

Measuring Pollution Prevention (P2) Regulatory Integration: Review of Other States' Efforts and Recommendations for Action¹

Summary of Research and Recommendations

Overview

In the late 1980s and early 1990s, most state pollution prevention (P2) efforts focused on the provision of technical assistance, based on the premise that a lack of technical knowledge was the primary impediment to business implementation of P2. It has become increasingly apparent that technical assistance alone is insufficient to motivate systematic change in industry. As a result, state and federal agencies have adopted policies aimed at infusing P2 into the regulatory system. This process of "P2 regulatory integration" is an attempt to overcome regulatory inertia against P2. It works by weaving P2 fully into agencies' core environmental programs — including permitting, enforcement, rulemaking, and inspections.

States' measurement of their own progress in promoting P2 has followed a similar course: that is, a focus on measuring the impact of technical assistance has preceded measurement of P2 regulatory integration. States began by tracking their activities related to technical assistance provision, such as the number of training sessions offered or facility P2 assessments performed. That trend is changing, however. In the spirit of government reinvention, state efforts to integrate P2 into day-to-day operations have accelerated. Along with reinvention have come new requirements for government performance measurement. At this confluence, states are beginning to experiment with the challenge of measuring their progress in P2 regulatory integration. In doing so, states must answer the question: "*Is the agency really integrating P2 into its activities?*" Furthermore, even when an agency has good knowledge of the level to which P2 is woven into agency activities, a second question is necessary: "*Are the agency's integration activities stimulating P2 and achieving environmental goals?*"

From September to December 1999, Tellus Institute conducted a review of several states' efforts to measure their pollution prevention (P2) regulatory integration efforts, to assist the Ohio Environmental Protection Agency (Ohio EPA) in developing a plan for its own P2 regulatory integration metrics system. This report offers a review of the breadth and depth of the efforts by eleven state P2 programs to design and collect metrics that answer the above questions. It outlines some of the more noteworthy metrics these states are collecting—ranging from the number of P2 technical assistance referrals made by inspectors to the amount of pollution reduction attributable to P2 components in permits. It also explains the states' various methods for collecting the data and how they use the data. The uses include evaluating and refining agency activities, reporting progress to upper management or others, holding staff accountable for progress, and/or reminding staff of the importance and relevance of P2 in their jobs. Furthermore, this report

¹ An article based upon findings from this report, entitled "The New Challenge for State P2 Programs: Measuring the Progress and Impact of P2 Regulatory Integration," has been accepted for publication in *P2: Pollution Prevention Review*, Summer 2000.

considers how states can move toward national and regional standardization of some metrics while continuing to be innovative in their metrics approaches. Finally, the report offers initial lessons and suggestions for Ohio EPA's Office of Pollution Prevention (OPP) in developing its own metrics system and promoting measurement of P2 regulatory integration throughout the agency. The report is supplemented by a useful reference matrix describing the nearly 200 metrics we found in our research.

Summary of Recommendations to Ohio EPA's Office of Pollution Prevention

Tellus Institute suggests the following approaches and roles for Ohio EPA's OPP. The recommendations are outlined in more detail on pages 12-15 of this report:

- **Focus on the Goal.** OPP needs to decide on the major purpose of their measuring P2 integration when designing a metric system. For example, design of a measurement system will differ depending on whether the purpose is to institutionalize frequent reminders to agency staff or demonstrate progress to upper management.
- **Include Measurement in Each Integration Initiative.** Encourage each Division's P2 Team to design initiatives that are measurable and include a measurement system. Whenever possible, the metric should be quantifiable, and the data should be collected and summarized internally by the Division.
- **Publicize Metrics.** An appropriate role for OPP is to conduct internal publicity of metrics to staff and upper management, along with a comparison to stated goals.
- **Demonstrate a Measurement System.** Although the primary goal may be to have each Division measuring its own P2 regulatory integration activities, OPP can consider demonstrating design and implementation of one system. This could be especially useful in a case where implementation of the initiative involves several units at the agency, such as incorporation of P2 related SEPs in enforcement settlements.
- **Demonstrate a Measurement Survey.** Again, the long-term goal may be to ensure that each Division is measuring the efficacy of its own integration activities, but OPP may consider demonstrating use of a survey to measure outcomes of agency integration efforts.
- **Measure P2 Team Progress** OPP should continue to play the role of monitoring the progress of P2 Teams in each Division. Because OPP has clear guidelines for the P2 Team activities, it can track and publicize the progress of each team.
- **Measure Institutional Drivers.** Another appropriate role for OPP could be to track P2 regulatory integration initiatives related to agency culture and institutional drivers, such as the number of position descriptions or professional development plans that include P2 elements, or the number of P2 related tasks in the strategic plan.
- **Capitalize on Current Measurement Approaches.** To be most efficient and effective, OPP's P2 regulatory integration measurement system should build upon any existing systems for tracking agency activities and outcomes. OPP should also try to insert P2 when agency information systems are re-designed, and be aware of regulatory integration metrics already being collected elsewhere in the agency.

