire group, such as the average compliance rate of a group of facilities. The second measure is the dispersion, or variance, which is usually measured by the standard deviation. This reveals how much the individual items in the group are dispersed.
- **Allows for the determination of the relationship between two or more items:** In analyzing data, the relationship between one or more items may be important. The term used for this relationship is correlation, which represents the degree to which the items are related. A positive correlation between two items means that as one item increases, the other increases. For example, if the owner of a dry cleaning facility receives a high posttest score at a course on environmental requirements for dry cleaners, this high score might correlate to better compliance back on the job. There can also be a negative correlation between items (i.e., as one item increases, the other decreases). In this case, the correlation coefficient would be negative.
- **Shows how to compare the differences in performance between groups:** When performance improves after EPA has implemented the strategic approach, you are likely to be asked: “Did the improvements occur because of the approach, or could it have occurred by chance?” In other words, without the program, would the same results have been achieved? How accurately can the conclusions be drawn? Statistics enable you to place a confidence level on your conclusions about the differences in groups of data.

Statistics also allow you to make comparisons to show trends over time and actual performance against targets. Finally, remember to include multiple sources of data whenever possible to strengthen and validate a particular finding or conclusion.

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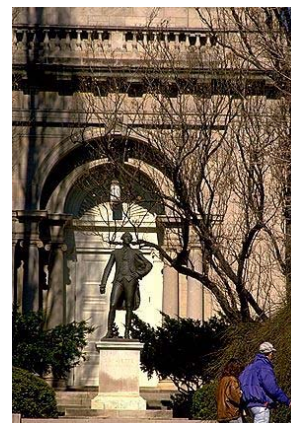
<sup>4</sup>Leonard Nadler, *The Handbook of Human Resource Development*. John Wiley & Sons, 1984.

**6 Present the evaluation results.** Choose the format for presenting the data and any findings based on your audience, the nature of the data and the way that the information will be used. Most importantly, select a presentation method that will clearly communicate the results of your evaluation. There are several environmental evaluation reports on EPA's Web site at [www.epa.gov/evaluate](http://www.epa.gov/evaluate) that you may find useful to reference. This site provides a few examples of evaluation reports that have focused specifically on the results of using compliance assurance tools. One is an evaluation of *Oregon's Toxic Use and Waste Reduction Assistance Program* (see [www.epa.gov/evaluate/tuwrap1.pdf](http://www.epa.gov/evaluate/tuwrap1.pdf)). The other is *EPA New England's (Region 1's) evaluation of its Colleges and University Initiative* in 2003. This initiative was also one of the national strategic approach pilots. This evaluation focused primarily on one of the tools the Region used to address the environmental issues at colleges and universities; namely, the self-audit compliance incentive tool. As an example of how evaluation results can be presented, excerpts from the Executive Summary of the Region 1 evaluation follow; for the complete evaluation report, see [www.epa.gov/newengland/assistance/univ/pdfs/Final-CU-Initiative-Evaluation6-03.pdf](http://www.epa.gov/newengland/assistance/univ/pdfs/Final-CU-Initiative-Evaluation6-03.pdf).

### Colleges and Universities Evaluation Executive Summary

The New England Colleges and Universities Initiative (the C/U Initiative) provides compliance information and training to C/Us; promotes innovative self-audit and environmental management system (EMS) initiatives; and encourages environmental best management practices. The overall goal of the program is to improve environmental performance at C/Us while enhancing environmental awareness on campus.

EPA New England developed an evaluation of the C/U Initiative, focusing primarily on the **Audit component**, under which participating schools were given low inspection priority and reduced penalties in exchange for completing self-audits of their facilities. The evaluation was based primarily on a survey of 52 C/Us participating in the Audit component of the Initiative, as well as on a series of additional interviews with regulators and schools that chose not to participate in the program.



The objectives of the evaluation were to help determine if C/Us were implementing preferred environmental practices as a result of the C/U Initiative; examine the factors that motivated C/Us to take part in the program; and consider the applicability of the C/U Initiative approach to other EPA Regions or other sectors of the regulated community.

The evaluation yielded a variety of findings and conclusions about the effectiveness of the C/U Initiative:

- **Program incentives encouraged participation:** Roughly half of all New England C/Us took part in the Audit Initiative. While the threat of enforcement actions encouraged many C/Us to participate, nearly all C/Us were motivated by the incentives offered under the Audit Initiative, particularly the desire to achieve a lower inspection priority.
- **Participants addressed violations identified in self-audits:** About three-quarters of the Audit Initiative participants implemented short-term corrective actions to address problems found in their self-audits. Common actions included waste labeling, spill prevention and waste removals.

- **Participants are implementing long-term environmental management changes:** Rather than simply implementing “band-aid” corrections to issues uncovered in audits, nearly all of the Audit Initiative participants are implementing long-term environmental management improvements. Common changes include improved recordkeeping and information management, labeling programs, and enhanced training requirements.
- **Participants intend to perform audits in the future:** As further evidence of the potential for the Audit Initiative to yield future dividends, more than three-quarters of the schools surveyed intended to perform additional self-audits in the future. This finding demonstrated that, although participants found the self-audit process demanding, it was valuable and worth repeating.
- **Participants find outreach tools useful:** Survey respondents voiced satisfaction with the technical support efforts that EPA has taken as part of the overall C/U Initiative. Respondents cited the workshops, the common violations list, the regulatory interpretations and the summary of the SPCC regulations as being especially useful in completing self-audits.
- **Many schools are implementing or considering EMSs:** Nearly half of the survey respondents are implementing, planning or considering an environmental management system. These schools cite the self-audit process and EPA’s overall educational efforts as influencing their decision to explore EMSs. This finding suggests that EPA efforts to increase awareness and encourage adoption of EMS are succeeding. However, most schools are in an early stage with their EMS and were not yet able to identify specific benefits yielded by the approach.

Two factors appeared to be most responsible for the success of the C/U Initiative. First, the C/U sector has characteristics that are highly conducive to a self-auditing approach. Key features of the sector include the technical sophistication of decision makers (e.g., Environment, Health and Safety staff); sensitivity to public image; peer pressure between schools to maintain clean environmental records; and a mutually supportive exchange of technical information between schools. Second, the C/U Initiative was well managed and administered. State regulators and other stakeholders complimented EPA’s management of the program, highlighting EPA’s willingness to coordinate with the states, the open information exchange between EPA and the C/Us, and the quality of EPA outreach efforts such as workshops and guidance materials. By providing C/Us with a point of contact at the Agency, the program has improved communication and coordination between EPA and the C/Us. This positive rapport represents a noteworthy contrast to the adversarial relationship that often prevails in regulatory programs and has contributed to the overall success of the C/U Initiative. EPA may wish to consider ways in which it can maintain this relationship through a continued presence in the C/U sector.

The evaluation also considered whether the self-audit approach could be readily transferred to other regulated sectors or other EPA Regions. Based on a qualitative review of the extent to which other sectors have features similar to the C/U sector, it appears that the approach may hold promise for sectors such as hospitals and research labs. In particular, these sectors possess the structure (e.g., many geographically scattered facilities), technical sophistication and image sensitivity that characterize the C/U sector. Likewise, several other EPA Regions are already applying the self-audit approach to manage compliance at C/Us. The success of these efforts has yet to be determined, but it is possible that the dominance of large, public university systems in

some Regions may offer advantages (e.g., resource sharing, system-wide auditing) not realized in New England, where smaller, private campuses dominate. Overall, it was recommended that relevant Regions implement a comparative analysis of the self-audit programs completed thus far in order to identify key determinants of success that may guide future initiatives.

In summary, this evaluation indicated that the New England C/U Initiative had successfully realized its key objectives, achieving compliance and environmental benefits with limited enforcement resources. Participants have implemented numerous corrective actions in response to audit findings and also have introduced long-term management changes designed to improve environmental performance. Collaboration between EPA and the schools has been extensive, and the participants speak highly of the technical support they have received. This collaboration allowed C/U environmental managers to meet their obligations and, in some cases, to move beyond basic compliance and institute innovative measures such as environmental management systems.

## Challenges and Opportunities

### **Challenge: Lack of Agency experience and expertise in conducting evaluations**

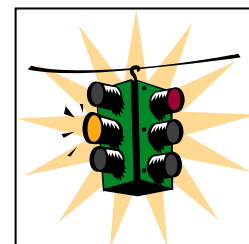
Demand for information about the performance, operation and results of EPA programs and strategies has continued to increase. However, EPA has undertaken evaluation on an informal basis, and evaluation expertise has been limited.

### **Opportunities and Suggestions**

The Government Performance and Results Act (GPRA) has served as a driver for EPA to focus on more systematically using evaluation. GPRA requirements to measure program results, outcomes and performance in terms of goals and measures are creating an opportunity for the Agency to think more critically about the underlying logic of its programs. Program evaluation can help identify program impacts, reasons for observed outcomes and how programs can be improved. However, program evaluation should be viewed in a context broader than GPRA alone.

Other drivers for conducting program evaluation include the Office of Management and Budget's (OMB) Program Assessment Rating Tool (PART). The PART is used to assess and evaluate programs across government and emphasizes use of "independent and quality evaluations" to determine if programs are effective and achieving results.

The President's Management Agenda (PMA) identifies five areas for improving the management and performance of the federal government using a scorecard to rate federal agencies on each initiative, giving a "score" of red, yellow or green.



Program evaluation provides a range of strategies that can support the ongoing performance measurement that is required under GPRA and the other drivers discussed above. By constantly evaluating its environmental programs, EPA can capitalize on

lessons learned and incorporate that experience into other programs and environmental arenas.

To assist in these efforts, EPA's Evaluation Support Division (ESD) in the National Center for Environmental Innovation is working to identify, build and leverage evaluation capacity throughout the Agency. This work demonstrates how program evaluation can be a valuable tool and an integral component of the Agency's emerging results-based management framework.

ESD has taken a leadership role in identifying and building evaluation skill and knowledge throughout the Agency through a number of activities. These have included:

- Co-chairing the EPA Program Evaluation Network.
- Designing and conducting evaluation training.
- Serving as an advisor to program offices conducting evaluations.
- Networking with state, academic and other program evaluation practitioners outside EPA.
- Serving as an information clearinghouse for information resources encompassing program evaluation standards, tools, journals and associations.

In continuing to build capacity for program evaluation in the Agency, ESD will continue to identify and disseminate knowledge of evaluation, and harness diverse information resources and tools. Environmental program evaluation has recently emerged nationally as a recognized sub-discipline that applies the principles and approaches of traditional program evaluation, tailored to the specific needs and challenges of environmental policy management. Go to [www.epa.gov/evaluate](http://www.epa.gov/evaluate) for an extensive listing of evaluation resources.

### **Challenge: Lack of data needed for evaluations**

Data collection is an ongoing problem for the Agency's measurement and evaluation efforts. The availability of quantifiable data on environmental results to tie to the implementation of EPA's strategic approach has been highly variable. When an activity or approach results in a change in the level of emissions or discharges that are already being monitored and tracked for regulatory purposes, data are easily obtained. However, if the approach is aimed at an environmental problem for which few or no data exist (e.g., non-point source pollution), it will be more difficult to quantify the level of improvement through environmental indicators directly related to the implementation of the approach.

EPA has relied on qualitative and anecdotal data for many efforts. Lessons learned and information on how people involved with the strategic approach perceive it to be working are of some value. But even that information may be difficult to gather. For example, during the pilot phase when the *Framework* was being tested, EPA attempted to evaluate the usefulness of the *Framework* itself by use of a survey. Attachment F contains a copy of that survey. Unfortunately, due to insufficient responses, EPA was unable to complete the evaluation of the *Framework*.



Another challenge to collecting data on results is the restrictions under the Paperwork Reduction Act on surveys and questions that the federal government can ask of non-federal entities or persons. OMB must grant permission to collect this type of information through an Information Collection Request (ICR). ICRs are required for most EPA surveys to collect measurement or evaluation information from more than 10 non-federal recipients.

### ***Opportunities and Suggestions***

The Agency is exploring various mechanisms for improving data collection, including generic ICRs for evaluation, additional training on data collection and additional sources of data beyond those that EPA has traditionally relied upon.

## Element 9: Exiting the Strategy



### Objectives

- Introduce considerations for deciding whether and how long to sustain the strategy and when to exit and transition to a core program or maintenance approach (see Key Concepts).
- Provide considerations on when to transition and a step-by-step process on how to plan for a transition.
- Identify key challenges and opportunities for deciding when to transition or sustain the approach.



### Purpose

This information on this element examines some of the basic considerations in assessing the most appropriate point to transition the strategy to a maintenance level or to sustain the strategy. It supports Element 4 of the *Template*, titled “Exit Strategy.” The goal in planning for this element is to recognize that at some point the strategy will no longer have a heightened level of resources and attention; the resources committed and the roles and responsibilities of the team will shift back to the core program or a maintenance mode.



### Approach

Planning for a strategic approach includes planning how to exit it. Ignoring this element of the planning process leads to a higher possibility of failure and logistical complications. Think of exiting as the beginning of the next phase of the strategy. Most, if not all, of the elements of a strategic approach (e.g., goals, monitoring, resources, communicating) need to be addressed for a long-term maintenance plan. When a strategy ends, the need for environmental protection remains. Unforeseen circumstances and changes that arise during implementation of the strategy could affect your decision on when and how to transition; however, obvious and predictable factors (presented in the following table) will also influence your decision to either transition and exit or to sustain the strategy. These factors are not mutually exclusive; the decision for the next phase of the strategy could be based on any or all of them.

#### Key Concepts

**Core Program:** The fundamental activities implemented by EPA, state and local agencies (or a delegated authority) to protect the environment.

**Priority:** Recognized environmental problems that warrant heightened resource and commitment levels for a designated period of time.

**Maintenance:** The level of commitment to the strategy shifts from a resource-intensive priority to a level commensurate with the agency’s mission and long-term goals and objectives.

**Sustain:** The level of commitment to the approach remains elevated until further assessment.

#### Key Considerations

Based on lessons learned from the pilot projects and other experience in developing and implementing strategies, we provide the following considerations for deciding when and how to exit the strategy:

- Include this element from the start of the planning process.
- Identify all the long-term options for continuing to address the environmental issue in the future, while balancing the resource commitment with the environmental impact for each option.
- Develop a transition and maintenance plan that specifies future resource obligations, whether and how to address regulated entities not covered by the approach, and actions to safeguard improvements achieved.

Factors to consider in determining whether to sustain or exit the strategy	Sustain the strategy if...	Transition and exit the strategy if...
Are the goals met?	Goals for the approach are not achieved.	Goals for the approach are substantially achieved.  Goals cannot be substantially achieved, but activities are completed according to schedule.
Are you prepared to evaluate the approach and measure the goals?	Data are insufficient for program evaluation and performance measures.	Data are sufficient to evaluate the approach and address the goals.
Are resources allocated to perform key activities?	Resources are available to continue key activities.	None or limited resources remain to carry out key activities.
If identified as a goal, is environmental compliance by the target audience being achieved?	Environmental compliance is not achieved, and further actions as a high priority are warranted.	The environmental problem is substantially addressed and is ready for a long-term maintenance plan.
Are there competing priorities where resources could be used more effectively?	The target audience is responding positively to the strategy, and continuation of the approach will most likely prove successful.  The target audience has responded to the strategy, and external partners are sustaining the return to compliance or beyond compliance.	The target audience is not responding positively to the strategy, and transitioning to the core program or to enforcement only is warranted.



## Step-by-Step Process for Exiting and Transitioning the Strategy

Determining when and how to exit the strategy and what will be the next phase to address an environmental problem that was once viewed as a priority requires consideration of all the other elements in the strategy.

Provided here are suggestions and examples on the type of information to consider in planning for this element.

**1** The default position for exiting a strategy is when the goals are met and measured. With this position in mind, **take the time up front to assess whether the goals and measures are clear, realistic and tangible, and whether the data to demonstrate success is obtainable.** Assuming the strategy goes as planned, it will be obvious when to exit. However, that is not always the case. That is why you need to



consider how to best use other elements in the strategy to help you determine when to exit or when to sustain. More importantly, deciding “when” does not inform you “how” to transition and to determine what constitutes the “next phase.”

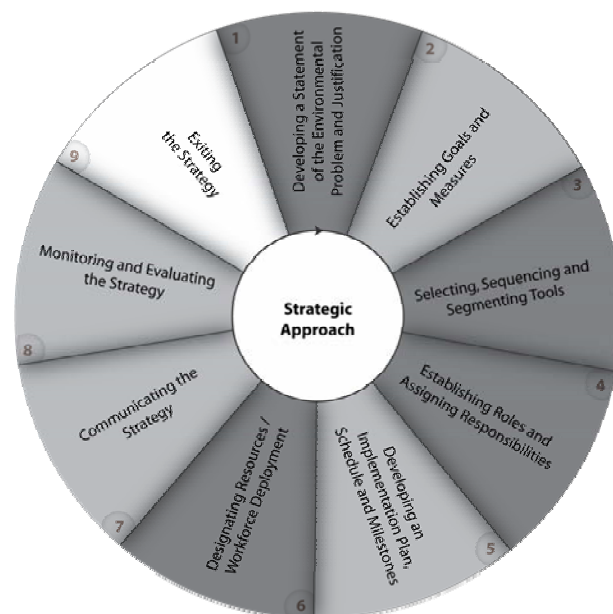
**2 Incorporate exiting the strategy with the development of the implementation plan** (i.e., schedules and milestones). Factor into the schedule the anticipated time and approach for exiting. Recognize that you may need to transition sooner than expected (e.g., goals met earlier, competing resources), or you may need to sustain the approach longer than you initially realized (e.g., strategy is successful but more time is needed to address the entire target audience, changed selection of tools midcourse, environmental issue is broader than initially determined).

**3 Incorporate exiting the strategy with the development of monitoring and evaluation.** Consider what actions (e.g., target audience’s response to the tools, compliance improvements, team resources) you will need to monitor to move toward exiting and what steps (e.g., communicating to interested and impacted stakeholders) will need to occur to prepare for exiting. Environmental protection is dynamic and requires continuous monitoring to address the success of the strategy.

**4 Develop a transition proposal.** Even though your attention is focused on planning for a strategy, take the time to draft a transitioning and maintenance proposal, assuming the best case scenario but preparing for obstacles along the way. At a minimum, include in your proposal the following:

- The tools used in the strategy that need to be maintained in the next phase.
- The current resource level (or the level used throughout the approach) and the level of resources required after the transition occurs.
- The roles and responsibilities for the office that will be in charge of the next phase.

**5 Communicate the transition and maintenance proposal** with your team and share and seek concurrence on the proposal with the managers in the office that will be responsible for the maintenance phase. Seek concurrence in a timely manner so the office (or delegated authority) has time to secure resources for the next budgeting cycle and notify all affected personnel for the next planning cycle.



*This diagram focuses on exiting the strategy and highlights the other elements that are particularly important during the decision-making process for this element.*

## Challenges and Opportunities

The following case examples and suggestions provide insight into assessing whether to transition and exit or to sustain the strategy. These examples illustrate Regions’ and states’ response to the question: What factors or situational changes occurred during

implementation of the integrated approach that justified exiting, continuing or expanding? Each approach has a unique set of challenges, but these suggestions may help you find the justification for exiting or continuing your strategy.

### **Challenge: When and how to continue to address a sector-wide compliance problem as a priority**

#### *Opportunities and Suggestions*

In many cases the decision to continue the strategy beyond its original exit date turns on the knowledge gained about the scope and breadth of the environmental problem during implementation of the strategy. Your initial strategy may have focused on a defined population faced with a single environmental problem. But once the strategy starts, you realize that the targeted population has doubled and the environmental problems are numerous. This is the time to step back and assess how much more work needs to be accomplished to gain a better perspective on the problem and determine the most effective and efficient approach to acquire that information. Some regions take the approach of setting up focus groups and widely publishing the intent of their strategy to gather additional information on the scope of the problems. In other instances, regions may undertake new multimedia inspections or increase the number of scheduled inspections to understand the breadth of the environmental problems. This is not the time to stay the course as initially planned just to meet an end date you set a few months ago. At a minimum, you will need to reevaluate your strategy to determine whether it should be expanded to address and improve the additional problems identified.