Measuring Pollution Prevention (P2) Regulatory Integration: Review of Other States' Efforts and Recommendations for Action²

Main Report

Introduction

In September 1999, Tellus Institute began a review of the measurement practices of states engaging in pollution prevention (P2) regulatory integration, as part of effort by the Ohio Environmental Protection Agency (EPA) to develop a plan for its own P2 regulatory integration metrics. In this context, the term "P2 regulatory integration", means efforts aimed at institutionalizing P2 and a prevention approach in everyday agency activities, such as inspections, permitting, enforcement actions, and rulemaking. Tellus specifically decided not to look at metrics related solely to agency provision of P2 technical assistance to facilities. Those metrics were only considered if they were part of a larger integration program. In addition, this effort was intended to gather examples for Ohio EPA, and was not designed as a comprehensive review of either all states or all integration activities in the states interviewed.

Motivation for This Research

In the late 1980s and early 1990s, most state pollution prevention (P2) efforts focused on the provision of technical assistance, based on the premise that a lack of technical knowledge was the primary impediment to business implementation of P2. It has become increasingly apparent that technical assistance alone is insufficient to motivate systematic change in industry. As a result, state and federal agencies have adopted policies aimed at infusing P2 into the regulatory system. This process of "P2 regulatory integration" is an attempt to overcome regulatory inertia against P2. It works by weaving P2 fully into agencies' core environmental programs — including permitting, enforcement, rulemaking, and inspections.

States' measurement of their own progress in promoting P2 has followed a similar course: that is, a focus on measuring the impact of technical assistance has preceded measurement of P2 regulatory integration. States began by tracking their activities related to technical assistance provision, such as the number of training sessions offered or facility P2 assessments performed. A recent article indicates that, in 1996-1997, most states were still focusing their P2 measurement on the provision of technical assistance, despite the growing focus on P2 regulatory integration.³

Nearly three years later, that trend is changing. In the spirit of government reinvention, state efforts to integrate P2 into day-to-day operations have accelerated. Along with reinvention have come new requirements for government performance measurement. At

² An article based upon findings from this report, entitled "The New Challenge for State P2 Programs: Measuring the Progress and Impact of P2 Regulatory Integration," has been accepted for publication in *P2: Pollution Prevention Review*, Summer 2000.

³ Manns, E.K., & Varlamoff, S.M. (1999). Internal Performance Measurement in State P2 Agencies. *P2: Pollution Prevention Review*, 9(1), 55-65.

this confluence, states are beginning to experiment with the challenge of measuring their progress in P2 regulatory integration. In doing so, states must answer the question: ***Is the agency really integrating P2 into its activities?*** Most agencies do not have a system in place to answer whether P2 is becoming fully integrated or institutionalized over time. Furthermore, even when an agency has good knowledge of the level to which P2 is woven into agency activities, a second question is necessary: ***Are the agency's integration activities stimulating P2 and achieving environmental goals?*** A comprehensive P2 regulatory integration performance measurement system — which our research did not uncover — would answer both of these questions for an agency.

This report and the attached matrix were created to gather information on states' measurement efforts and to inform the Ohio EPA's own design of a P2 regulatory integration measurement system. We know of no other such national effort, and consider this report a vital step to help Ohio EPA create an efficient and effective measurement system.