### **Challenge: When and how to make the transition from a priority to a core program or maintenance plan**

#### *Opportunities and Suggestions*

Some level of non-compliance and related environmental problems will remain after a priority strategy ends. This underscores the importance of defining clear, realistic goals for priority areas that can be met and measured in a reasonable number of planning cycles. Identifying when it is time to transition from a priority to a core program level of attention in a particular program area requires a discrete endpoint by which the “mission is accomplished.” Not every mission will be defined in the same way. For example, some may use improvements in compliance rates for a particular sector or requirement, while others may be based on elevating attention to long-standing requirements that are in need of renewed focus. In **EPA’s Safe Drinking Water Act (SDWA) Microbial Rules National Strategy**, EPA and stakeholders realized that a short-term intense focus on core requirements of the SDWA could provide needed attention on reducing drinking water contamination from microbial pathogens, but would not completely eliminate non-compliance. Forty-nine out of 50 states and most U.S. territories have primacy for implementing and enforcing the SDWA program; therefore, EPA enforcement presence could not necessarily change overall compliance rates associated with the microbial regulations. During the period of the drinking water microbial priority, the increased focus on and Federal attention to this environmental problem did, however, stimulate overall compliance and enforcement



activity in this area and helped decrease microbial contamination in drinking water provided by public water systems.

All stakeholders agreed to transition from a national priority to the core program at the end of EPA's first three-year planning cycle in FY 2004. In EPA's judgment, transitioning to the core program allowed EPA to shift Federal attention to program management and oversight efforts aimed at ensuring that primacy authorities continued to focus appropriate compliance and enforcement efforts to address microbial noncompliance and improve drinking water quality.

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Final 11/5/02

## **Framework for a Problem-based Approach to Integrated Strategies**

### **BACKGROUND**

*The “Interim Final 11/18/96 Operating Principles for an Integrated EPA Enforcement and Compliance Assurance Program” describes a set of core principles for EPA’s enforcement and compliance program, the various “tools” available to address environmental problems and guidance on the integration of those tools. Over the years, there has been different experience in using the guidance and effectively integrating these tools by the Headquarters and Regional offices who implement the national compliance assurance program. This Framework reaffirms the “Operating Principles” and the general approach it sets forth. A draft white paper on the Use of Integrated Strategies (May 25, 2001) was also developed by OECA which reaffirms the approaches laid out in the Operating Principles and discusses lessons learned in integrating compliance assurance tools. Both of these documents provide relevant background information. This Framework builds on these documents and advocates using a problem-based approach to using and assessing the impact of our compliance assurance tools. Further, the Framework advocates the consideration of all tools and the elements of the Framework - not necessarily the use of each tool and the application of each element to every problem. In some cases, for example, an immediate enforcement response may be the most appropriate approach given the situation and problem.*

*This Framework is intended to be utilized after national and/or Regional problems have been identified on which federal resources will be expended. The Framework provides guidance for developing “integrated strategies”-- a strategic approach which gives up front consideration to which tool or tools – compliance assistance, enforcement, compliance monitoring and compliance incentives – to use when addressing identified environmental problems. The Framework encourages proactive consideration of the elements of an integrated strategy: 1) data gathering to further define the problem and universe and develop compliance baselines, 2) tool selection and sequencing to effectively address the environmental problem(s), 3) up front development of measures to assess progress and outcomes and 4) communication with stakeholders, partners and the public. Use of the framework can add*

*transparency to EPA's decision-making process.*

**I. STATEMENT OF ENVIRONMENTAL PROBLEM {"What" (specify) is the environmental problems or issues?}**

To understand the impact and significance of environmental problems/issues, establish a baseline of information on: a) health and environmental impacts; b) potential risks; and c) root and contributory causes. Establishing a baseline of information will help create the framework for the type and level of integrated strategy to be developed and the approach to measure the integrated strategy's effectiveness.

Below is a list of factors to be considered when establishing the baseline:

- Pollutants involved
- Geographic areas impacted
- Population impacted (environmental justice communities)
- Distinct/specific noncompliance issues or patterns that need to be addressed
- Industry sectors that appear to contribute to the problem
- Health and environmental consequences of the problem
- Current applicable federal, state, & local regulations, regulatory gaps, and opportunities for use of other regulatory authorities or innovative approaches

**II. JUSTIFICATION FOR SELECTING THIS PROBLEM OVER OTHERS {"Why is the identified problem one that EPA should devote resources to now?}:**

Given competing resource needs and priorities, describe the factors that make this problem(s) ripe for resolution and a relative priority.

Questions to *consider* when making this decision:

- What is the scope/seriousness of the health or an environmental problem?

- How does this environmental problem rank relative to others being considered?
- Is noncompliance contributing to the problem and could it be addressed by EPA intervention?
- Has there been an EPA or state presence in the sector?
- Are there a large number of facilities which will benefit?
- Are there a large percentage of small businesses with limited capacity to comply?
- Is the problem widespread or a growing problem?
- Do the problems fall within EPA's role/authority?
- Does the problem merit the attention of OECA and the Regions?
- Does the proposed problem fit EPA's planning horizon?
- What is the current level of attention?
- Are there new or pending rules that may impact the problem?
- Are there environmental justice considerations?

**III. DESIRED/ANTICIPATED OUTCOMES/RESULTS {"What" (specify) are the goals and objectives? "What" (specify) do we hope to accomplish?}:**

*What do we want to measure?* Measures can be used to show: a) progress toward the anticipated outcome - interim measures; b) need for mid course corrections, c) the effectiveness of the integrated strategy and, d) lessons learned for program evaluation. During the development of the integrated strategy identify both final measures of success and interim measures and milestones. Where appropriate, measure each type of tool used in the integrated strategy as well as the synergistic effect of the tools. Measuring each type of tool used may be more appropriate as an interim measure. In determining desired outcomes, consider compliance and "beyond" compliance goals.

Below are examples of the **generic outcome measures** to be considered in problem based integrated strategies.

- Increased understanding of regulatory requirements
- Facility Management Changes
- Facility Process changes
- Return to Compliance

- Regulatory actions taken
- Pollutant Reductions
- Capacity Building
- Adopt sustainable practices
- Promote/demonstrate changes in industry supply chain

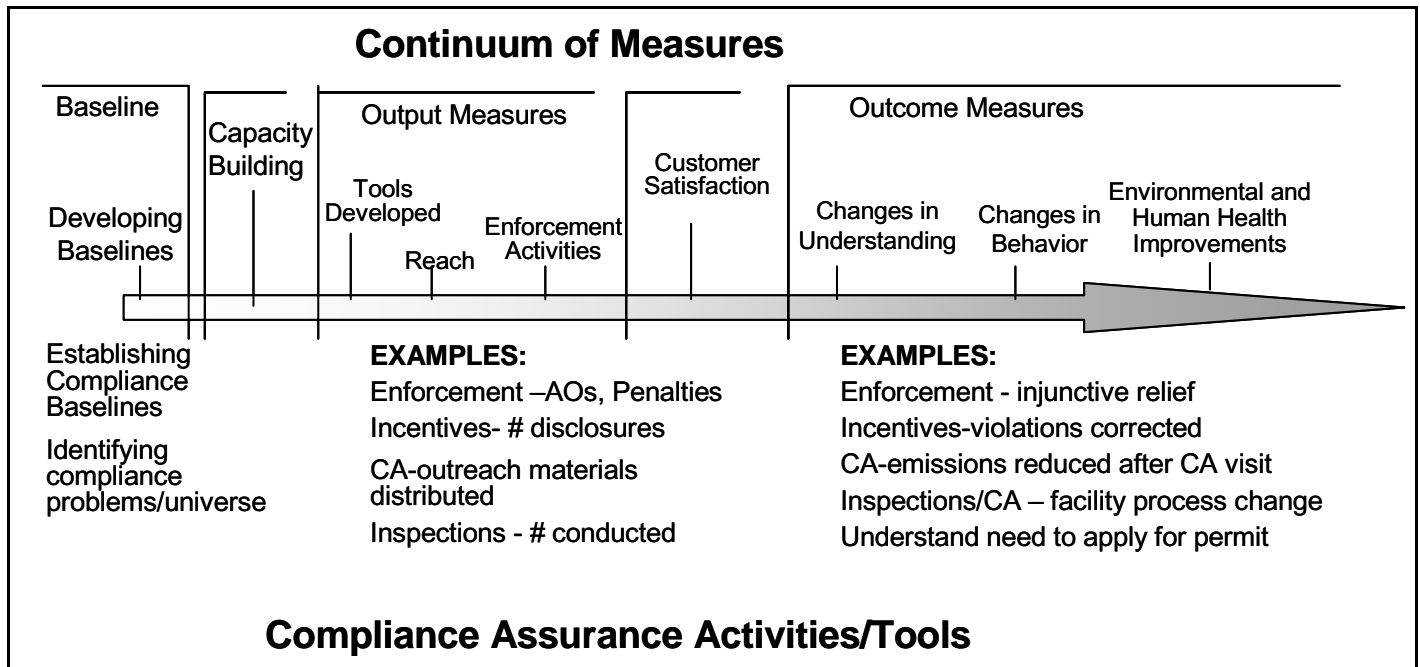
Below are some examples of **interim measures**:

- Tools developed
- CAP program letters sent
- Reach/outputs can be used as interim measures

*How will we measure our progress?* Identify the outputs/outcomes for your activity and the type and sequence of measurement tools to be used to assess your progress/results. The measurement continuum is far reaching and ranges from gathering baseline data to measuring environmental improvements.



**IV. USE OF AVAILABLE COMPLIANCE ASSURANCE & ENFORCEMENT TOOLS {“How” are we going to address/solve the problems or issues?}**



Consider any of the elements below when deciding on and developing integrated strategies. In some cases, enforcement or compliance assistance alone may be an appropriate strategy. It may be appropriate to use cross-programmatic, multimedia and/or cross-regional teams to develop a plan for using the most appropriate tool/tools and sequence of tools. Various partners in the strategy may use different tools ( e.g., state Small Business Assistance Programs may use compliance assistance; EPA may use incentives or enforcement). See the attached guidance on factors to consider in choosing and sequencing tools (TO BE DEVELOPED)

Overview<sup>1</sup>

Element 1: *Compliance assistance activities* - What will be the level of CA? Determine the

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<sup>1</sup> Briefly discuss the sequencing of the elements (and their integration into the overall effort), how the use of a particular element complements the use of the others, etc.

appropriate levels and types of CA that could be used to address the environmental problem. Who will provide it? What tools exist or need to be developed? What will EPA's role be as a CA provider and how will EPA work with other providers?

Element 2: ***Compliance incentive activities*** - Will EPA or state policies or activities be used to provide incentives? Consider the usage of policies and activities, including EPA's Audit Policy, Small Business Compliance Policy, Small Communities Policy, and CAPs.

Element 3: ***Compliance monitoring activities*** - What is the appropriate level of CM? Will CA be integrated with CM activities? Is there or can we develop common terminology on levels of CM/CA that can facilitate this integration? "The Role of the Inspector in Providing CA" and the ICDS may be useful starting points.

Element 4: ***Enforcement activities*** - What Enforcement Response Policies may be used? Determine what kinds of enforcement activities may be used to address the environmental problem.

Element 5: ***Other Relevant Activities*** - what other EPA or state activities will be included in the strategy? (e.g., developing new regulations, sustainable industry program activities and other innovative approaches, coordination with other federal agencies, use of compliance-based environmental management systems, pollution prevention activities and other beyond compliance activities, best management practices that help ensure compliance and improved environmental performance, mentoring and demonstration of environmental leadership)

## V. RESOURCES [ *What resource needs and issues are associated with the effort?*]

Questions to consider:

- What is the best sequence of tools to address the problem? Are there any cost efficiencies associated with certain tools or combination of tools?
- Will different tools be applied to various segments of the regulated community?
- Are the resources available to implement each tool of the integrated strategy?
- What are potential sources for obtaining needed resources, i.e., where can we look for additional resources if we don't have them?
- Can there be varying levels of implementation of the tools to reduce costs?
- What are the economic cost and environmental benefit for implementing each type of tool/cost of implementing the integrated strategy as a whole?

**VI. SCHEDULE - (What is the schedule for undertaking the specific tasks in implementing the strategy?)**

Draft a schedule with milestones for undertaking the strategy. Consider resource needs, the MOA and state planning processes, reporting deadlines

**VII. INVOLVED STAKEHOLDERS AND ROLES AND RESPONSIBILITIES - (*Who are the involved stakeholders and what are their roles and responsibilities?*)**

Questions to consider:

- How will EPA work with other regulators, including other federal agencies?
- How will OECA and the regions coordinate with the other EPA program offices, and state offices?
- ◆ Which regulatory body will take the lead?
  - ◆ Enforcement - what regulatory body has the lead for enforcement actions?
  - ◆ Compliance monitoring - What regulatory body has the lead for conducting inspections?
  - ◆ CA - Who has the lead for delivering CA to the regulated entities?
- Which unit within the organization will have the lead for coordinating and implementing the integrated strategy?
- What is the role of the supporting regulatory agencies?

- What is the role of 3<sup>rd</sup> parties in the development and implementation of the strategy?
  - a) Federal Regulators:
    - HQ - which offices? which programs?
    - Regions - which offices? which programs?
  - b) Other Regulatory bodies: State/local tribal
  - c) Third Parties: Trades, industry, nonprofit, community groups, suppliers, etc.

**VIII. COMMUNICATION** *{“How” will stakeholders be informed of the status and results of the activities reflected in the strategy? Has a communication strategy been developed?}*

There are three key audiences that must be kept informed throughout the implementation of the integrated strategy. Each of these audiences has a need for different types of information at different stages of the strategy. These three groups are: a) participants that are working on the integrated strategy; b) federal and state Agency management; and c) external stakeholders including the regulated community and the public (includes the news media).

- a) Participants working on the integrated strategy: They need to know all of the elements and actions of the strategy and have a clear understanding of all the activities and outcomes. It is critical to develop a glossary of clear and consistent terms and concepts to ensure that all parties are in agreement. If they are expected to communicate the strategy to others, should talking points and presentations be developed and shared?
- b) Federal and state agency managers: A communications plan needs to be developed at the onset of the strategy’s implementation to ensure that management is appraised of the strategy’s progress, and to gain support and potential partnership of the Agency’s efforts to address the compliance issue. The communications plan usually includes strategies and implementing tools/activities.
- c) External stakeholders: A communications plan needs to be developed at the onset of the strategy’s

implementation to ensure that the regulated community is adequately informed of its compliance responsibilities and EPA's efforts to address the compliance issue/problem. Likewise, the Agency has a responsibility to inform the public on what EPA is doing to address compliance issues/problems, particularly in environmental justice communities. The communications plan usually includes strategies and implementing tools/activities. Regardless, there is a need to ensure consistent messages.

**IX. MONITORING & EVALUATION PROCESSES: {"How" will progress relative to goals and objectives be monitored?}**

Questions to consider:

- Are we making progress throughout the various interim stages of the strategy?
- Have we addressed the environmental/health problem(s) identified in Section I. The Statement of the Environmental Problem?
- Have parts of the strategy worked but not others?
- Do we need to modify the strategy?
- What is the overall effectiveness of the Integrated Strategy approach?



## **ATTACHMENT B**

### **Contacts for the EPA Regions 2002-2004 Integrated Strategy Pilot Projects**

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- Region 1:** *Schools:* EPA New England K-12 Schools Integrated Strategy Mary Dever, (617) 1717  
*Hospitals:* Healthcare Sector Strategy / Baseline Information, Janet Bowen (617) 918-1795
- Region 2:** *Hospitals:* Compliance Assistance for Hospitals as Part of Integrated Strategy Initiative for the Healthcare Sector, Kathleen Malone (212) 637-4083, John Gorman (212) 637-4008
- Region 3:** *Schools:* Preventing Risks to Children's Health in Schools by Increasing Compliance., Betty Barnes, (215) 814-3447
- Region 4:** *Wood Preserving:* Developing a Baseline of Wood Preservers in Region 4 States, Shannon Maher (404) 562-9623
- Region 5:** *Auto Salvage:* Indiana Department of Environmental Management Auto Salvage Facility Sector Project, Matthew Deaner, Indiana
- Region 6:** *Construction (Oil and Gas):* Integrated Strategy Pilot for NPDES Storm Water Phase II Rule Implementation the Oil and Gas Industry in Region 6, Casey Luckett, (214) 665-7393  
*Agriculture:* Integrated Strategy Pilot for Compliance with new NPDES CAFO Permits at Concentrated Animal Feeding Operations, Abu Senkayi (214) 665-8403, Richard Powell, New Mexico, Norma Aldridge, Oklahoma
- Region 9:** *Auto Salvage:* Storm Water Protection Program Compliance Assistance for AutoWreckers/Recyclers: Assessment of Effectiveness of Compliance Assistance Methods, Angela Baranco (415) 947-4262
- Region 10:** *Construction:* Alaska Stormwater Integrated Strategy Pilot Project for the Construction Sector, Chae Park (206) 553-1441

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## ATTACHMENT C

Final Draft  
2/18/04

# Template for Developing a Performance-Based Strategy for National Compliance and Enforcement Priorities

## **I. Problem Statement**

- A. Define and characterize the environmental or non-compliance problem for the priority area
- B. Provide baseline information on the size of the priority universe, geographic distribution of the problem, level of compliance, and any environmental justice issues
- C. Address how the problem relates to each OECA criteria for priority selection
- D. Address how the problem affects Environmental Justice (all strategies) and Federal Facilities issues (where appropriate).
- E. Describe known or suspected causes of the problem
- F. Identify existing policies and guidance that address the priority; and past strategies or initiatives used to address the problem

## **II. Goals and Measures**

- A. Establish an outcome goal for the priority area
  1. The goal should address the priority area, be measurable, and reasonably achievable in the given time frame
  2. Achievement of the goal will serve as the end point for the priority
- B. Establish outcome and output measures for the priority area
  1. *Outcome Measures* should be directly linked to, and serve as the primary indicator of progress toward achieving the outcome goal
  2. *Output Measures* serve as indicators of progress toward implementing the components of the priority strategy, and will enable managers to track implementation milestones
  3. Measures should be developed for EJ (all strategies) and Federal Facilities (where appropriate)
- C. Establish baselines for all measures, or develop a plan for developing a baseline for each of the measures

## **III. Priority Strategy**

- A. Identify a mix of tools that will be used to address the priority area, and how they will result in achieving the outcome goal
- B. Describe how the tools will be used in conjunction with each other to achieve the best results
  1. Include the sequence in which tools will be used, targeting priorities, how long they will be used, implementation milestones, resource issues, and implementation roles (i.e., headquarters, regions, others)
  2. Include a description of how Environmental Justice (all strategies) and Federal Facility

- issues (where appropriate) will be addressed by the application of the tools
- C. Develop a plan for periodically reviewing progress and making adjustments to the strategy as needed
  - D. Develop internal and external communication strategies. The internal strategy should focus on providing managers information on strategy implementation and periodic performance measure updates to enable them to track progress and make needed corrections. The external strategy should inform the regulated community and stakeholders, help improve strategy effectiveness, and communicate results.
  - E. Assign Roles and Responsibilities. Identify all of the parties that will play a role in developing and implementing the strategy, and assign responsibilities for all of the development and implementation tasks. Responsibilities should be broken out by headquarters, regions, and others.

#### **IV. Exit Strategy**

- A. Identify steps to discontinue formal priority treatment once the outcome goal has been met
- B. Develop a maintenance plan to include:
  - 1. Significant resource obligations
  - 2. Whether and how to address regulated entities not addressed as part of the strategy
  - 3. Actions to safeguard to improvements achieved; including periodic monitoring, review and adjustment

#### **V. Workforce Deployment Strategy**

- A. The priority sector or problem area should be assessed to identify the skill sets needed to effectively address the priority and implement the priority strategy. This assessment should anticipate the different skills needed at different points in the strategy (e.g., compliance assistance early on, more enforcement towards the end).
- B. Taking into account the strategy's ultimate goal, time line, and exit strategy; responsible parties in headquarters and regions should estimate the activity levels needed to achieve strategy's ultimate goal in the given time frame.
- C. Gap Analysis - headquarters and regions should identify workforce gaps that will impact achieving priority goals, including deficits in overall number of employees to address a problem area, and in particular skill sets.
- D. Workforce Deployment Recommendations - based on the gap analysis recommendations for making workforce adjustments within individual regions and headquarters, and between regions, and regions and headquarters should be identified to maximize strategy effectiveness.