Methodology

To gather information relevant to Ohio's needs, we interviewed and/or collected data from appropriate P2 staff at eleven state agencies. We gathered information on (1) what metrics these states use to measure P2 regulatory integration activities, and (2) how the states collect and use data related to these metrics. To supplement this data, we also examined the "Pollution Prevention Metrics Menu" developed by the Northeast Pollution Prevention Roundtable, published by the North East Waste Management Officials Association (NEWMOA), and agreed to by the Northeastern states. We reviewed Neltner and Zarker's proposal for a national P2 index.^{4,5} We also examined the recent article by Manns and Varlamoff, entitled "Internal Performance Measurement in State P2 Agencies," which primarily discussed the measurement of P2 technical assistance activities based on data collected in 1996-97.⁶

All the relevant metrics we found in our interviews and in reviewing the P2 Metrics Menu are summarized in the attached matrix, "Examples of P2 Regulatory Integration Metrics Being Collected by State P2 Programs." Organized by state, the metrics in the matrix are also identified by the type of regulatory category (e.g., enforcement, permitting, etc.), whether they are activity-based or outcome-based, whether they are currently being collected, and how they are collected. This categorization is designed to allow a practitioner to use the matrix as a tool—to examine metrics that might suit a particular regulatory integration need. For example, a practitioner might want to scan the matrix for all metrics that have to do with permitting and that are outcome-based. Then the practitioner could examine the notes associated with each metric, and contact colleagues in the appropriate states for advice, if desired.

⁴ Nelter, T., & Zarker, K. (1999). The P2 Measurement Challenge—Part I: A National P2 Index. *Prevention First*, 1(1), 11-13.

⁵ Neltner and Zarker's proposal is not specifically oriented toward P2 regulatory integration metrics, but their criteria are relevant and useful to this discussion.

⁶ Manns, E.K., & Varlamoff, S.M. (1999). Internal Performance Measurement in State P2 Agencies. *P2:Pollution Prevention Review*, 9(1), 55-65.

Our Findings

Our research revealed much more depth and variety in metrics for P2 regulatory integration than anticipated. Granted, much of the measurement is linked to P2 regulatory integration pilot projects, and not on-going, institutionalized procedures. However, most states appear to have at least some institutionalized metrics. Texas is implementing an especially broad-based integration strategy across several programs, and has metrics tracking progress in each area. Those states doing the least in terms of measurement cite the difficulties of limited resources and limited coordination among various agency programs.

Agency Use of Measurement Data

Why do agencies collect data on P2 integration? We observed four typical ends for data collection:

- *To evaluate and reform their own activities.* Illinois inspectors provide the P2 office with copies of checklists indicating the P2 suggestions offered during inspections. The Illinois P2 office uses this information to refocus its training for inspectors on new P2 ideas or more-relevant sectors. The P2 office is also able to send P2 staff on visits with inspectors who may need additional help integrating P2 into their inspections.
- *To justify and report progress to upper management, the legislature, and EPA.* This use represents the most typical for government performance measurement results. For example, reporting integration progress to EPA is a condition of some states' Pollution Prevention Incentives for States (PPIS) grants.
- *To hold programs and staff accountable for progress.* Data is used to demonstrate that staff are (or are not) making progress in integrating P2 into their jobs. This is a prevalent use in states where there is high-level support for P2 integration.
- *To remind staff of the requirement to integrate P2.* The process of collecting data can be viewed as an important tool in reminding agency staff of the importance of integrating P2 into their activities. Such an advantage can be associated with many of the data collection methods listed below.

Data Collection Methods

The attached matrix details several types of methods by which states gather P2 integration data. As shown in the matrix, most data collection and assessment is reportedly being conducted by staff in the agency's Pollution Prevention Unit rather than by other agency staff. This is likely because (1) we were interviewing P2 staff and (2) P2 has not been fully integrated into agency core activities, so management of integration data is still seen as a responsibility of P2 offices. Nonetheless, at least three of the interviewees noted that individual media programs in their agency had developed and were using their own P2 regulatory integration metrics—in some cases to a greater extent than their P2 program. For example, Alabama's P2 unit indicated that the RCRA enforcement program has developed on its own a P2 section on the inspectors' checklist—most likely in order to track integration of P2 into inspections. As described

in more detail below, several other states are collecting metrics on the integration of P2 into inspections, using similar methods.

Below we highlight several data collection methods. For more information, please see attached matrix, which gives the method of collection for each metric we found.