#### **VI. Schedule**

Develop an overall schedule for addressing the priority area

**ATTACHMENT D**

**EPA Region 2 Healthcare Compliance Initiative  
06/08/2005**

**Executive Summary**

Sector	Healthcare
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Environmental Problem	<p>The 480 hospitals in New York, New Jersey, Puerto Rico, and the Virgin Islands pose a major environmental and public health concern. First, they contribute to the mercury in the environment which is of great concern in the Northeast. Rates of mercury deposition are estimated to be higher in the northeastern U.S. relative to most other parts of the country and extensive scientific data indicate that mercury is pervasive in freshwater fish in the Northeast at levels that pose health risks to people and some species of fish eating wildlife. According to a May 2002 New York Academy of Sciences report, hospitals, dental facilities and laboratories account for 90% of the mercury being discharged to the New York-New Jersey Harbor at this time. In addition to mercury, hospitals are also generators of a wide variety of hazardous wastes, (e.g., chemotherapy and antineoplastic chemicals, solvents, epinephrine, and pharmaceuticals) and produce two million tons of solid waste which is 1% of the total municipal solid waste in the U.S. Finally, random inspections at hospitals in Region 2 and across the country as well as results of self-audits being conducted by healthcare facilities under EPA's audit policy indicate a pattern of noncompliance with environmental requirements across much of the sector, especially in regards to the management of hazardous waste. Many hospitals have only one person in charge of all health, safety and environmental issues at the hospital and it is very difficult for one person to manage all the environmental aspects of a healthcare facility let alone the health and safety issues as well.</p>
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Goals	<p>In response to the above concerns, EPA Region 2 embarked upon a healthcare initiative for the purposes of improving environmental compliance and safety at main and off-site healthcare facilities; changing the culture of the healthcare community to one in which environmental compliance is a priority; promoting compliance of the entire sector; not just those reached through inspections; and ensuring continued compliance by implementing permanent changes such as through the development of environmental management systems. We also encouraged as part of our initiative that hospitals join Hospitals for a Healthy environment, a voluntary program that is trying to educate healthcare professionals about pollution prevention opportunities in hospitals with the goal of reducing the environmental footprint of the healthcare sector.</p>
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## ATTACHMENT D

<p>Measures</p>         <p>Results</p>	<p>The success of our healthcare strategy was measured in the following way:</p> <ul style="list-style-type: none"><li>• Increased awareness among the healthcare community regarding environmental requirements based on pre/post tests given at seminars/workshops and a survey;</li><li>• Increased number of healthcare facilities in Region 2 participating in Hospitals for a Healthy Environment;</li><li>• Number of violations corrected by hospitals as a result of our initiative as measured by case-conclusion data sheets (for both enforcement actions and voluntary disclosures) and a survey.</li><li>• Amount of pollution reduced as a result of our initiative as measured by case-conclusion data sheets and a survey.</li><li>• Number of pollution prevention and best management practices undertaken by hospitals as a result of our initiative as measured by a survey.</li></ul> <p>Environmental measures gathered for our approach to the healthcare sector has proven effective in improving the compliance rate and environmental footprint of healthcare facilities in our Region. For instance, as a result of our initiative:</p> <ul style="list-style-type: none"><li>• Between 60-65% of hospitals that participated in our workshops increased their knowledge of environmental requirements (Note: R2 also used workshop surveys to measure increased knowledge of the requirements which consistently provide results that show increases greater than 95%. Due to the large disparity between these results, R2 has chosen to use the measured results rather than the increase in knowledge reported by the attendees);</li><li>• So far, 57 hospitals/healthcare systems in NY and NJ have joined the H2E Program and have pledged to eliminate mercury and reduce the volume of waste they generate;</li><li>• <b>More than 2173 violations have been corrected of which 69% were RCRA, 4% CWA, 7% EPCRA, 18% CAA, 1% TSCA and 0% SDWA;</b></li><li>• At least 11,660 lbs/year of hazardous waste, 80,930 gallons of oil and 2100 pounds of chlorofluorocarbons are now being appropriately managed; and</li><li>• Approximately 341 residential units are now in compliance with lead-based paint rules.</li></ul>
<p>Tools Selected</p>	<p>EPA Region 2 set out to accomplish the above goals through a three-prong strategy. First, we provided environmental assistance to healthcare facilities to help them understand their environmental obligations, identify P2 opportunities, and develop an EMS. This assistance included holding 11 environmental compliance 101 workshops which gave a general overview of the various statutes that applied to hospitals; conducting more than a dozen full-day hospital-</p>

**ATTACHMENT D**

	<p>specific hazardous waste identification and management workshops since 60% of the violations uncovered at healthcare facilities involved hazardous waste; sponsoring EMS tutorials and performing environmental management reviews for federal hospitals which are required to develop an EMS under Executive Order 13148; and developing a healthcare website, a CD-ROM of healthcare environmental assistance tools, RCRA decision diagrams, a poster of RCRA generator requirements, a handbook of hazardous waste management at hospitals and an EMS guide for healthcare facilities.</p> <p>Second, we sent a letter to hospitals in December 2002 informing them of our intent to target healthcare facilities for inspections and enforcement and urging them to perform self-audits and to enter into corporate-wide audit agreements under EPA's voluntary audit policy. A model audit agreement was developed in order to reduce the time needed for review and negotiation. So far, 37 hospitals/ hospital systems have entered into audit agreements with EPA covering all major federal environmental programs. These agreements included the first ever audit agreement with the Veterans Healthcare Administration which encompassed all the federal VA hospitals in New York and New Jersey. To date, more than 1100 violations have been corrected under our voluntary audit program and \$9,739,076 in potential penalties have been waived.</p> <p>Finally, we conducted 44 inspections, and issued 24 enforcement actions, 10 of which were complaints totaling \$1,289,913 in penalties under our healthcare compliance initiative. These inspections and enforcement actions were done concurrently with the above environmental assistance and compliance incentives activities.</p>
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<p>Factors for Tool Selection</p>	<p>EPA Region 2 adopted this three-prong strategy for the following reasons: 1) a well-publicized enforcement presence throughout the initiative promoted accountability, encouraged facilities to take advantage of the environmental assistance and compliance incentives offered, and addressed serious threats to human health and the environment as well as identifying and addressing recalcitrant offenders; 2) environmental assistance increased the awareness and knowledge of environmental regulations, pollution prevention opportunities, and environmental management systems within the healthcare sector and provided tools to help healthcare facilities come into compliance and reduce their environmental footprint; and 3) the use of the audit policy allowed us to reach more healthcare facilities than we would have through inspections alone, resulted in permanent compliance changes not just quick fixes and allowed us to target our inspections toward those hospitals that, for whatever reason, were not interested in voluntarily complying with environmental regulations.</p>
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## ATTACHMENT D

Time Frame	2002-2005
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### **A. What is the environmental problem or issue and its significance for priority selection?**

There are 480 hospitals (both private and public) in New York, New Jersey, Puerto Rico, and the Virgin Islands. Given this large universe, EPA Region 2 did not have the resources to conduct inspections at every hospital in the region. Particularly, considering that these are large institutions with diverse operations and waste streams. A hospital may have, for example, laboratories, operating rooms, pharmacies, radiological facilities, cafeterias, housekeeping and laundry units, fleet maintenance facilities, boilers, medical waste incinerators, emergency generators, grounds and landscaping facilities, underground or above ground oil and fuel storage tanks, air conditioning and refrigeration equipment, morgues, lead-based paint, and asbestos. As a result, they are regulated by a myriad of environmental statutes including the Resource Conservation and Recovery Act, Clean Air Act, Clean Water Act, Safe Drinking Water Act, Oil Pollution Act and the Emergency Planning and Community Right to Know Act, not to mention the various state and local regulations that may be more stringent than the federal laws.

More importantly, the waste and emissions caused by these activities posed a significant risk to human health and the environment if not controlled properly. Hospitals, for example, contribute to the presence of toxic chemicals such as phthalates, mercury, and dioxin in the environment. Mercury, in particular, is of great concern in the Northeast. Rates of mercury deposition are estimated to be higher in the northeastern U.S. relative to most other parts of the country and extensive scientific data indicate that mercury is pervasive in freshwater fish in the Northeast at levels that pose health risks to people and some species of fish eating wildlife. In New York, for instance, the Department of Environmental Conservation's most recent fish advisories had 35 bodies of water contaminated with mercury throughout the state, and 10 with dioxin. In New Jersey, there are 85 different fish advisories (many with 2-4 sub advisories by species of fish) for streams, creeks, parts of rivers, lakes and reservoirs for mercury alone. There are also dioxin, chlordane and PCB advisories for various species in all of New Jersey's coastal waters. According to a May 2002 New York Academy of Sciences report, hospitals, dental facilities and laboratories account for 90% of the mercury being discharged to the New York-New Jersey Harbor at this time.

In addition to mercury, hospitals are generators of a wide variety of hazardous wastes, such as chemotherapy and antineoplastic chemicals, epinephrine, pharmaceuticals, solvents, formaldehyde, photographic chemicals, radionuclides, and waste anesthetic gases. They also produce 2 million tons of solid waste which is 1% of the total municipal solid waste in the United States. Furthermore, medical facilities contribute to various air pollution problems including smog, climate change, the depletion of the stratospheric ozone layer, and air toxics. Finally, random inspections at hospitals in Region 2 and across the country as well as results of self-audits being conducted by healthcare facilities under EPA's audit policy indicated a pattern of noncompliance with environmental requirements across much of the sector. Many hospitals, in fact, had only one person in charge of all health, safety and environmental issues at the hospital and it was very difficult for one person to manage all the environmental aspects of a healthcare facility let alone the health and safety issues as well. Sixty-percent of the violations

## **ATTACHMENT D**

discovered were related to hazardous waste management. Other violations involved spill prevention, control, and countermeasure plans, air conditioning and refrigeration disposal and repair, asbestos, Clean Air Act State Implementation Plans, lead paint disclosures for leased housing, PCB management, drinking water, and Emergency Planning and Community Right to Know Requirements.