- Tracking activities in which the P2 unit is directly engaged. Many metrics address integration activities conducted by the P2 unit itself. For example, most states track the number of agency staff, such as inspectors, who have received P2 training.
- Tracking integration of activities outside the P2 unit via surveys. Such surveys vary in scope and frequency. For example, Alabama's P2 staff have not institutionalized many P2 metrics, but have undertaken an extensive survey of each media department to capture the scope of their own integration activities. This survey was originally intended to be conducted annually, but will probably operate on a biannual timeline. (Alabama's P2 staff want time to show progress before measuring again.) Other states may survey agency staff as frequently as every month, usually focused on a particular activity. For example, New Jersey's P2 office is using a monthly survey of air permitting staff to capture data regarding staff use of a tool for finding P2 opportunities in facilities. In this approach, the P2 unit is collecting data from staff of other programs. One disadvantage to this method is that response may be limited because data collection is not considered a vital part of media program staff activities.
- Tracking integration of activities via standardized P2 forms that agency staff fill out upon completion of an activity, such as an inspection. This method moves much closer toward institutionalizing data collection. For example, Illinois inspectors must fill out and return a P2 Summary Feedback Form.
- Tracking integration via the inclusion of a P2 line-item or section in a form or database which agency staff fill out as part of standard practice. For example, Texas collects enforcement activity and outcome data via a P2 section it has had placed in the enforcement tracking database, into which all inspectors must enter data. This method may be the most likely to succeed, because institutional collection mechanisms already exist (and may not require direct P2 program resources), and staff providing data may not view data provision as a new burden.
- Tracking referrals to technical assistance and results of those referrals via contact with technical assistance staff, rather than program staff. In this approach, technical assistance providers provide information on referrals and results. P2 technical assistance staff may be more interested in collecting this information than programmatic staff, as it is more closely related to their job purpose and activities. For example, Iowa expects to collect data this way from two different technical assistance providers, one of which is external to the agency.
- Tracking outcomes at facilities via a mailed or faxed survey, or a call to the facility (by P2 staff). In this approach, P2 staff conduct a limited survey of

facilities that were the target of some agency integration initiative. For example, Illinois has collected information in this manner from facilities that were inspected and where the inspector made P2 suggestions. Some states have experienced low response rates with this technique, unless very persistent. Yet, this technique can provide valuable information on the impact of specified agency efforts, although it does not offer a fully institutionalized and on-going data collection system.

- Examining reports or documents that do not typically have separate P2 sections, to determine whether P2 has been integrated. For example, Oregon tracks the occurrence of P2 in the strategic plans for programs, and Texas examines rulemaking records to determine the number of rulemaking teams that were multimedia. Again, these are activities conducted by their respective P2 units.
- Tracking environmental outcomes via existing databases, such as for TRI, BRS, or TURA. New York and Massachusetts are both using existing data effectively to measure P2 integration progress. (See more discussion below.) There are, of course, difficult issues of attribution and causality associated with tracking reductions in waste generation or discharge. Still, this is a valuable use of existing data that could further stimulate P2 progress.
- Tracking environmental outcomes at facilities via reporting requirements. One example is the practice of requiring facilities subject to enforcement actions to submit evidence of completion of their supplemental environmental projects (SEPs). In addition, Oregon's Green Permits program is requiring P2 performance reporting of participating facilities.

Two Types of Metrics

P2 integration metrics can be divided into those that are based solely upon agency activities — such as the number of inspections in which P2 suggestions were made — and those that are based upon the effect, or outcome, of the agency activity. Outcome-based activities can be further divided into outcomes that reflect (1) facility actions that were motivated by agency activities, such as the number of P2 suggestions by inspectors that were implemented by facilities, (2) financial results, such as savings by facilities implementing P2 suggestions, or (3) environmental results, such as pounds of pollution reduction due to including P2 in permits.

Both activity- and outcome-based metrics are useful. Most of the metrics we observed among states are the first type — focused on agency activities — likely because this is the logical first step in developing a measurement system, and because activity measurement is simpler than outcome measurement. However, states are beginning to attempt to bridge the gap between their P2 integration activities and outcomes, and several have developed innovative approaches to doing so, sometimes using existing data sources. The following two sections explore some of the more noteworthy metrics we found. As noted above, however, the attached matrix provides more information on each of these metrics, and would allow the reader to find other activity- or outcome-based metrics not listed here.

Noteworthy Activity-Based Metrics

These metrics can highlight the extent to which the agency is changing how it does business, can create accountability for change, and can even serve to catalyze change. Some examples of activity metrics:

- *# of times P2 was included in inspections / pre-permit meetings / etc.* Several states are collecting this data to gauge the extent to which staff have changed their ways. This information is most typically collected via checklists that are copied to P2 staff. Collection seems to be most effective, as mentioned above, when the P2 data has been integrated into a standard form. It is then perceived as less new and burdensome than stand-alone checklists. In addition, that information is often automatically entered into a database, providing a reliable collection mechanism.
- *# of times P2 was included in compliance notices, enforcement orders, and/or SEPs.* Several states are also tracking this data. One of the most effective and easy methods appears to be inclusion of a P2 question in an enforcement tracking database (Oregon).
- *# and types of P2 suggestions made by inspectors.* Illinois is tracking this data, via a P2 checklist inspectors submit to the P2 office whenever P2 has been included. As mentioned above, the Illinois P2 office uses this information to refocus its training and support for inspectors.
- *# of referrals to P2 assistance made by program staff.* Several states are tracking this data, which they can acquire from either the program staff or the P2 assistance staff. Such a method may be useful when the inspectors who make the referral are considered less likely to reliably notify the P2 unit of the referrals—or can simply be a good cross-checking mechanism.
- *Collecting information on all of a program's integration activities.* As mentioned above, Alabama has recently conducted an extensive survey of all its programs, similar to Ohio EPA OPP's efforts to collect regulatory integration information for quarterly reports. This survey enables it to capture and understand the extent to which media programs have made progress on their own in P2 integration, and the measures they have used to gauge their own progress (see the matrix for a complete list of AL's survey metrics). This technique may be especially useful in states where integration activities are fairly decentralized. It also serves to remind Divisions that they are being measured for their progress.
- *% of program's strategic plans that include P2.* As mentioned above, Oregon is tracking this metric, which it gathers by examining revisions to the DEQ's strategic plan.
- *# of staff trained in P2.* Almost all P2 programs track this metric, readily available because they do the training. However, some have stopped paying much attention to it. They have found it less relevant, over time, than other metrics because they have completed full rounds of training and because this metric doesn't necessarily indicate that staff are integrating P2 into in their activities.

- # of rules that incorporate P2. Texas appears to be one of the few states focusing on integrating P2 into rulemaking, and tracks it via a P2 question in the agency database used to keep track of new regulations.

Noteworthy Outcome-based Metrics

These metrics indicate whether an agency's action effected change at a facility. Outcomes could be a P2-related activity, such as conducting a P2 assessment or implementation of a best management practice (BMP) suggested by an inspector. Other facility outcomes can include actual reduced emissions or financial savings. Some noteworthy outcome metrics being employed are:

- % of emission reductions attributable to source reduction through NSR permitting. Texas gathers this information from a permitting database. NSR permittees record reduction information as a standard practice on their permit application review forms.
- Improvement in best management practices (BMPs) by target facilities. In at least one pilot project, Oregon staff developed a baseline of BMPs at previously unpermitted facilities before providing P2 assistance and then permitting them. The BMP baseline will allow them to gauge progress in lieu of environmental outcome data. In this case, Oregon staff would track the change in BMPs, but not the actual pollution reduction resulting from BMP implementation.
- Reduction in pollution because of P2 integrated into inspections, per additional # of staff hours spent incorporating P2 into inspections. Iowa will be asking staff to keep track of their hours on inspections with or without P2, in order to gauge the additional burden of integrating P2. They will also collect estimates of pollution reduction from technical assistance providers. This pilot project is only 1 year long, prohibiting long-term data collection. The metrics are designed to be able to justify further regulatory integration activity.
- Speed of compliance by facilities doing so with P2. Iowa will be comparing the compliance timelines of facilities that comply with and without using P2 approaches.
- Using aggregate and time-series data from RCRA's Biennial Reporting System (BRI) and the TRI to establish correlation between multimedia/P2 inspections and pollution reduction. As part of its M2P2 (multi-media pollution prevention) program, New York is using this data (as well as some data collected from facilities) to show the difference between M2P2 facilities and non-M2P2 facilities, as well as the change in performance of M2P2 facilities from before and after inspections. The matrix details the four analyses NYS DEC will be using.
- Reduction in chemical use and pollution, linked to P2 planning requirements. Using data required by TURA, Massachusetts can establish a correlation between reductions in chemical use and information included in P2 Plans. .
- Reduction in key chemical usage in certain sectors, as a result of self-certification program. As part of its Environmental Results Program in three industrial sectors dominated by small firms, Massachusetts requires facilities to note their use of key chemicals, such as perchlorethylene for dry cleaners. Changes can be linked to the P2

guidance provided as part of the Program. The NEWMOA P2 Metrics Menu also suggests tracking chemical usage, using purchasing and use records for chemical inventories that are required as part of environmental management systems under ISO 14000.