### **B. What was the approach and methods used to baseline the environmental problem and understand the target audience that was contributing to the problem?**

EPA Region 2 used random inspections of hospitals and the establishment of healthcare focus groups to baseline the environmental and compliance problems among hospitals and to understand the target audience that was contributing to the problem.

### **C. Identify each tool (e.g. CM, Enf, CA, CI, EMS, P2, and Sustainability) that was selected to address the environmental problem(s) and the factors considered to use that tool?**

EPA Region 2 used all the tools at its disposal to improve the compliance and environmental footprint within the healthcare sector for the following reasons:

Compliance Monitoring/Enforcement: A well-publicized enforcement presence throughout the initiative promoted accountability, encouraged facilities to take advantage of the environmental assistance and compliance incentives offered, and addressed serious threats to human health and the environment as well as recalcitrant offenders.

Environmental Assistance: Environmental assistance increased the awareness and knowledge of environmental regulations, pollution prevention opportunities, and environmental management systems within the healthcare sector and provided tools to help healthcare facilities come into compliance and reduce their environmental footprint. Please note the use of the term environmental assistance instead of compliance assistance. When EPA Region 2 conducts workshops, and develops guides, fact sheets, and websites, we include information on pollution prevention, environmental management systems, and sustainability along with regulatory information because we believe these other tools promote long-term compliance. If a hospital eliminates mercury from its hospital, for instance, then the hospital does not need to worry about the hazardous waste, air, and water regulations associated with mercury.

Compliance Incentives: The promotion of voluntary audits and corporate-wide audit agreements under EPA's audit policy allowed us to reach more healthcare facilities than we would have through inspections alone, resulted in permanent compliance changes not just quick fixes and allowed us to target our inspections toward those hospitals that, for whatever reason, were not interested in voluntarily complying with environmental regulations.

### **D. Where more than one tool was selected to address the environmental problem discuss the relationship between the tools and the factors considered in sequencing and segmentation?**

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EPA Region 2 used environmental assistance, compliance incentives, compliance monitoring, and enforcement concurrently throughout our initiative. There was no waiting period prior to enforcement. This was a lesson-learned from our college and university initiative where we told academic institutions that they had a year before enforcement would start believing that would give them time to take advantage of the environmental assistance and compliance incentives offered prior to inspectors going out in the field. However, we found out that some colleges, instead of trying to come into compliance during this year grace period, actually cut their environmental budget when they knew we would not be inspecting them for a year.

Also, by using all the tools concurrently we were able to take advantage of information gathered from each aspect of our initiative to improve the cost-effectiveness of the other elements. For example, it was through inspections and audit disclosures that we learned that 60% of the violations at healthcare facilities were related to hazardous waste which prompted us to develop the first-ever healthcare-specific workshop on hazardous waste identification and management that has been widely acclaimed among healthcare facilities nationwide. Also, regional enforcement personnel can better target their healthcare inspections by taking into account the hospitals that are participating in our voluntary audit program.

### **E. Describe any changes from the initial strategy during implementation and factors contributing to those change(s)?**

EPA Region 2 developed a strategy that was designed to be flexible and adaptable. We have learned through previous compliance initiatives that the strategy is a living document that needs to be modified several times during implementation to take into account unanticipated situations, changes in rules or policies, changes in emphasis based upon compliance findings, etc. For this initiative, the changes that we made mainly concerned the level of outreach that was needed to address RCRA violations (i.e., development of full-day RCRA Waste Identification Workshop and associated tools, and adding more seminars than anticipated) and in

increasing the emphasis on certain hospital wastes (e.g., chemotherapy wastes, universal wastes, pharmaceutical wastes, waste epinephrine, etc.) and certain waste management practices (e.g., handling of universal wastes, chemo wastes, bulb crushing operations, and non-mercury alternatives for devices other than temperature and blood pressure measurement.)

### **F. What were the goals of the strategy and the measures that addressed them? What were the results of this approach?**

EPA Region 2's healthcare compliance initiative was undertaken for the purposes of improving environmental compliance and safety at main and off-site healthcare facilities; changing the culture of the healthcare community to one in which environmental compliance is a priority; promoting compliance of the entire sector; not just those reached through inspections; and ensuring continued compliance by implementing permanent changes such as through the development of environmental management systems. We also encouraged as part of our initiative that hospitals join Hospitals for a Healthy Environment, a voluntary program that is trying to educate healthcare professionals about pollution prevention opportunities in hospitals



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with the goal of reducing the environmental footprint of the healthcare sector.

The success of our healthcare strategy was measured in the following way:

- Increased awareness among the healthcare community regarding environmental requirements based on pre/post tests given at seminars/workshops and a survey;
- Increased number of healthcare facilities in Region 2 participating in Hospitals for a Healthy Environment;
- Number of violations corrected by hospitals as a result of our initiative as measured by case-conclusion data sheets and a survey.
- Amount of pollution reduced as a result of our initiative as measured by case-conclusion data sheets and a survey.
- Number of pollution prevention and best management practices undertaken by hospitals as a result of our initiative as measured by a survey.

Although we are still awaiting responses from our survey that we sent out to all the hospitals in New York, New Jersey, and the Caribbean, the environmental measures we have gathered so far show that our approach to the healthcare sector has proven effective in improving the compliance rate and environmental footprint of healthcare facilities in our Region. For instance, as a result of our initiative:

- Between 60-65% of hospitals that participated in our workshops increased their knowledge of environmental requirements;
- So far, 57 hospitals/healthcare systems in NY and NJ have joined the H2E Program and have pledged to eliminate mercury and reduce the volume of the waste they generate.
- More than 1100 violations have been corrected of which 60% were RCRA, 17% CWA, 12% EPCRA, 7% CAA, 3% TSCA and 1% SDWA;
- At least 11,660 lbs/year of hazardous waste, 80,930 gallons of oil and 2100 pounds of chlorofluorocarbons are now being appropriately managed; and
- Approximately 341 residential units are now in compliance with lead-based paint rules.

### **G. Describe the mechanisms used to communicate the strategy to internal (EPA managers and staff) and external (partners in implementing strategy, targeted audience and public) stakeholders.**

EPA Region 2's healthcare compliance initiative would not have been successful without coordination and communication both internally within EPA Region 2 as well as externally with other EPA offices and Regions, hospital associations, state/local environmental and health agencies and other federal government agencies. Internal communication was accomplished through the R2's Multimedia Enforcement Team (MET – an ad hoc group of senior enforcement staff in various media programs that provides support to senior managers), the R2 Multi Program Enforcement Steering Committee (MPESC – a group of enforcement program branch chiefs and others that coordinate multimedia inspection and enforcement activities), the R2 Pollution Prevention Council (R2P2C – a multi-Divisional workgroup that advises regional management of issues related to pollution prevention, sustainability, and outreach), and the Regional LAN. Communication with other EPA offices and Regions was accomplished through the monthly

## **ATTACHMENT D**

pollution prevention, federal facility, and compliance assistance conference calls and through E-mail as needed. As for our external stakeholders, we developed a healthcare focus group in New York State which included representatives from state/local environment and health organizations, trade associations, and major NY hospitals. We also participated in conference calls/meetings with Hospital for a Healthy Environment and the Veterans Health Administration and with a national workgroup for issues related to EMS development for hospitals. We also awarded a grant to H2E to work with NYC hospitals to promote compliance, mercury elimination, and pollution prevention, and sent a number of mailings and emails to hospitals in the region to provide compliance assistance and regulatory updates. Finally, we asked for feedback on our workshop evaluation forms and tracked the requests for information that we received for additional explanations of various regulations and practices.

### **H. Identify and discuss the resources and deployment of resources used to develop and implement the strategy. Address the impact of deploying resources on this priority with regard to other priorities.**

This initiative required 4.0 FTEs in resources internally each year from Region 2 in order to conduct the necessary environmental assistance and enforcement. We also needed the help of external stakeholders such as hospital associations and other government agencies. Moreover, we used federal facility, pollution prevention, environmental priority, and compliance assistance extramural funds as needed and available to develop tools and hold workshops. The deployment of these resources on this priority did not greatly affect any national priorities or other regional priorities since resources were reassigned accordingly. It, however, did impact to some extent a few core programs. However, Region 2 believes that the environmental results gained from this initiative far outweigh any losses in the core program. We would not have achieved such an improvement in the compliance rate and the environmental footprint within the healthcare sector if we had relied on our traditional compliance and enforcement techniques.

### **I. What steps were taken to monitor and evaluate the strategy's progress?**

Although the ultimate success of our healthcare strategy was determined by the outcome measures listed in Section F above, EPA Region 2 throughout the initiative looked at various output measures (e.g. # of inspections, enforcement actions, penalties, workshops, compliance assistance tools developed, audit agreements, disclosures, entities reached through compliance assistance, etc) to assess the strategy's progress. We also evaluated any feedback we received from our external stakeholders through workshop evaluations, meetings, conference calls, and focus groups to ascertain if we were on the right track in achieving our goals.

### **J. What factors or situational changes occurred during implementation of the strategy to justify exiting or continuing/expanding?**

EPA Region 2 believes that the majority of the healthcare facilities in NY, NJ, PR, and the VI have been given ample opportunity to participate in our workshops and our voluntary audit program. Furthermore, of the 480 hospitals in Region 2, --- % are either conducting their own self audits or have been inspected. Thus, we have decided to put healthcare facilities back into

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the core program. As such, we will continue to conduct random inspections of hospitals, answer any regulatory questions that hospitals may have, maintain our healthcare website, and process any audit disclosures that are received. However, we will not be holding any more workshops, developing new tools, or actively promoting the audit program.