- # of P2 recommendations implemented by facilities. Several states collect this data, frequently through follow-up contact with facilities by P2 program staff, technical assistance staff, or media program staff. Response to such follow-up can be quite low, attributed to facility staff turnover or disinterest. Mail and fax surveys are less effective without personal contact. Success appears to improve when P2 staff are persistent, or when it is media program staff (such as inspectors) who collect the data.
- Savings by facilities as a result of P2 implementation. Several states track this metric, via agency follow-up.
- Pollution reduction attributable to SEPs. Some states are tracking this metric, through a requirement in SEPs that facilities provide evidence of the SEP's completion/success.
- "Significance" of additional emissions discovered by air permitters using a P2 software tool. Rather than asking for hard data to gauge outcome, New Jersey asks permitters this question in a monthly survey.
- Type of cross-media shifts discovered using P2 permitting tool. New Jersey also collects this data in its internal monthly survey, as well as a question to ensure staff from the affected media programs were notified of the shift.
- # of companies no longer required to report. The 1999 Manns & Varlamoff article reports that a limited number of states are collecting this P2 metric, which could conceivably be applied to an integration effort. Similarly, Texas is tracking the number of facilities, originally above eligibility thresholds for wastewater general permits, that become eligible for general permits.

Standardization Issues

Despite growing national concern over a lack of standardized P2 regulatory integration metrics, most states do not appear to be focusing on standardizing the metrics they are collecting. A more pressing concern is simply trying to be creative and find metrics that are applicable to the wide array of integration experiments developing in these states.

Nonetheless, it still seems possible and appropriate to attempt to develop metrics that are comparable and can be aggregated across states, especially in the infancy of integration—before it is too difficult to turn back. Some of this is already naturally happening, as some of states' metrics are rather standard (e.g., # and % of SEPs including P2). Standardizing will still allow states to develop innovative metrics and collection mechanisms.

NEWMOA's P2 metrics menu, agreed to by the Northeastern states, offers a good starting point for standardization.⁷ In July 1999, the P2 directors of seven northeast states agreed to a voluntary menu of P2 metrics, in the hope of facilitating regional data aggregation. One aspect of key importance for all states with an eye toward standardization is the agreement that all metrics should be reported to reflect calendar years, because of the extreme variance in state fiscal years. The metrics were chosen so that everyone could use them: many already are, and New York is coordinating the development of its own metrics with the menu. The criteria for including metrics in the menu were: "simplicity; clarity; relevance for the intended audiences...; feasibility; credibility; and balance between time involved with collecting data and its utility."

The menu is divided into three main categories: assistance activities (twenty metrics); regulatory and enforcement activities (six metrics); and environmental and economic outcomes (fourteen metrics). All of the metrics for regulatory and enforcement activities, and two of the assistance activities metrics are directly applicable to P2 regulatory integration activities. In addition, all of the metrics for environmental and economic outcomes can guide the format for outcome-measurement. The menu offers little guidance, however, on how data can be collected, leaving that to the states. Overall, the menu is intended to give states a reference from which they can choose metrics when developing their own measurement procedures. Such a tool can be especially helpful in states with few resources. For example, one interviewee noted that a planned survey was delayed for one year because they had difficulty developing a set of metrics on their own. (See the matrix section on "NE States" for a detailed list of the measures considered applicable to this research.)

The Neltner and Zarker article also offers a proposed reference set of ten metrics, but these are of a broader scope and meant to encompass the outcome of all kinds of P2 activities (not just regulatory integration). It may be desirable in the long run, if this proposed index comes to fruition, to begin aligning integration metrics with more general proposals. Another useful aspect of the article is that offers seven criteria to select individual measures for a national P2 index. They are quite similar to the criteria used by the Northeastern states:

- *Relevance to the public and upper management*
- *Relevance to agency technical staff*
- *Relevance to P2*
- *Data availability*
- *Reflecting broader trends*
- *Tacitly supported by stakeholders*
- *Reflect resource efficiency (i.e., normalize)*

These and the NEWMOA criteria may both be useful guides for designing a P2 regulatory integration performance measurement system at the state level.