### **K. Discuss any barriers/challenges in developing or implementing the strategy and opportunities for addressing them in the future.**

The major barrier to this initiative was the lack of environmental data on hospitals in the enforcement databases when we started. Very few inspections had been conducted at hospitals and thus, little was known about the compliance status of healthcare facilities at that time. Many at EPA, particularly Headquarters, are leery about starting compliance initiatives or even doing inspections in sectors that have never been targeted before. This led to much push back from EPA management in Headquarters. However, Regional management was willing, giving the limited data we had ascertained, to take a chance and target our limited compliance assistance and enforcement resources at hospitals. As you can see from our results, this risk taking on the part of Regional management paid off and several other Regions, seeing the results obtained by Region 2, are now seriously considering starting healthcare initiatives themselves. Another major barrier was the lack of clear, understandable compliance assistance information that healthcare facilities could use to identify the regulatory requirements that applied to them and to determine their compliance status. During the initiative, R2 developed or helped to develop many tools to assist healthcare facilities with these tasks including: the Healthcare Environmental Resource Center, the sector notebook, an EMS guide for healthcare facilities, many presentations and workshop materials, and a CD-ROM that contains all of these resources and links to additional information (e.g., pollution prevention and green building information for healthcare facilities.) The last major barrier was the lack of experienced staff in both the compliance assistance and the compliance monitoring and enforcement staff related to hospital operations (e.g., typical hospital waste streams and waste generating processes, alternatives to hazardous components, health and safety concerns, etc.)

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# Enforcement Alert

Volume 6, Number 1

Office of Regulatory Enforcement

March 2003

## EPA Strategically Addressing Raw Sewage Discharges Across Nation to Protect Public, Environment

### EPA Reaches Settlements with Baltimore, Other Municipalities to Stop Sewage Overflows, Overhaul Sewer Systems

Sanitary sewer systems that are properly designed, operated, and maintained, collect and transport all of

the sewage and industrial wastewater that flow into them to a publicly owned treatment works (POTW) for appropriate treatment before being discharged into our nation's rivers, streams, and other water bodies. However, when sanitary sewer systems are not maintained, or lack adequate capacity, discharges of raw sewage and industrial wastewater can occur without receiving appropriate treatment. In some systems, these sanitary sewer discharges occur on a regular basis.



**Some sanitary sewer overflows can occur at deteriorated manholes. (Photo courtesy of the Orange County Sanitation District.)**

health. EPA estimates that there are 20,000 separate sanitary sewer systems, and thousands of overflows occur each year.

Section 301 of the Clean Water Act prohibits the discharge of any pollutant to waters of the United States from a point source, unless the discharge is authorized by a permit. Limits in permits

for discharges from publicly owned treatment works must meet technology-based effluent limitations based upon secondary treatment, and any, more stringent limits to meet water quality standards. In addition, permits require proper operation

and maintenance for sewage collection systems and treatment facilities, for



#### About

#### Enforcement Alert

*Enforcement Alert* is published periodically by the EPA's Office of Regulatory Enforcement, Office of Enforcement and Compliance Assurance to inform and educate the public and regulated community of important environmental enforcement issues, recent trends and significant enforcement actions.

This information should help the regulated community anticipate and prevent violations of federal environmental law that could otherwise lead to enforcement action. Reproduction and wide dissemination of this publication are encouraged. *For information on how you can receive this newsletter electronically, send an email to the editor.*

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These discharges, called **sanitary sewer overflows (SSOs)**, occur when there is an overflow, spill, or release of raw or partially-treated sewage from a sanitary sewer collection system before it reaches a sewage treatment plant. Such releases regularly contaminate our nation's waters, degrade water quality, and expose humans to pathogens and viruses that can cause serious illness. In addition, these discharges can occur as basement backups, causing property damage and further threatening public

**One of EPA's ongoing enforcement priorities is to identify and correct these raw sewage discharges to protect public health and the environment.**



example, to ensure continued system integrity and prevention of unauthorized overflows of untreated wastewater.

Sanitary sewer overflows are prohibited as unpermitted discharges, and when they are prohibited in a permit. Given the seriousness of the problem in many major municipalities, one of EPA's ongoing enforcement priorities is to identify and correct these raw sewage discharges to protect public health and the environment.

### ***SSOs Endanger Public Health and the Environment***

People can be exposed to raw sewage through recreational contact such as swimming and fishing, in their homes and neighborhoods because of basement or street flooding, and through drinking contaminated water. Contact with raw sewage exposes people to a variety of pathogenic microorganisms, viruses, and intestinal worms that can

cause serious illnesses such as cholera, dysentery, infectious hepatitis, and gastroenteritis. Sensitive populations—children, the elderly, and those with weakened immune systems—are at a higher risk of illness.

Beach closures and recreational water warnings are designed to limit the human health impacts of bacteria and pathogens present in water, whether from SSOs, stormwater, or urban runoff.

Sanitary sewer overflows degrade the environment by polluting our waterways, adversely affecting fish and other wildlife species. For example, sewage can cause the explosion of algal growth, depleting oxygen in the water and killing fish. Raw sewage discharges cause property damage and public health problems when overflows flood homes and businesses that subsequently require cleanup, large scale disinfection, and the replacement of rugs, furniture, wallboard panels, and flooring. Raw sewage discharges also can lead to a drop in tourism and eco-

nomie loss from beach closures and shellfish and fishing restrictions.

### ***Why SSOs Occur***

Separate sanitary collection systems are intended to collect sewage that flows into them, and transport those flows for treatment. Municipalities must evaluate their collection systems to identify the causes of SSOs so that they can be anticipated and stopped before they harm public health and the environment.

Chronic SSOs can be the result of excessive amounts of rainfall or snowmelt seeping through the ground and overwhelming leaky sewers (infiltration), and excess rainwater feeding into sewers through illegally-connected roof drains, or basement sump pumps (inflow). In addition, municipalities with poor operation and maintenance programs may experience SSOs as a result of system deterioration. Pipes can, and often do, settle and crack, and need repair and replacement on a regular schedule. Sediment, grease, and other debris can build up and cause pipes to plug, break, and collapse. SSOs also may be caused by a lack of system capacity to collect, store, and/or convey flows for treatment.

### ***To Eliminate SSOs, EPA Uses Mix of Compliance, Enforcement Tools***

EPA's compliance goal is to eliminate SSOs from municipal collection systems and to ensure that sanitary



***When sanitary sewer systems are not maintained, or lack adequate capacity, discharges of raw sewage and industrial wastewater can occur and potentially endanger the public and environment. (U.S. EPA photographs.)***





wastewater is being conveyed to treatment plants for treatment in accordance with the requirements of the Clean Water Act. EPA uses a variety of compliance and enforcement tools to achieve environmental and human health improvements, including enforcement actions, compliance assistance, and compliance incentives.

### Enforcement

To date, EPA's enforcement actions have resulted in the elimination of billions of gallons of raw sewage discharges and the assessment of significant penalties. States also have joined EPA as co-plaintiffs in many lawsuits.

In these enforcement actions, EPA typically places municipalities under a compliance schedule that is as expeditious as practical (up to 15 years) to address deficiencies in their systems. Under settlement agreements, municipalities must assess their systems to understand the scope of the problem, then create a plan to improve, update, and repair their wastewater collection system. These municipalities also are usually required to develop and implement effective operation and maintenance programs.

### Baltimore Settlement

On Sept. 30, 2002, a consent decree implementing a significant settlement with Baltimore to eliminate unpermitted discharges of raw sewage from the city's sanitary waste collection system was entered in federal court. All of the waterbodies affected by these discharges fail to meet permit effluent limits based on Maryland's water quality standards for total coliform, an indicator of disease-carrying pathogens.

Baltimore owns and operates two sewage treatment plants and 1,312 miles of collection system that transport wastewater to the plants. The plants

### SSOs One Cause of Beach Closings

Agencies participating in EPA's annual beach survey reported that of the 2,445 beaches reported in 2001, 672 were affected by advisories or closings, most often due to elevated bacteria levels. Sanitary sewer overflows were identified as one of the sources of pollution that resulted in these advisories or closings. The number of such beach advisories and closures reported every year is on the rise.

Municipalities must strive to eliminate the discharges, which often can lead to serious illness and disease. People who swim near storm drains or off beaches polluted by sewage can become ill with fever, nausea, gastroenteritis, and flu-like symptoms, or more serious diseases.

serve a population of approximately 1.8 million people. The anticipated reduction in raw sewage discharges attributable to this settlement is more than 30 million gallons a year.

The settlement requires Baltimore to implement injunctive relief valued at approximately \$940 million over the next 14 years. The City will spend more than \$260 million to eliminate 54 sanitary sewer structures, increase the capacity of the collection system associated with these structures, and completely separate the combined portion (where sanitary wastewater and storm water are conveyed through a single pipe for treatment) of the system.

The City also will undertake a comprehensive, systematic investigation of its entire collection system, and implement and complete action plans to remedy problems identified during the investigation. Baltimore plans to install and

maintain a computerized collection and transmission system model to evaluate the impact of various remedial action projects on the transmission capacity and performance of the collection system. The City also will undertake a significant construction program to repair and rehabilitate pumping stations.

Baltimore also agreed to spend significant additional funds to identify and enforce against illegal sewer connections, implement an information management system program, develop and implement an emergency response plan for unpermitted discharges, improve the operation and maintenance program for the collection system, and report all unpermitted discharge events.

Finally, Baltimore agreed to pay a civil penalty of \$600,000, and implement a supplemental environmental project estimated at \$2.72 million designed to remove nitrogen from wastewater and improve water quality in the Chesapeake Bay.

### Other Recent Settlements

An agreement reached with Baton Rouge and East Baton Rouge, La., will reduce discharges of untreated sewage to public areas and U.S. waters by more than 1.2 billion gallons annually. Baton Rouge and East Baton Rouge paid a \$729,500 penalty and are spending up to \$461 million on selecting and implementing a comprehensive collection system improvement plan.

Also, a recent agreement with Toledo, Ohio, which has both a combined and a separate sanitary sewer system, will eliminate roughly 800 million gallons of untreated sewage annually.