⁷ The Menu is explicitly intended *not* to be used for comparison among states — many states resisted that idea, concerned that unfair comparisons might result — but does ultimately show promise in that regard.

Other Notable Integration Activities That Could be Measured

Tellus Institute set out to gather information on the measurement of states' efforts to integrate pollution prevention into permitting, inspections, enforcement, and rulemaking. Clearly, there are other agency activities in which pollution prevention can and should be integrated—and to which P2 regulatory integration metrics could be applied. A key example is data collection. For example, environmental agencies are required to track information on toxics use by virtue of their administration of the federal Toxics Release Inventory (TRI) Program. This process of data collection can also be viewed as a regulatory integration activity, as it is required by regulations, concerns information and trends on pollution prevention, and can be used to stimulate P2. For example, Ohio EPA's Division of Hazardous Waste Management (DHWM) asks inspectors to review TRI data before inspections in order to better inform them about the facility and potentially highlight P2 opportunities.⁸ OPP, for example, could track the frequency with which inspectors do so, and other applicable metrics: a good starting point upon which to model such metrics is New Jersey's survey of permitting staff who use available data to uncover fugitive and unpermitted emissions.⁹ Also, Ohio's OPP has used TRI data to pick sectors for P2 assistance. DHWM plans to target specific industrial sectors or geographic areas for compliance assistance and pollution prevention outreach, and will use generator's annual report data and possibly TRI data to pick the group. So, the area of data collection, analyses, and use is another important area in which agencies could apply performance measures, although it was not a focus of interviews conducted for this report.

Other notable examples of measurable integration activities include agency fee systems that may be designed to provide P2 incentives and pollutant trading programs that may be designed to encourage P2. However, although the attached matrix is not completely exhaustive, it does illustrate the diversity of metrics available for agency use, and the importance of including a measurement system in the design of any P2 regulatory integration initiative.

Recommendations to Ohio EPA OPP

In light of the information contained in this report, how should Ohio EPA's OPP proceed with design of a P2 regulatory integration performance measurement system?

Focus on the Goal. First, OPP needs to decide on the purpose of their measuring P2 integration. Is it to institutionalize frequent reminders to agency staff on the importance of P2? Is it to hold staff accountable? Is the purpose to assess and reform the activities of OPP and other offices? Or, is the purpose to demonstrate progress — either in activities or outcomes — to upper management and other parties? Answering this question is a

⁸ This is similar to New Jersey permit writers' use of available data and a materials accounting software tool to highlight P2 and multimedia opportunities.

⁹ Weaknesses in New Jersey's initial approach should be accounted for, however. For example, the New Jersey survey does not precisely tie outcomes/activities to individual facilities—but this could be easily changed.

necessary first step in the design of a P2 regulatory integration performance measurement system.

Include Measurement in Each Integration Initiative. It is difficult for OPP to design a comprehensive measurement system, because each of the Division's P2 Teams is in the process (as of Nov. 1999) of brainstorming, researching, and prioritizing its own strategies for P2 regulatory integration. Thus, the activities and approaches will vary greatly between Divisions. But it is OPP's role to strongly encourage each P2 Team to design initiatives that are measurable, and to include a measurement system in the design. Whenever possible, the metric should be quantifiable, and the data should be collected and summarized within the program office. For example, DHWM has a goal of integrating P2 into 100% of inspections. In order to measure progress toward this goal, returning inspectors could be required to (1) fill out a P2 integration feedback form to report on their success and problems, or (2) have a check box or question on P2 in an inspection report form that is in standard use by inspectors. The P2 Coordinator in each District could then be in charge of summarizing this information and forwarding it to DHWM management and OPP.

Publicize Metrics. An appropriate role for OPP is to conduct internal publicity of metrics to staff and upper management, along with a comparison to stated goals. To continue with the example from above, OPP could compare the information summarized and forwarded by DHWM, stating that P2 was somehow integrated into 80% of the inspections conducted in a particular quarter, along with narrative information on the types of P2 suggestions made (if this information is collected via feedback form). This information — an activity-based metric — could potentially serve to motivate DHWM to move closer to 100% goal, could motivate other Divisions to integrate P2 into inspections, and could provide a yardstick of progress to upper management. OPP could take on a similar role with Toxics Release Inventory (TRI) data. The information, collected and summarized by DAPC, could be assessed, interpreted, and publicized (internally) by OPP using its P2 lens. These reports could highlight sectors ripe for P2 outreach or P2 inclusion in enforcement actions (i.e., SEPs), or highlight the trends in waste generation or use of specific toxics that could motivate P2 integration.