As part of case settlements such as these, EPA also encourages municipalities to perform supplemental environmental projects to help lessen the environmental impacts of their violations and secure additional environmental ben-





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efits. For example, Baltimore will design a \$2.7 million biological nutrient reduction facility at its treatment plant to remove nitrogen from wastewater.

Under a settlement with the Water and Sewer Board of Mobile, Ala., the Board agreed to spend \$2.5 million to purchase and preserve valuable habitat in Mobile County and the Dog River watershed, repair private residential service laterals in low-income areas, and partially fund a database of water quality monitoring data that is available to the public.

### **Compliance Assistance**

EPA provides guidance, training, compliance assistance, and other technical and financial assistance tools to state and local agency personnel. EPA's regional offices lead these efforts, conducting training and workshops, participating in workshops, and conducting site visits to assess municipalities' progress in improving the capacity, management, operation, and maintenance (CMOM) of their sewage collection systems to eliminate and prevent SSOs.

Municipal officials looking for SSO-related information will find a wealth of regulatory, technical, and financial

assistance on a number of EPA websites. For example, on the Office of Water's website at [www.epa.gov/npdes/sso](http://www.epa.gov/npdes/sso), EPA offers fact sheets on financing capital improvements for SSO abatement and implementing an asset management approach. Links to guides for operating and managing sewage collection systems and developing sanitary sewer overflow response plans are also included. Users also will soon have online access to the Office of Water's CMOM self-assessment checklist.

**For more information about sanitary sewer overflows**, see websites in "Useful Compliance Resources" column at right.

**For information regarding cases discussed in this *Enforcement Alert***, contact Amanda A. Gibson, (202) 564-4239, Email: [gibson.amanda@epa.gov](mailto:gibson.amanda@epa.gov), or Kevin Bell (202) 564-4027, Email: [bell.kevin@epa.gov](mailto:bell.kevin@epa.gov), Water Enforcement Division, Office of Regulatory Enforcement, Office of Enforcement and Compliance Assurance.

**For compliance assistance information**, contact Sharie Centilla, (202) 564-0697, Email: [centilla.sharie@epa.gov](mailto:centilla.sharie@epa.gov), or Walter Brodtman, (202) 564-4181, Email: [brodtman.walter@epa.gov](mailto:brodtman.walter@epa.gov), Office of Compliance, Office of Enforcement and Compliance Assurance.

### **Useful Compliance Assistance Resources**

**Office of Enforcement and Compliance Assurance:**  
<http://www.epa.gov/compliance>

**Office of Water:**  
<http://www.epa.gov/npdes/sso>

**Local Government Environmental Assistance Network:**  
<http://www.lgean.org>

**National Small Flows Clearinghouse (aids small communities with wastewater problems):**  
<http://www.nesc.wvu.edu/nsfc>

**Region 4 POTW Management, Operation and Maintenance Program (MOM):**  
<http://www.epa.gov/region04/water/wpeb/momproject/index.html>

**National Compliance Assistance Clearinghouse:**  
<http://www.epa.gov/clearinghouse>

**Compliance Assistance Centers:**  
<http://www.assistancecenters.net>

**Small Business Gateway:**  
<http://www.epa.gov/smallbusiness>

**EPA's Audit Policy:**  
<http://oecaftp.sdc-moses.com/compliance/incentives/auditing/auditpolicy.html>





ATTACHMENT E

**EVALUATION OF OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE  
FRAMEWORK FOR A PROBLEM-BASED APPROACH  
TO INTEGRATED STRATEGIES** (Final, 11/25/02)  
and  
**GUIDE TO IMPLEMENTING THE INTEGRATED STRATEGIES FRAMEWORK**  
(Interim Draft, June 2003)

**Part A. Framework Work for a Problem-based Approach to Integrated Strategies (IS)** (Final, 11/25/02)

**Objective:** The purpose of these questions is to evaluate whether the *Framework for a Problem-based Approach to Integrated Strategies*, (*Framework*) issued 11/25/02, meets its goal of “encouraging pro-active consideration of the elements of an integrated strategy; including 1) data gathering to further define the problem and universe and develop compliance baselines, 2) tool selection and sequencing to effectively address the environmental problems (s), 3) up front development of measures to assess progress and outcomes and 4) communication with stakeholders, partners and the public.

1. In what capacity did you receive a copy of the *Framework*? Please select your primary position:

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>EPA Regions</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Regional IS Project Leader</li> <li><input type="checkbox"/> Regional IS Project Contributor</li> <li><input type="checkbox"/> Regional Compliance Assistance Coordinator</li> <li><input type="checkbox"/> Regional Enforcement Program Manager</li> <li><input type="checkbox"/> Regional Compliance Assurance Manager</li> <li><input type="checkbox"/> Other _____</li> </ul> | <p>EPA Headquarters (HQ)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> HQ Project Leader</li> <li><input type="checkbox"/> HQ project contributor</li> <li><input type="checkbox"/> HQ Program Manager</li> <li><input type="checkbox"/> HQ Compliance Assurance Manager</li> <li><input type="checkbox"/> Other _____</li> </ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- |                                                                                                                         | <u>Yes</u> | <u>No</u> | <u>Not Certain</u> |
|-------------------------------------------------------------------------------------------------------------------------|------------|-----------|--------------------|
| 2. Have you read the entire <i>Framework</i> ?                                                                          | ---        | ---       | -----              |
| 3. Is the <i>Framework</i> easy to understand?                                                                          | ---        | ---       | -----              |
| 4. Do you understand what the term “integrated strategy” means?                                                         | ---        | ---       | -----              |
| 5. Have you used the <i>Framework</i> to plan, design or develop an integrated strategy pilot project or other project? | ---        | ---       | -----              |

6. Which elements of the *Framework* did you use? (Select all that apply.)  
 None (If you choose “None,” do not select any other option below; continue to question 7.)

<u>Elements of <i>Framework</i> Methodology</u>	<u>Rating of Elements</u>			
	<u>Very Helpful</u>	<u>Somewhat Helpful</u>	<u>Not Helpful</u>	<u>NA</u>
<input type="checkbox"/> 1) Define the environmental problem, the universe or develop a compliance baseline?	-----	-----	-----	---
<input type="checkbox"/> 2) Consider all compliance assurance and enforcement tools available to address the problem?	-----	-----	-----	---
<input type="checkbox"/> 3) Select and sequence tools to effectively address the environmental problem(s)	-----	-----	-----	---
<input type="checkbox"/> 4) Develop measures to assess progress and outcomes?	-----	-----	-----	---
<input type="checkbox"/> 5) Define and acquire resources needed to implement the approach?	-----	-----	-----	---
<input type="checkbox"/> 6) Create an implementation schedule?	-----	-----	-----	---
<input type="checkbox"/> 7) Define roles and responsibilities of involved stakeholders?	-----	-----	-----	---
<input type="checkbox"/> 8) Create an effective communications strategy with all stakeholders?	-----	-----	-----	---
<input type="checkbox"/> 9) Create a means of monitoring and evaluating progress through all stages of the strategy?	-----	-----	-----	---

- |                                                                                     | <u>Yes</u> | <u>No</u> | <u>Not Certain</u> |
|-------------------------------------------------------------------------------------|------------|-----------|--------------------|
| 7. Would you recommend to a colleague that s/he read and use the <i>Framework</i> ? | ---        | ---       | -----<br>---       |

8. Please comment on the *Framework* as follows:

- a) Were the questions under each element of the *Framework* useful to you in developing that part of the strategy?
- b) Can you suggest additional questions or points to consider under each element?

9. Please provide your comments and suggestions to improve the *Framework* , e.g. additions, deletions, corrections. Please be as specific as possible.

10. How would you assess the overall effectiveness/ usefulness of the *Framework* in developing and implementing an Integrated Strategy Pilot Project?

**Part B. Guide for Implementing the Integrated Strategies Framework (IS Guide)** (Interim draft, June 2003)

Objective: The *IS Guide* has been developed to provide further assistance in planning for and piloting the initial group of eight regional integrated strategies. The purpose of the following questions is to evaluate whether the supplemental guidance meets the purposes stated: 1 ) ensure consistency in the planning, evaluation, and measurement of outcomes processes across the IS pilots; 2) identify and explain expectations for the IS pilots; 3) elaborate on and provide examples to illustrate select sections of the *Framework*; and 4) help document the decision-making process used in selecting tools to address environmental problems (knowledge management).

	<u>Yes</u>	<u>No</u>	<u>Not Certain</u>
2. Have you read the <i>IS Guide</i> ?	---	---	-----
3. Is the <i>IS Guide</i> easy to understand?	---	---	-----
4. Have you used the <i>IS Guide</i> to plan, design or develop an integrated strategy pilot project or other project?	---	---	-----

5. Which elements of the *IS Guide* did you use? (Select all that apply.)  
 None (If you choose "None," do not select any other option below; continue to question 6.)

<b>Elements of <i>IS Guide</i> Methodology</b>	<u>Rating of Elements</u>			
	<u>Very Helpful</u>	<u>Somewhat Helpful</u>	<u>Not Helpful</u>	<u>NA</u>
<input type="checkbox"/> 1) Develop measures to assess progress and outcomes?	-----	-----	-----	-----
<input type="checkbox"/> 2) Consider factors listed for selection, sequencing and segmentation of compliance assurance and enforcement tools available to address the problem?	-----	-----	-----	-----
<input type="checkbox"/> 3) Define and acquire resources needed to implement the approach?	-----	-----	-----	-----
<input type="checkbox"/> 4) Create an effective communications plan with all stakeholders?	-----	-----	-----	-----
<input type="checkbox"/> 5) Create a means of monitoring and evaluating progress through all stages of the strategy?	-----	-----	-----	-----

6. Would you recommend to a colleague that s/he read and use the <i>IS Guide</i> ?	Yes	No	Not Certain
	---	---	----- ---

7. Please comment on the *IS Guide* as follows:

- a) Were the questions under each element of the *IS Guide* useful to you in developing that part of the strategy?
- b) Can you suggest additional questions or points to consider under each element?

8. Please provide your comments and suggestions to improve the *IS Guide* , e.g. additions, deletions, corrections. Please be as specific as possible.

9. How would you assess the overall effectiveness/usefulness of the *IS Guide* in developing and implementing an Integrated Strategy Pilot Project?