Demonstrate a Measurement System. Although the primary goal may be to have each Division measuring its own P2 regulatory integration activities, OPP could take on a demonstration role, to foster in-house examples of P2 regulatory integration performance measurement systems. This could be especially useful in cases in which implementation of the initiative involves several units/Divisions at the agency. Such is the case with including P2 SEPs in enforcement settlements. The most basic measures are: # of SEPs with P2/Total # of SEPs, or # of SEPs with P2/ total # of enforcement settlements. As a demonstration project, OPP could design and implement a system by which this data is tracked and forwarded to OPP. OPP could then publicize this information compared with the stated agency goal.

OPP could also design and implement some interim metrics in order to identify limitations to the number of P2 SEPs executed. These interim metrics should be

designed to discover why there are not P2 SEPs in 100% of enforcement actions. What steps must occur to get P2 SEPs in enforcement settlements? Are these steps occurring at Ohio EPA? For example, OPP could track how many NOV's mention P2, how many AOs suggest the SEP option, how many enforcement meetings in which P2 SEPs are discussed, and how many companies come forward with SEP ideas that are not accepted by Ohio EPA. Tracking this information can indicate some problems that may be hindering the agency in fully meeting its P2 SEP goal.

OPP's design and implementation of such a performance measurement system for P2 regulatory integration would be challenging, as it would require concerted action on the part of several agency units. However, it is this kind of concerted action that may create the most successful, institutionalized metrics, and it would be a highly beneficial demonstration on the type of measurement system that OPP is advocating.

Demonstrate a Measurement Survey. Again, the long-term goal may be to ensure that each Division is measuring the efficacy of its own integration activities, but OPP may want to take on a demonstration role, to foster examples of using surveys to measure outcomes. To answer questions regarding the impact of certain integration activities, OPP could consider a survey technique. This survey, conducted with a discreet sample size, could take the form of follow-up visits or calls to facilities recently inspected. These interviews could provide insights into the impacts of the inspector's efforts to catalyze P2. (See Illinois example in matrix.)

Measure P2 Team Progress. OPP can continue to play the role of monitoring the progress of P2 Teams in each Division. Because OPP has clear guidelines for the P2 Team activities, it can track and publicize the progress of each team.

Measure Institutional Drivers. Another appropriate role for OPP could be to track P2 regulatory integration initiatives related to agency culture and institutional drivers. This could include the # of position descriptions (PDs) or professional development plans (PDPs) that include P2 elements, per total # of PDs or PDPs—a figure which could routinely be compared to a goal of X%. It may also include # of P2 tasks in the strategic plan or annual work plan for each Division/ Total # of tasks. For this second metric, Ohio EPA could decide on an agency-wide goal of X% of all tasks, or for a goal of one task under each planning category (permitting, compliance, rulemaking, etc.)

Capitalize on Ongoing Measurement Activities. There is currently a surge of interest in government performance management, and there is also an abundance of existing performance measurement and reporting systems. To be most efficient and effective, a new P2 regulatory integration measurement system should build upon any existing systems for tracking inspections, enforcement activities, rulemaking, etc. Many examples in the attached matrix indicate that P2 has been integrated into already existing enforcement or permitting databases in other states. This is an ideal approach, as it represents minor changes to existing, institutionalized systems rather than overlay of a new system. In order to be best prepared to encourage the design of integration initiatives that include a measurement scheme, a P2 program should be fully informed about how

each agency activity is currently measured. It should also be aware of and seize opportunities to insert P2 when various agency information systems are re-designed. In addition, P2 programs should try to understand what P2 integration metrics are already being collected elsewhere in the agency, and learn from them.

Conclusions

Based on our findings, we strongly encourage Ohio EPA's OPP to move forward in developing and institutionalizing a P2 regulatory integration metrics system. The P2 programs we contacted varied a great deal, especially in regard financial resources, staff size, and agency approach to integration. Their experience in using a myriad of innovative techniques to measure and catalyze P2 integration suggests not only that implementing a metrics strategy is both a critical *and* viable activity for OPP, but also that OPP can at the same time contribute to the trend toward national standardization by developing at least some metrics that would be comparable to other states.